Profiles of Teachers' Occupational Health:

Associations with Classroom Management Practices, Gender, and Race

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SSB: Co-conceptualized the study, led data preparation, manuscript preparation.
CAK: Co-conceptualized the study, led final analyses, supported manuscript preparation.
HLM: Consulted on statistical approach and manuscript preparation.
CPB: Project Principal Investigator. Collaborated in the writing and editing of the final manuscript.

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Abstract

Despite research linking teachers' occupational health to student outcomes, the processes through which these associations exist are unknown. In a sample of 516 teachers, four latent profiles of occupational health were identified, indicated by job stress, occupational burnout, and teaching self-efficacy: lowest occupational health (17%), low-to-mid occupational health/mid self-efficacy (38%), mid-to-high occupational health/mid-self-efficacy (30%), and highest (15%) occupational health. Proactive behavior management practices were observed less frequently for teachers in the lowest (vs. highest) occupational health profile. White female teachers were associated with profiles of low occupational health more than White male teachers, and male and female teachers of color.

Keywords: Latent profile analysis; occupational health; teacher well-being; classroom management; teacher practices

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Teachers experience one of the highest levels of occupational stress and lowest levels of well-being of any profession (Herman et al., 2020; Johnson et al., 2005), a trend that has been documented in the United States and around the world (Bauer et al., 2006; Pithers & Soden, 1998; Santamaría et al., 2021), and has been exacerbated by the COVID-19 pandemic (Pressley et al., 2021). In addition to contributing to teacher distress, poor occupational health is theorized to jeopardize teachers' use of effective teaching practices, specifically their ability to manage the classroom. These practices in turn impact students' social, emotional, and academic development (Jennings & Greenberg, 2009). Although recent evidence has demonstrated that teachers' occupational health is related to a range of student outcomes (e.g., Herman et al., 2020), the pathways through which these associations operate, such as through their classroom management practices, are not well understood. Relatedly, little research has quantified differences in occupational health by demographic characteristics, despite findings that early career teachers, male educators, and teachers of color have been identified as experiencing high rates of attrition from the profession, which are often attributed to low occupational health (Carver-Thomas & Darling-Hammond, 2017; Dupriez et al., 2016; Harmsen et al., 2018; Ingersoll et al., 2018; Perrone et al., 2019).

The present study aimed to address these gaps in the extant literature by 1) exploring profiles of teachers indicated by their occupational health; 2) testing whether profile membership was related to observations of teachers' classroom management practices; and 3) identifying characteristics associated with profile membership. Together, this line of inquiry will provide greater insight on processes through which occupational health may impact teachers' productivity. In turn, this research may inform approaches for increasing teachers' satisfaction with the work environment, performance, and ultimately retention in the field of education.

Occupational Health Crisis in Education

Occupational health refers to individuals' evaluations of various aspects of their job (van Horn et

al., 2004). The construct is multifaceted, incorporating affective, cognitive, professional, social, and psychosomatic dimensions (van Horn et al., 2004). Importantly, Kazdin (1993) posited that the *absence* of dysfunction does not reflect the *presence* optimal functioning. Thus, it is important to consider both negative experiences of distress (e.g., stress) and positive experiences of well-being (e.g., self-efficacy) in assessing occupational health. Indeed, researchers have used a variety of measures to assess this construct, including job stress, occupational burnout, self-efficacy, and others (Bakker & Rodríguez-Muñoz, 2010; van Horn et al., 2004). We focus on three salient and well-studied experiences of occupational health in the present study: teachers' experiences of job stress, occupational burnout, and self-efficacy. In terms of job stress, teachers report one of the highest levels of stress and greatest levels of physical symptoms associated with stress of any profession (Johnson et al., 2005). High levels of stress are often associated with experiences of occupational burnout and feelings of emotional exhaustion (Maslach & Jackson, 1981). Indeed, 70% of secondary school teachers report moderate to high levels of emotional exhaustion (García-Carmona et al., 2019). In contrast, teachers' feelings of self-efficacy reflect their judgements of their beliefs that they can perform their teaching duties well (Tschannen-Moran & Hoy, 2001). As such, self-efficacy has been linked with increased teacher investment in their classes, their teaching practices, and student academic outcomes (Tschannen-Moran & Hoy, 2001).

Teachers' occupational health has received increased attention as it is a major contributor to attrition from the profession (Harmsen et al., 2018) and the teacher shortage in the United States (Carver-Thomas & Darling-Hammond, 2017). In fact, high teacher turnover is a major drain on district budgets, contributes to instability in the school community, and takes a toll on student achievement and staff morale (Carver-Thomas & Darling-Hammond, 2017; Greenberg et al., 2016; Sorensen & Ladd, 2020). The urgent need to attend to teachers' occupational health has only strengthened with the additional stress felt by teachers since the onset of the COVID-19 pandemic (Authors et al., under review; Pressley et al., 2021).

Profiles of Teachers' Occupational Health

Most of the research in this field has utilized a variable-centered approach to studying the

antecedents and consequences of teachers' occupational health – in essence, modeling one dimension of occupational health with respect to potential antecedents or consequences of that experience (e.g., Clunies-Ross et al., 2008; Harmsen et al., 2018; Howard & Hoffman, 2018; Jennings, 2015). Considering occupational health incorporates a range of experiences related to the workplace, it may be advantageous to consider multiple facets of occupational health in tandem, including assessing whether subgroups of individuals exhibit particular combinations – or profiles – of occupational health indicators. Person-centered approaches allow researchers to identify subpopulations within a sample, and explore whether these subpopulations vary in their predictors, correlates, or outcomes (Howard & Hoffman, 2018). Specifically, latent profile analysis (LPA) is one such person-centered approach that identifies such unobserved (i.e., latent) subgroups of individuals based on a series of continuous indicators (Oberski, 2016). Recent studies have utilized person-centered approaches in the educational context, finding evidence of subgroups of teachers using a variety of indicators such as stress, burnout, job demands, self-efficacy, coping, work engagement, and job resources (Aulen et al., 2021; Brun et al., 2021; Gartmeier et al., 2016; Pas & Bradshaw, 2013; Virtanen et al., 2019).

However, only a few studies have employed this method to detect latent profiles of teachers according to their occupational health, identifying between two to five profiles of occupational health characterized by indicators such as job stress, burnout, self-efficacy, coping, work engagement, job demands, and resources (Collie et al., 2020; Herman et al., 2018, 2020; Klusmann et al., 2008; Pas & Bradshaw, 2013; Salmela-Aro et al., 2019). For example, Collie et al. (2020) identified five profiles of occupational health based on teachers' job demands and resources, and profile membership was uniquely related to teachers' commitment to the profession. In summary, the recent application of this person-centered approach in the educational context suggests that it is a useful methodological approach for identifying latent profiles of teachers, with support for the notion that there are latent profiles of teachers as indicated by their occupational health which are meaningfully related to other constructs of interest.

The Association Between Occupational Health and Classroom Practices

In addition to signaling that a teacher may be struggling, poor occupational health is thought to

jeopardize teachers' ability to succeed in their professional endeavors. The Prosocial Classroom model is a conceptual framework that posits that teachers' occupational health impacts their ability to establish and maintain healthy relationships with students, implement social and emotional learning (SEL) programs with fidelity, and effectively manage the classroom (Jennings & Greenberg, 2009). Of particular interest are teachers' use of effective classroom management strategies, which are known to be related to students' academic, behavioral, social, and emotional outcomes (Korpershoek et al., 2016; Norris, 2003). Collier-Meek et al. (2019) describe classroom management as a multi-faceted construct, including establishing clear expectations for student behavior, preventing problem behaviors, and effectively responding to student behavior. According to this contemporary conceptualization, effectively establishing expectations is achieved by instituting classroom routines and using proactive statements to communicate positively stated expectations. Preventing problem behaviors requires that teachers actively monitor students and anticipate student behaviors and needs. Finally, being responsive to students involves reinforcing desired behaviors (e.g., through affirming statements) and addressing student needs, while also communicating about problematic behaviors (Collier-Meek et al., 2019).

Poor occupational health is theorized to erode the energy teachers have to devote to their classroom, with energy channeled instead to coping (Chang & Davis, 2009; McIntyre et al., 2017). Reductions in positive energy are thought to diminish teachers' patience, positivity, and capacity to be responsive to students in the classroom (McIntyre et al., 2017). Moreover, poor occupational health is thought to increase teachers' tendency to be reactionary (vs. responsive) to students, and result in an increased focus on negative behaviors (Jennings & Greenberg, 2009). In sum, poor occupational health is theorized to be associated with decreased teacher capacity for establishing expectations, prevention of problem behaviors, and responsiveness to students – which are all key components of effective classroom management (Collier-Meek et al., 2019; Jennings & Greenberg, 2009).

Variable-centered studies have found associations between dimensions of occupational health (e.g., burnout, stress) and observations of teachers' classroom organization, sensitivity to students, and reactive behavior management (Bottiani et al., 2019; Braun et al., 2019; Clunies-Ross et al., 2008;

Hoglund et al., 2015; Jensen & Solheim, 2020). We know of only two studies that have addressed this topic using a person-centered approach, the first finding no differences in classroom management between profiles (indicated by work engagement and resilience; Klusmann et al., 2008). Notably, this study measured classroom management as a combination of student-reported classroom disturbances and time efficiency, likely a consequence, or measure of effectiveness, of teachers' classroom management practices (Collier-Meek et al., 2019). However, the same study did find student-reported attention to students' needs and several indices of student-reported instructional quality were highest among the profile with the greatest occupational health (Klusmann et al., 2008). Similarly, Herman et al. (2020) found teachers in the profile with the greatest occupational health (indicated by stress and coping) were observed to employ fewer harsh reprimands than teachers in the profile with the lowest occupational health. Together, these studies provide initial evidence that occupational health is related to some elements of classroom management in the person-centered framework.

Observational measures of classroom management have emerged as a preferred method of assessment for several reasons. Student-reported data have unique strengths, and although some researchers consider students to be "experts" in teacher behavior (Lüdtke et al., 2009), there remain concerns that student- and teacher-reports of classroom management may be influenced by social desirability bias and halo effects, while trained observers can be aware of aspects of teacher practices that students are not (Lüdtke et al., 2009; McKellar et al., 2020). As such, most of the research examining the association between teachers' occupational health and classroom practices in a variable-centered framework has used the Classroom Assessment Scoring System (CLASS), a high inference observational measure of the quality of teachers' interactions with students (Pianta et al., 2008). Although the CLASS provides a holistic understanding of the global quality of teachers' interactions with students around classroom management, it does not allow for a nuanced understanding of specific, discrete practices that teachers may employ in the classroom. Thus, the present study advances this line of work in two distinct and novel directions: by assessing how teachers' occupational health may be related to observations of teachers' use of discrete practices using the Assessing School Settings: Interactions of Students and

Teachers (ASSIST) observational measure, and doing so using a person-centered approach.

The ASSIST is intended to provide an independent assessment of teachers' classroom management practices and students' behavior. Originally developed by (Rusby et al., 2011), the measure incorporates two types of assessments: 1) tallies (i.e., running counts) of specific practices and behaviors, which are live coded during the 15-minute, in-class observation period, and 2) Likert-style global ratings, which are completed immediately following the observation. Teachers' classroom management practices measured by the ASSIST has been found to be relatively stable across observations (Gaias et al., 2019). Although the ASSIST assesses both teachers' classroom management practices and student behavior, the present study focuses only on the former. The use of the ASSIST has grown in recent years (e.g., Bradshaw et al., 2018; Gaias et al., 2019; Larson et al., 2020; Pas, Cash, O'Brennan, et al., 2015), with findings demonstrating that observations of teachers' use of effective classroom management practices are related to student reports of active classroom engagement (Larson et al., 2020), and observations of student behavior (Pas et al., 2015), and that teachers' classroom management practices are amenable to intervention (Bradshaw et al., 2018). To date, no studies have investigated how teachers' occupational health may be related to their classroom management practices as measured by the ASSIST.

Association Among Profiles of Occupational Health and Teacher Demographics

Variable-centered research suggests that there may be differences in occupational health and attrition from the profession according to teachers' demographics (Bottiani et al., 2019; Carver-Thomas & Darling-Hammond, 2017; Ingersoll et al., 2018; O'Brennan et al., 2017), yet we know of only two person-centered studies that have considered how teachers' characteristics, primarily gender, was associated with profiles of occupational health, which we elaborate on in more detail in the section below (Collie et al., 2020; Salmela-Aro et al., 2019). Thus, in conjunction with testing the association between profile membership and classroom practices, we also considered how teachers' gender, race, and experience teaching may be associated with such latent profiles. This line of inquiry expands our understanding of who is at risk for experiencing specific patterns of occupational health.

Gender. According to variable-centered research on teachers, women tend to report greater

occupational stress and burnout than men (Bottiani et al., 2019; Klassen & Chiu, 2010; O'Brennan et al., 2017), and in general, women report greater levels of emotional exhaustion than men (Purvanova & Muros, 2010). However, recent studies using person-centered approaches in education have suggested *higher* occupational health among women than men, with women having greater odds of being in a profile characterized by high engagement and low burnout (vs. engaged and burned out; Salmela-Aro et al., 2019), and greater odds of being in a profile characterized low/mixed demands and high resources (vs. high demands and low resources; Collie et al., 2020).

Also of relevance is the very female-dominated nature of the teaching profession; women make up about 75% of teachers in the United States (National Center for Education Statistics, 2020). Scholars have called to increase the representation of men in the workforce, citing the importance of having a diverse array of role models for children, specifically, the importance of having a male teacher for boys (Bryan & Ford, 2014; Bryan & Williams, 2017). At the same time, some research has indicated that men exit the teaching profession at higher rates women (Dupriez et al., 2016). Thus, with an interest in retaining men in the profession, we explored whether profiles of occupational health were systematically related to teachers' gender. Investigating this association in a person-centered framework allows for an assessment of whether men have relatively low occupational health in one area (e.g., stress) relative to other areas (e.g., self-efficacy), as this could suggest specific targets for intervention.

Race. With regard to race, there is evidence that White teachers report higher stress and burnout than teachers of color (Bottiani et al., 2019; O'Brennan et al., 2017). Although one study found teachers of color to be more likely to experience poor occupational health than White teachers, they became less likely to experience poor occupational health once the racial composition of the school was accounted for (Fitchett et al., 2020). However, research has emphasized the invisible labor that educators of color face, including expectations of racial solidarity from students which can conflict with their professional roles, performance pressures due to high visibility, and role entrapment (e.g., positioned to speak as the "expert" for their race; Dickar, 2008; Kelly, 2007). Indeed, the turnover rate for Black teachers is nearly 50% higher than the rate for non-Black teachers, which may reflect that this group struggles with unique

demands which take a toll on their occupational health (Carver-Thomas & Darling-Hammond, 2017). As such, investigating whether teachers of color have greater odds for membership in profiles of poor occupational health may suggest potential points of intervention to help retain teachers of color in the profession.

There has been specific attention called to the distinctive challenges presented to male teachers of color (Bryan & Ford, 2014; Bryan & Williams, 2017). Consisting of only 2% of the workforce, it is theorized that male teachers of color face unique prejudice and negative stereotypes, and are often relegated to positions that enforce discipline rather than promote learning. To succeed, they must defy traditional expectations of race and gender, which is thought to cause additional emotional and psychological stress on top of the already stressful job of teaching (Bryan & Ford, 2014). Thus, it is possible that male teachers of color, in particular, experience distinct profiles of occupational health. Yet, we know of no studies which have examined how teachers' race, nor the intersection of race and gender, is associated with profiles of occupational health.

Teaching experience. The first few years in the classroom are particularly challenging for teachers (Buchanan et al., 2013; Clandinin et al., 2015; Dicke et al., 2015; Gallant & Riley, 2014; Rieg et al., 2007), with recent statistics indicating that 44% of new teachers leave the profession within their first five years (Ingersoll et al., 2018). Poor occupational health (measured idiosyncratically by study; e.g., burnout, negative experiences with students, and negative social interactions) experienced by early career teachers has specifically been related to turnover intentions (Gallant & Riley, 2014; Goddard & Goddard, 2006; Harmsen et al., 2018; Perrone et al., 2019). Further, a recent study employing a person-centered approach found that more experienced teachers were associated with profiles of greater occupational health (Collie et al., 2020), thus highlighting the importance of considering career status in relation to occupational health.

Present Study

The present study addressed the occupational health crisis in education by first empirically deriving latent profiles of teachers as indicated by their occupational health. We hypothesized that several

latent profiles of teachers would emerge. Second, informed by the Prosocial Classroom model (Jennings & Greenberg, 2009), we tested the associations between profile membership and teachers' classroom management practices. We hypothesized that profiles of higher occupational health would be associated with greater use of effective classroom management practices than profiles of poorer occupational health. Third, we assessed whether teachers' gender, race, and experience in the classroom were systematically related to profile membership. We hypothesized that men, teachers of color, and those new to the profession (i.e., early career) would have greater odds of being in a profile of poorer occupational health than women, White, and experienced teachers. A more complete understanding of these subgroups may prove to be particularly helpful in identifying teachers in need of additional support from school administration and interventionists.

Method

Study Design and Procedure

Data for this study came from a larger school-based coaching intervention (see Bradshaw et al., 2018). Teachers were recruited in six consecutive cohorts from schools in the mid-Atlantic region of the United States. Because of the present study's focus on the naturally occurring profiles of teachers, only data from the baseline (pre-intervention) timepoint were used in these analyses to avoid possible interference due to the intervention. Upon consenting to the evaluation study, teachers completed an online survey regarding their demographics and occupational health. At the start of the school year, trained and certified research assistants conducted observations for those who consented to observations.

Observations of classroom management. Independent observers completed an 8-hour didactic training in the Assessing School Settings: Interactions of Students and Teachers (ASSIST; Rusby et al., 2011; also see Pas et al., 2015) measure. During the course, observers were trained to reliably detect teachers' classroom management practices consistent with a manualized definition of each behavior. Training included extended video coding practice, feedback cycles, and in-school live practice. Average inter-observer agreement across student and teacher tallies for initial in-school reliability assessment was at least 83% for all study cohorts and was at least 85% for video-based recalibration tests mid-way

through data collection.

Per the ASSIST protocol (for additional details see Pas et al., 2015), one observer entered the classroom and spent three minutes acquainting themselves with the classroom environment and answering descriptive questions regarding the student composition and organization of the classroom. Next, for 15 minutes, observers live-tallied a series of specific teacher behaviors. Finally, they exited the room and completed global ratings. Study design dictated that some teachers were observed over multiple ASSIST cycles. Since this was not the case for all teachers, for consistency, only data from the first observation cycle for each teacher were analyzed in this study, however, the intraclass correlation (ICC) for repeated observation within teacher is generally high (e.g., ranged from 0.72 to 0.81, with an average of .75 for global ratings; Gaias et al., 2019). For additional details on the training and reliability of the observers, see (Bradshaw et al., 2018; Debnam et al., 2015; Gaias et al., 2019; Pas et al., 2015)

Participants

Only lead teachers in grades 1-8 general education classes who had consented to participate in the project were eligible for these analyses (N = 606). The analytic strategy did not allow teachers to be missing on predictor variables. Thus, 60 teachers were excluded from the current analysis due to missing self-report data, which was needed for assessing the LPAs; *t*-tests indicated these teachers did not differ on any classroom management practice outcome from those who had self-report data. An additional 30 teachers were excluded from analyses due to missing information on observation contextual characteristics; these teachers again did not differ on self-reported measures from those who had all observation-related data. This resulted in a final analytic sample of 516 teachers in grades 1-8 (81% female; 66% White; 31% early career teachers of less than four years of teaching experience; 15% in elementary schools, 73% middle schools, 12% combined elementary/middle schools; see Table 1 for descriptive statistics). Five of the 54 schools participated in both the first and sixth cohorts of the project. These "repeat" schools were considered distinct, due to the rapid student and demographic turnover over the five-year interim, resulting in 59 schools. Schools ($N_{Elementary}$ = 9; N_{Middle} = 35; $N_{Elementary/Middle}$ = 15) ranged in enrollment (*Range* = 188-1509; M = 662; SD = 298) and socioeconomic status, reflected by the

proportion of students eligible for free or reduced-price meals (FARMS; *Range* = .12-.94; *M* = .57; *SD* = .22).

Measures

Occupational health. Teachers self-reported on their feelings of job stress, occupational burnout, and teaching self-efficacy. All items were rated on a 0 to 5 scale (0 = *Strongly Disagree*; 5 = *Strongly Agree*). Items were reversed when necessary such that higher values indicate greater endorsement of the construct. Cronbach's alphas (α) for the current sample are provided.

Job stress was measured using five items from the Exposure to Job Stress measure (Hurrell & McLaney, 1988; e.g., "In my job, I feel like I am under great stress"; α = .83).

Occupational burnout was measured using four items from the emotional exhaustion subscale of the Maslach Burnout Inventory (Maslach & Jackson, 1981; e.g., "I feel burned out from my work"; α = .90).

Teaching self-efficacy for classroom management was measured using five items adapted from the Personal Teaching Efficacy scale (Bottiani et al., 2019; adapted from Hoy & Woolfolk, 1993; e.g., "I can effectively work with deviant or disruptive students"; α = .83).

Classroom management practices. Observations of teachers' classroom management practices were measured using the ASSIST (Bradshaw et al., 2018; Rusby et al., 2011). Observations were conducted in accordance with ASSIST protocol, as described above (for more information, see Bradshaw et al., 2018 and Pas et al., 2015).

ASSIST tallies were counted in real-time during the 15-minute observation period.

Proactive behavior management (Proactives) were a count of all verbal (e.g., commanding, prompting) and physical (e.g., modeling) demonstrations of behavioral expectations prior to a behavior becoming a problem (i.e., not in response to misbehavior).

Approvals were a count defined as a tangible item, verbal praise, approving gestures (e.g., thumbs up), or physical contact (e.g., pat on the back) that recognized students' performance.

Reactive behavior management (Reactives) were a count of teacher cues (e.g., touch, gesture,

proximity, and comment) to redirect inappropriate behavior (excluding disapproval).

Disapprovals were a count of a threat or use of a tangible punitive consequence (e.g., detention), verbal criticism or sarcasm, gesture, or physical contact to demonstrate dissatisfaction with behavior.

ASSIST global ratings were completed immediately after the 15-minute observation. All global items were rated on a 0 to 4 scale (0 = *Never*; 4 = *Almost Continuously*). Items were reversed scored as appropriate such that higher values indicated greater endorsement of the construct. Internal consistency (Cronbach's α) is reported for each scale.

Proactive behavior management was measured using four items reflecting teachers' use of practices to preemptively direct students to appropriate behavior (e.g., "Teacher gives clear instructions and directives to students"; α = .72).

Monitoring was measured using four items reflecting teachers' active awareness of students' behavior in the classroom (e.g., "Teacher scans the room and is aware of what is occurring"; α = .90).

Anticipation and responsiveness was measured using six items reflecting teachers' awareness of students' needs and ability to anticipate challenges before they become an issue (e.g., "Teacher anticipates when students may have problems behaviorally"; α = .85).

Teacher characteristics. Teachers reported their identified ***gender*** (male or female) and ***race*** (White or non-White). Because of our interest in the intersection of gender and race, teachers were grouped into one of four categories: White female, female teacher of color, White male, and male teacher of color. Teachers also reported whether they were an ***early career teacher*** (< 4 years of experience).

Classroom observation and school-level characteristics. Several classroom observation and school-level characteristics were of interest as covariates. During the first three minutes of the ASSIST observation, observers recorded the total number of students in the class and the number of White students in the class, which was used to create the ***proportion of White students*** in the class. This characteristic was included given a prior study in this sample suggesting within-teacher adjustments to practice based on classroom racial composition (Kaihoi et al., under review). Also, as part of the ASSIST observation, observers tallied the number of ***disruptive behavior***s exhibited by students. This count was

considered relevant given some teacher classroom management practices are, by definition, a response to student behavior. Due to a few extreme outliers, disruptive behavior was truncated at 3 or greater standard deviations. School and state records data indicated the total ***enrollment*** for each school. ***FARMS*** was calculated as the proportion of the students in the school who were eligible for free or reduced-price meals.

Analytic Plan

Descriptive statistics and zero-order correlations were run in R to examine bivariate associations among teachers' occupational health, classroom management practices, and teacher characteristics. Subsequent analyses were conducted in Mplus 8.5 (Muthen & Muthen, 2017), with the clustering of teachers within schools accounted for using the Huber-White adjustment (Lin, 2013). Utilizing an LPA approach, the BCH method was employed (Bakk et al., 2014; Bolck et al., 2004) using the manual approach in Mplus described by Asparouhov & Muthen (2021). The first step in this method was to estimate the latent profile measurement model; then, BCH weights from the measurement model were extracted and utilized in a separate distal outcomes analysis to account for classification error. More details regarding each of these steps are provided herein.

Identification of latent profiles. To identify teacher profiles indicated by their experiences of job stress, occupational burnout, and teaching self-efficacy, a sequence of LPAs was run with one to five profiles. In all LPAs, variances in the three indicators were fixed across profiles. Following standard procedure for covariates, teacher-, classroom-, and school-level characteristics were included as auxiliary variables in the models. Because of our interest in the intersection of gender and race, three dummy-coded variables were included in the model: male teacher of color, White male teacher, and female teacher of color, with White female teachers as the reference group (as the largest group consisting of 54% of the sample). The proportion of White students in the class, student disruptive behaviors, enrollment, and FARMS were *z*-scored using the sample mean and standard deviation.

Profile enumeration was conducted using relative measures of fit as well as classification diagnostics, in line with best practices related to mixture modeling (Masyn, 2013). Relative fit was based

on the Vuong-Lo-Mendell-Rubin Likelihood (VLMR) ratio test (Lo et al., 2001; Vuong, 1989), which determines whether an LPA model with *k* classes produces a significantly better likelihood than one with *k* – 1 profiles. In addition, the Bayesian Information Criteria (BIC; Schwarz, 1978), another indicator of relative fit where the lowest BIC indicates the best fitting model, was considered. Finally, classification diagnostics were examined, namely classification probabilities and entropy. Classification probabilities and entropy values range between 0.0 and 1.0, classification probabilities greater than .70 and entropy greater than 0.80 are considered to be adequate, with values closer to 1.0 indicating greater precision (Clark & Muthén, 2009; Nagin & Odgers, 2010).

Between-profile differences in classroom management practices. BCH weights from the best-fitting LPA model were saved and utilized in a second model estimating teachers' classroom management practices as a function of latent profile membership, controlling for covariates. BCH weights, which account for classification error, were declared as training weights to preserve profile membership as modeled in the unconditional measurement model. To model average differences in classroom practice by latent profiles, teachers' classroom management practices were regressed on latent profile membership as well as on covariates, with regression coefficients for covariates free to vary across classes. Differences in intercept coefficients by profile were estimated using the MODEL CONSTRAINT command in Mplus. Intercept differences were considered significant when *p*-values for difference parameters were less than .05; marginal differences ($p < .10$) are also noted in the tables and results.

Tallied outcomes, being over-dispersed count variables, were modeled using a negative binomial distribution, with dispersion parameters fixed across latent profiles. Further, three tallied outcomes (Proactives, Approvals, and Reactives) were zero-inflated and therefore modeled using a zero-hurdle, a parameter which was fixed to be equal across latent profiles. Thus, for tallied outcomes, results are provided in terms of incidence rates (IR; exponentiated intercept coefficients). The intercept can be interpreted as the average tallied score in the profile assuming reference group categories (i.e., White female teachers who were not early career) and average scores on covariates; comparisons between profiles are provided in terms of the incidence rate ratio (IRR). Global outcomes were continuous and

modeled using the normal distribution. For these outcomes, the intercept coefficient estimate for each profile represents the average score assuming the reference groups and average scores on all other covariates.

Between-profile differences in teacher characteristics. Within this model, profile membership was regressed upon covariates, allowing for examination of differences between latent profiles on covariates. Odds ratios for class membership based on covariates were examined and considered significant when 95% confidence intervals did not include 1.00. Odds ratios can be interpreted as the relative odds of profile membership, versus odds of membership in the reference profile, given a one-unit change in the covariate.

Missing data. As mentioned in the Participants section, of the original 606 teachers who were eligible for and consented to participation in the broader study, 60 were missing either demographic information or *all* job stress, occupational burnout, and teaching self-efficacy information. These 60 teachers did not differ significantly on any ASSIST outcomes from the 546 for whom this information was available. Another 30 teachers were missing either *all* ASSIST outcomes or at least one independent variable associated with ASSIST observations (i.e., number of students present, student disruptive behaviors). These 30 teachers did not significantly differ on any self-reported or demographic variable from the 576 teachers who had ASSIST information. Because the manual BCH method utilized in Mplus does not allow for handling missing data in independent variables with FIML, or for missing on *all* dependent variables, these 90 teachers were dropped from the analytic sample. Hence, the final analytic sample comprised 516 teachers.

Among the 516 teachers in the analytic sample, less than 2% were also missing data on one or more LPA indicator variables or ASSIST outcomes (see Table 1). Missing data for these teachers were handled using full information maximum likelihood (FIML), which introduces less bias than deletion techniques to address missing data (Enders, 2001).

Results

Descriptive Statistics

Univariate descriptive statistics and zero-order correlations among analytic variables are presented in Tables 1 and 2, respectively. Participants utilized the full 0 to 5 range of the job stress and occupational burnout scales, with means of 2.51 and 2.66, respectively, and standard deviations for each greater than 1.0. Variability on teaching self-efficacy was slightly constrained, with a minimum score of 0.80, mean of 3.48, and standard deviation of 0.75 (Table 1). Job stress and occupational burnout were strongly and positively correlated with each other (r = .81, p < .05), whereas each of these indicators was negatively and less closely related to teaching self-efficacy (r = -.32 to -.31, p < .05; Table 2).

The tallied ASSIST outcomes of Proactives, Approvals, and Reactives were similar in range, from 0 to 34-41 (M = 4.77-9.47), whereas for Disapprovals the maximum count was 11 (M = 0.49). ASSIST global scale scores for Proactive Behavior Management (M = 2.77) and Anticipation and Responsiveness (M = 2.83) spanned the full possible range of 0 to 4 and had somewhat lower means than Monitoring (M = 3.07), which had a more constricted range with a minimum score of 0.75. Among occupational health indicators, only teaching self-efficacy was significantly correlated to ASSIST outcomes, and specifically with Proactives (r = .09, p = .04), Reactives (r = -.12, p = .01), Proactive Behavior Management (r =.15, p < .001), and Monitoring (r = .13, p < .001).

Male teachers of color reported lower job stress (r = -.20, p < .001) and occupational burnout (r = -.16, < .001) than other gender/race subgroups, female teachers of color reported higher teaching self-efficacy (r = .12, p = .01), and White female teachers reported higher job stress (r = .17, p < .001) and occupational burnout (r = .14, p < .001) and lower teaching self-efficacy (r = -.11, p = .01) than other gender/race subgroups.

Identification of Latent Profiles

Fit statistics for latent profile models with one through five profiles are provided in Table 3. The VLMR likelihood ratio tests indicated that adding one profile incrementally improved model fit through four profiles; increasing number of profiles from four to five did not significantly improve fit ($VLMR_{k=4}$ p = .009; $VLMR_{k=5}$ p = .33). The four-profile solution also demonstrated the lowest BIC, further supporting

the relative fit of this solution. Thus, the four-profile solution was identified as the best fitting model. Regarding classification diagnostics, the four-profile model had an entropy value of 0.78, just slightly below the 0.80 threshold, but it also had an acceptable minimum classification probability of 81.7%.

Information on estimated profile membership and mean levels of job stress, occupational burnout, and teaching self-efficacy in each profile for the selected four-profile model are presented in Table 4. The estimated proportion of teachers represented by each profile ranged from .15-.38. Job stress and occupational burnout were each significantly different between all pairs of profiles ($p < .05$; Figure 1); differences between all pairs of profiles on teaching self-efficacy were significantly different *except* for between Profile 2 ($M = 3.44$, $SE = 0.07$) and Profile 3 ($M = 3.48$, $SE = 0.06$). Job stress and occupational burnout were consistently rank ordered among profiles, from Profile 1 (highest stress and burnout: $M_{stress} = 3.97$, $M_{burnout} = 4.32$) to Profile 4 (lowest stress and burnout: $M_{stress} = 0.91$, $M_{burnout} = 0.88$). Teaching self-efficacy was also approximately rank-ordered, but in the opposing direction, with Profile 1 demonstrating the lowest teaching self-efficacy ($M = 3.09$), Profiles 2 and 3 demonstrating more mid-levels of self-efficacy and Profile 4 demonstrating the highest teaching self-efficacy ($M = 4.08$). The profiles were therefore named: Profile 1 – lowest occupational health (17% of the sample); Profile 2 – low-to-mid occupational health/mid self-efficacy (38%); Profile 3 – mid-to-high occupational health/mid self-efficacy (30%); and Profile 4 – highest occupational health (15%).

Between-Profile Differences in Classroom Management Practices

Model-predicted intercepts in teachers' classroom management practices by latent profile are presented in Table 5, with significant intercept differences indicated in the rightmost column. A bolded estimate indicates that the intercept differed with at least one other intercept in its respective row. Significant differences emerged for both tallied Proactives and global Proactive Behavior Management, results are visualized in Figure 2. Specifically, tallied Proactives were significantly less frequent in teachers in the lowest occupational health profile (Profile 1; IR = 8.17) compared to that of both the low-to-mid occupational health/mid self-efficacy profile (Profile 2; IR = 11.62; IRR = 0.70, $p = .01$) and the highest occupational health profile (Profile 4; IR = 12.92; IRR = 0.63, $p = .01$). Similarly, the average

global Proactive Behavior Management score was lower for teachers in the lowest occupational health profile (Profile 1; $B = 2.76$, $SE = 0.11$) as compared to the highest occupational health profile (Profile 4; $B = 3.08$, $SE = 0.15$; diff = 0.32, $p = .03$). A marginal difference for the same outcome also emerged, with the average global Proactive Behavior Management in the highest occupational health profile (Profile 4) somewhat higher than that of the mid-to-high occupational health/mid self-efficacy profile (Profile 3; $B = 2.73$, $SE = 0.11$; diff = 0.36, $p = .05$). Marginal differences emerged for one other outcome: average Anticipation and Responsiveness scores were marginally higher in the lowest occupational health profile (Profile 1; $B = 3.13$, $SE = 0.12$) than that of the mid-to-high occupational health/mid self-efficacy profile (Profile 3; $B = 2.82$, $SE = 0.14$; diff = 0.31, $p = .07$).

Between-Profile Differences in Teacher Characteristics

Odds ratios for profile membership as a function of each covariate are presented in Table 6. As shown in the third column, relative to white female teachers (the reference group), female teachers of color (OR = 4.32), White male teachers (OR = 4.60), and male teachers of color (OR = 122.23) had greater odds of membership in the highest occupational health profile (Profile 4) versus the lowest occupational health profile (Profile 1). Odds ratios were significant and in the same direction in comparing the low-to-mid occupational health/mid self-efficacy profile (Profile 2) with the highest occupational health profile (Profile 4): odds of being in the highest occupational health profile (Profile 4) were significantly higher for female teachers of color (OR = 2.69) than White male teachers (OR = 5.51) and male teachers of color (OR = 9.80). In comparing the mid-to-high occupational health/mid self-efficacy profile (Profile 3) with the highest occupational health profile (Profile 4), odds of Profile 4 membership were again significantly higher for White males (OR = 7.57) and male teachers of color (OR = 7.18), but not female teachers of color. In summary, and stated inversely, White female teachers had the highest relative odds of membership in the lowest occupational health profile (Profile 1) compared to all three other demographic groups and profiles, except for compared to the mid-to-high occupational health/mid self-efficacy profile (Profile 3) relative to female teachers of color. The estimated relative percentage of each gender/racial group in each profile are visualized in Figure 3. Relative odds of profile

membership between any two profiles did not significantly differ between early career and experienced teachers.

Discussion

The present study empirically derived latent profiles of teachers' occupational health, tested whether profile membership was related to teachers' classroom management practices, and assessed whether teachers' gender, race, and experience in the classroom were associated with profile membership. Results indicated four profiles of teachers ordered from lowest to highest occupational health, with Profiles 2 and 3 demonstrating similar levels of self-efficacy. Teachers in the profile of lowest occupational health were observed less frequently utilizing proactive behavior management practices than teachers in the second lowest and the highest occupational health profiles. In addition, White female teachers had greater odds of being in a profile of low occupational health than White male teachers and both male and female teachers of color.

Profiles of Teachers' Occupational Health

The present study provided support for four distinct profiles of teachers' occupational health indicated by their feelings of job stress, occupational burnout, and teaching self-efficacy. This study adds to the modest and emerging body of research demonstrating that latent subgroups of teachers exist as measured by dimensions of occupational health (Collie et al., 2020; Herman et al., 2018, 2020; Klusmann et al., 2008; Salmela-Aro et al., 2019), yet it is the first to use this specific combination of indicators. The profiles that emerged in this study were relatively straightforward, ordered monotonically from low to high occupational health (i.e., profiles with higher stress also had higher burnout), with the exception of self-efficacy, which did not differ between the low-to-mid and mid-to-high profiles. Self-efficacy had a more restricted range than the measures of stress and burnout, demonstrating that the teachers in this sample differed more widely with regard to feelings of stress and burnout than self-efficacy. The largely ordinal nature of stress, burnout, and self-efficacy found in the present study is in contrast to several studies (Herman et al., 2020; Salmela-Aro et al., 2019), including Herman et al. (2018) who identified three profiles of teachers characterized by high stress which were delineated by low, moderate, or high

coping, suggesting that not all indicators of occupational health move together (also see Pas & Bradshaw, 2014); this means that it is possible for teachers to have favorable experiences in some dimensions but struggle in others. Although the present study focused specifically on teachers' experiences of job stress, burnout, and self-efficacy because of their prominence in the literature (Aloe et al., 2014; Antoniou et al., 2013; Montgomery & Rupp, 2005; Skaalvik & Skaalvik, 2007), additional research could provide a more holistic understanding of latent subgroups of teachers by considering a wider breadth of dimensions of occupational health; of particular interest are dimensions such as felt autonomy, administrative support, collegial trust, and classroom resources, as they are important experiences for teachers and have also been shown to be related to turnover intentions (for review, see Boyd et al., 2011). Such investigations may yield profiles more aligned with Herman et al. (2018).

Teachers Experiencing the Poorest Occupational Health Were Less Proactive

A key tenet of the Prosocial Classroom model is that poor occupational health jeopardizes teachers' ability to effectively manage the classroom (Jennings & Greenberg, 2009) possibly because their time and energy is spent coping rather than on optimizing teaching. Results from the present study provided some support for this conceptual model, with teachers experiencing the poorest occupational health demonstrating fewer instances of observed proactive behavior management strategies – one of the core components of effective classroom management (Collier-Meek et al., 2019) – than teachers in the highest occupational health profile. This pattern was found for both measures of proactive behavior management: the tallied count and global rating. In addition, teachers with the poorest occupational health were observed to exhibit fewer tallied proactives than teachers with low-to-mid occupational health; and teachers with mid-to-high occupational health were rated lower on the global measure of proactive behavior management than teachers with the highest occupational health. In instances where these significant differences emerged, results indicated that teachers with poor*er* occupational health were less proactive than teachers with high*er* occupational health. However, given several of the comparisons were non-significant, the results also suggest some complexity to this conceptual model. For example, no significant differences in proactive behavior management emerged between teachers with the lowest

occupational health and those with mid-to-high occupational health/mid self-efficacy.

Although the Prosocial Classroom model posits that greater occupational health is associated with more effective classroom management practices (Jennings & Greenberg, 2009), the effect of occupational health on teachers' practices is likely be more nuanced. It has been noted that emotional energy is required to lead a classroom effectively, so moderate (vs. very high) levels of occupational health (e.g., perhaps reflective of manageable levels of stress and burnout) may be indicative of teachers' investment in their profession and emotional commitment to their students (Bottiani et al., 2019; Hoglund et al., 2015). Thus, we may expect associations between moderate (vs. very high) levels of occupational health and teachers' use of effective classroom management practices. Indeed, a variable-centered study by Bottiani et al. (2019) found burnout to be positively related to teachers' sensitivity after controlling for stress, and Braun et al. (2019) found job stress to be positively related to emotionally supportive interactions after controlling for burnout. One strength of embracing a person-centered approach is the capacity to assess such nonlinear trends; utilizing LPA, one can test whether profiles of moderately good occupational health, rather than stellar occupational health, are most strongly related to the use of effective classroom management practices. Such effects may be emerging in the results showing no significant differences in proactive behavior management between teachers who experience low-to-mid occupational health and those experiencing the highest occupational health. These findings may suggest that *low-to-mid* occupational health as characterized in the present study is not associated with teachers' use of fewer proactive behavior management strategies, whereas experiencing *poor* occupational health is associated with less frequent use of these effective practices. Although not assessing classroom management, initial evidence from Collie et al. (2020) utilizing a person-centered framework is also consistent with this idea, finding that the profile of teachers who reported a low/moderate amount of work demands (vs. the profile reporting minimal demands) experienced the highest job satisfaction and commitment, implying that some challenge is not necessarily problematic, as long as it is manageable. Future research should continue to employ LPA to investigate such nuances.

Contrary to our hypotheses, teachers experiencing the *lowest* occupational health were observed

to exhibit greater anticipation and responsiveness than teachers in the mid-to-high occupational health profile. We are hesitant to put too much emphasis in this finding, as only one of six comparisons emerged as significant. However, this result may be reflective of the nuances noted above; alternatively, cognitive and physiological research has found higher stress to be associated with increased alertness and attention, a phenomenon which may also be at play for teachers in the classroom (Qi et al., 2018; Qi & Gao, 2020).

The present study also explored occupational health in relation to both effective practices (e.g., proactive behavior management) and undesirable practices (e.g., reactive behavior management), finding only consistent effects with proactive behavior management. In contrast, Herman et al. (2020) focused only on the undesirable practice of harsh reprimands and found that teachers with poorer occupational health were observed to use high levels of harsh reprimands. Several design characteristics differed between Herman et al. (2020) and the current study, which may explain why findings were not more consistent across studies, including: the use of different indicators of occupational health, the larger sample which was more equally distributed between profiles in this study, and the inclusion of more covariates in the present study than in Herman et al. (2020). Although additional research into the manifestation of occupational health is necessary to understand how it is related to classroom management, together, these studies suggest that poor occupational health not only jeopardizes teachers' use of effective practices but is also associated with greater use of undesirable practices. These findings call attention to several potential points of intervention, which are described further in the Implications section.

White Male Teachers and Teachers of Color Associated with Profiles of Higher Occupational Health

Contrary to hypotheses based on patterns in teachers' attrition, findings suggested that White women were at greater odds for poor occupational health than White men and teachers of color. As the majority of non-White teachers in this sample identified as Black, we focus our discussion here on Black educators, who research has shown face unique challenges in their role as educators (e.g., Bryan &

Williams, 2017). Despite these previously noted challenges, teachers of color and men in this study were much more likely to experience high occupational health than White women. Future research could investigate personal assets or resources that protect teachers of color and men from the negative effects of the additional demands they face (e.g., Bristol, 2018). Alternatively, research has shown that Black teachers are more likely than White teachers to cite dissatisfaction with classroom materials, lack of autonomy, and collegial support as issues (Carver-Thomas & Darling-Hammond, 2017; Farinde et al., 2016). These dimensions of occupational health were not included in the present study (van Horn et al., 2004). Thus, it is possible that profiles created based on indicators of occupational health known to be salient to Black teachers (e.g., satisfaction with classroom materials, collegial support) may demonstrate results in the hypothesized direction.

Despite findings being incongruent with trends in attrition, results are consistent with research demonstrating that women and White teachers report higher levels of stress and burnout than men and teachers of color (Bottiani et al., 2019; Fitchett et al., 2020; Klassen & Chiu, 2010; O'Brennan et al., 2017), with gender effects attributed to the additional roles and responsibilities assumed by women (Nazroo et al., 1998) in conjunction with gender-socialized methods of coping with distress (Dedovic et al., 2009). Together, this research suggests that White female teachers may be at risk for poor occupational health. As such, interventions to support occupational health (e.g., mindfulness-based interventions; Roeser et al., 2021) may be particularly helpful for this group. Also notable is that most education research has been conducted with primarily White and female samples; studies that intentionally focus on male teachers and teachers of color will provide a much needed understanding of the experiences of these teachers (e.g., Bristol, 2020).

A robust body of literature indicates that the first several years in the classroom are particularly challenging for teachers (Buchanan et al., 2013; Clandinin et al., 2015; Dicke et al., 2015; Gallant & Riley, 2014; Rieg et al., 2007). However, results demonstrated no differences in profile membership by experience teaching. Noteworthy here are the associations among gender, race, and early career status in this sample. Once accounting for gender and race, the effect of being a new teacher was not significant;

race and gender are stronger predictors of occupational health than career status. Additional research into the resilience of such groups would help to elucidate these findings.

Conclusions and Future Research Directions

The present study expanded the current knowledge of teachers' occupational health in several distinct directions: 1) employing LPA to identify profiles of teachers indicated by three dimensions of occupational health, 2) examining the association between profile membership and observations of classroom management, and 3) exploring whether teacher characteristics were associated with profiles of occupational health. This study provides a platform for future research to delve deeper into each of these three fronts. First, future research could consider additional measures of teachers' experience in the workplace to create profiles that are more representative of the varying dimensions of occupational health, specifically measures of high occupational health, as absence of burnout and stress may not necessarily indicate flourishing (Kazdin, 1993; Seligman, 2010). Second, this study investigated the associations between profile membership and observations of classroom management, one association posited in Prosocial Classroom Model's guiding conceptual framework (Jennings & Greenberg, 2009). Future research should continue to test this model by examining the association between teachers' occupational health and teacher-student relationships and effective implementation of SEL programs, as well as other assessments of teachers' classroom management practices, such as student reports (Lüdtke et al., 2009). Teachers' occupational health and observations of their classroom management were collected at a similar timepoint in this study, meaning causal conclusions cannot be drawn from these data. Longitudinal and intervention research would help to determine causal associations.

With regard to who is at risk for poor occupational health, our results identified gender and racial differences in profiles of occupational health. Although the association between profile membership and male teachers of color was consistent and robust across analyses, we interpret these findings (i.e., the effect sizes, reported here as odds ratios) with caution, as there were relatively few male teachers of color in this sample. On this topic, it would be helpful for future research to explicitly assess whether measures of occupational health are invariant across race and gender (van de Schoot et al., 2012).

Implications

The present study identified four latent profiles of teachers' occupational health and demonstrated that profiles of poor occupational health were associated with fewer proactive classroom management practices. This study adds to the body of literature providing empirical support for the Prosocial Classroom model, demonstrating that occupational health is associated with teachers' classroom management practices (Clunies-Ross et al., 2008; Hoglund et al., 2015; Oberle & Schonert-Reichl, 2016). These findings call attention to several potential points of intervention: 1) changing the educational systems that create such undesirable work environments for teachers (e.g., less pressure on standardized test scores; von der Embse et al., 2017); 2) altering organizational or school-level processes (e.g., offering more job resources, such as continuous feedback and personnel support; Knight et al., 2017); and 3) providing additional pre-service preparation and in-service supports to teach educators focused on how to effectively manage the stressors of the profession (e.g., teacher-focused interventions such as mindfulness-based interventions; Iancu et al., 2018; Roeser et al., 2021). For example, with regard to teacher-focused interventions, the Mindfulness-Based Emotional Balance program (Roeser et al., 2013, 2021) and mindfulness-based Cultivating Awareness and Resilience in Education program (Jennings et al., 2019) have both demonstrated positive effects on teachers' occupational health. Results from the present study suggest that the positive effects these and other such interventions may have on teachers' occupational health could also have downstream effects on teachers' classroom management practices. Future trials that investigate such distal effects, should also explore the potential mediating role of teachers' occupational health for such hypothesized effects. Further, findings regarding White female teachers being at greater odds of poor occupational health than male teachers and teachers of color have implications for such intervention programs, both with regard to targeting interventions and in understanding for whom these programs may be most beneficial.

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Table 1

Descriptive Statistics among Analytic Sample (N = 516)

	% Missing	*M*/%	*SD*	Min	Max	ICC (School)
Occupational Health (LPA Indicators)						
Job Stress	1.9%	2.51	1.05	0.00	5.00	0.04
Occupational Burnout	0.0%	2.66	1.23	0.00	5.00	0.01
Teaching Self-Efficacy	1.2%	3.48	0.75	0.80	5.00	0.00
Classroom Management Practices						
ASSIST Tallies						
Proactives	0.0%	9.47	6.30	0	36	0.18
Approvals	0.0%	4.77	5.87	0	41	0.18
Disapprovals	0.0%	0.49	1.13	0	11	0.16
Reactives	0.0%	7.72	6.20	0	34	0.10
ASSIST Globals						
Anticipation and Responsiveness	0.6%	2.83	0.82	0.00	4.00	0.37
Monitoring	0.2%	3.07	0.76	0.75	4.00	0.32
Proactive Behavior Management	0.4%	2.77	0.76	0.00	4.00	0.22
Covariates						
Teacher Characteristics						
Gender and Race						
Female White	0.0%	54%	-	0	1	0.30
Female Teacher of Color	0.0%	27%	-	0	1	0.21
Male White	0.0%	12%	-	0	1	0.03
Male Teacher of Color	0.0%	7%	-	0	1	0.11
Early Career	0.0%	31%	-	0	1	0.08
Classroom Observation Characteristics						
Proportion of White Students	0.0%	0.29	0.26	0	1	0.74
Student Disruptive Behaviors	0.0%	13.12	11.73	0	46	0.17
School Characteristics						
Enrollment	0.0%	662	298	188	1509	-
FARMS	0.0%	57.00	21.92	11.60	93.60	-

Note. *M* = Mean; *SD* = Standard deviation.; FARMS = Free or Reduced-Price Meals. ICC = intraclass correlation.

Table 2

Correlations among Occupational Health, Classroom Management Practices, and Covariates

		Occupational Health			Classroom Management Practices						Covariates						
					ASSIST Tallies			ASSIST Globals									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Occupational Health (LPA Indicators)																		
1	Job Stress	-																
2	Occupational Burnout	**0.81**	-															
3	Teaching Self-Efficacy	**-0.32**	**-0.31**	-														
Classroom Management Practices																		
ASSIST Tallies																		
4	Proactives	0.01	-0.03	**0.09**	-													
5	Approvals	0.05	0.01	0.07	**0.12**	-												
6	Disapprovals	0.04	0.05	-0.08	-0.03	-0.06	-											
7	Reactives	0.07	0.08	**-0.12**	**0.12**	0.02	**0.25**	-										
ASSIST Globals																		
8	Proactive Behavior Management	0.01	-0.02	**0.15**	0.05	**0.39**	**-0.10**	**-0.13**	-									
9	Monitoring	0.05	0.04	**0.13**	-0.01	**0.20**	**-0.15**	**-0.15**	**0.64**	-								
10	Anticipation and Responsiveness	0.03	0.03	0.05	0.02	**0.20**	**-0.09**	-0.07	**0.72**	**0.69**	-							
Covariates																		
Teacher Characteristics																		
11	White Female Teacher	**0.17**	**0.14**	**-0.11**	0.04	**0.17**	-0.06	**0.11**	**0.13**	0.03	**0.10**	-						
12	Female Teacher of Color	-0.06	-0.07	**0.12**	0.02	**-0.11**	0.00	**-0.11**	0.00	0.03	-0.02	**-0.66**	-					
13	White Male Teacher	-0.02	0.00	-0.03	-0.06	-0.03	0.02	-0.05	-0.09	-0.03	-0.06	**-0.41**	**-0.23**	-				
14	Male Teacher of Color	**-0.20**	**-0.16**	0.04	-0.03	**-0.10**	**0.09**	0.03	**-0.13**	-0.06	-0.07	**-0.29**	**-0.16**	**-0.10**	-			
15	Early Career	-0.01	-0.07	-0.09	-0.03	-0.02	**0.12**	0.06	**-0.11**	-0.02	0.00	-0.06	-0.04	0.05	**0.12**	-		
Classroom Observation Characteristics																		
16	Percent White	-0.01	-0.04	-0.04	-0.01	**0.13**	**-0.13**	0.00	**0.09**	-0.04	0.00	**0.39**	**-0.33**	0.00	**-0.18**	**-0.10**	-	
17	Student Disruptives	**0.11**	**0.12**	**-0.18**	-0.04	**-0.19**	**0.12**	**0.45**	**-0.46**	**-0.35**	**-0.32**	-0.07	-0.04	0.07	**0.12**	0.03	**-0.10**	-

Note. **Bold** indicates $p < .05$.

Table 3

Fit Statistics for Latent Profile Solutions with k Profiles

Profiles	VLMR *p*-value	BIC	Entropy	Minimum Classification Probability
1	NA	4354.65	NA	NA
2	0.001	4021.36	0.74	91.60%
3	0.005	3859.04	0.80	89.40%
4	**0.009**	**3812.61**	**0.78**	**81.70%**
5	0.332	3814.92	0.77	76.30%

Note. Model selection using job stress, occupational burnout, and teaching self-efficacy as indicators for latent profile membership. BIC = Bayesian Information Criteria; *p*-value provided for Vuong-Lo-Mendell_Rubin Likelihood Ratio Test (Vuong, 1989; Lo, Mendall, & Rubin, 2001); smallest class percentages based on posterior probabilities. **Bold** indicates the 4-class model was selected as the best-fitting solution.

Table 4

Descriptive Statistics for Occupational Health Indicators among Profiles in Four-Profile Solution

Profile Name	Profile Membership		Occupational Health Indicators					
			Job Stress		Occupational Burnout		Teaching Self-Efficacy	
	Count	Prop-ortion	Mean	(*SE*)	Mean	(*SE*)	Mean	(*SE*)
Profile 1: Lowest OH	90.3	0.17	3.97	(0.13)	4.32	(0.10)	3.09	(0.11)
Profile 2: Low-to-Mid OH/ Mid Self-Efficacy	197.5	0.38	2.84	(0.11)	3.14	(0.13)	3.44	(0.07)
Profile 3: Mid-to-High OH/ Mid Self-Efficacy	153.4	0.30	1.97	(0.09)	1.94	(0.14)	3.48	(0.06)
Profile 4: Highest OH	74.9	0.15	0.91	(0.09)	0.88	(0.10)	4.08	(0.06)

Note. *SE* = Standard error. *OH* = Occupational health. Profile membership counts and proportions based on posterior probabilities. All differences between profiles in job stress, occupational burnout, and teaching self-efficacy were significant, $p < .05$, except for the difference between Profiles 2 and 3 in teaching self-efficacy.

Table 5

Teachers' Classroom Management Practices: Intercepts and Differences across Latent Profiles

	Profile 1: Lowest OH		Profile 2: Low-to-Mid OH/ Mid Self-Efficacy		Profile 3: Mid-to-High OH/ Mid Self-Efficacy		Profile 4: Highest OH		Significant Intercept Differences
ASSIST Tallies	*B* (*SE*)	IR	B (*SE*)	IR	*B* (*SE*)	IR	*B* (*SE*)	IR	
Proactives	**2.10 (0.11)**	**8.17**	**2.45 (0.10)**	**11.62**	2.19 (0.14)	8.97	**2.56 (0.15)**	**12.92**	Profile 1 < Profile 2 ($p < .01$) Profile 1 < Profile 4 ($p < .05$)
Approvals	1.62 (0.22)	5.07	1.86 (0.15)	6.39	1.61 (0.22)	4.98	1.75 (0.31)	5.77	
Reactives	2.04 (0.09)	7.69	2.15 (0.09)	8.54	2.15 (0.10)	8.59	1.93 (0.22)	6.88	
Disapprovals	-1.20 (0.32)	0.30	-0.72 (0.26)	0.49	-1.02 (0.35)	0.36	-0.53 (0.45)	0.59	
ASSIST Globals	*B* (*SE*)		*B* (*SE*)		*B* (*SE*)		*B* (*SE*)		
Proactive Behavior Management	**2.76 (0.11)**		2.96 (0.09)		**2.73 (0.11)**		**3.08 (0.15)**		Profile 1 < Profile 4 (p < .05) Profile 3 < Profile 4 (p = .05)
Monitoring	3.12 (0.13)		3.19 (0.09)		2.98 (0.12)		3.21 (0.19)		
Anticipation & Responsiveness	**3.13 (0.12)**		2.94 (0.11)		**2.82 (0.14)**		3.08 (0.18)		Profile 3 < Profile 1 ($p = .07$)

Note: OH = Occupational health; **Bold** indicates an intercept is significantly or marginally different from at least one other intercept in its row. IR = incidence rate.

Table 6

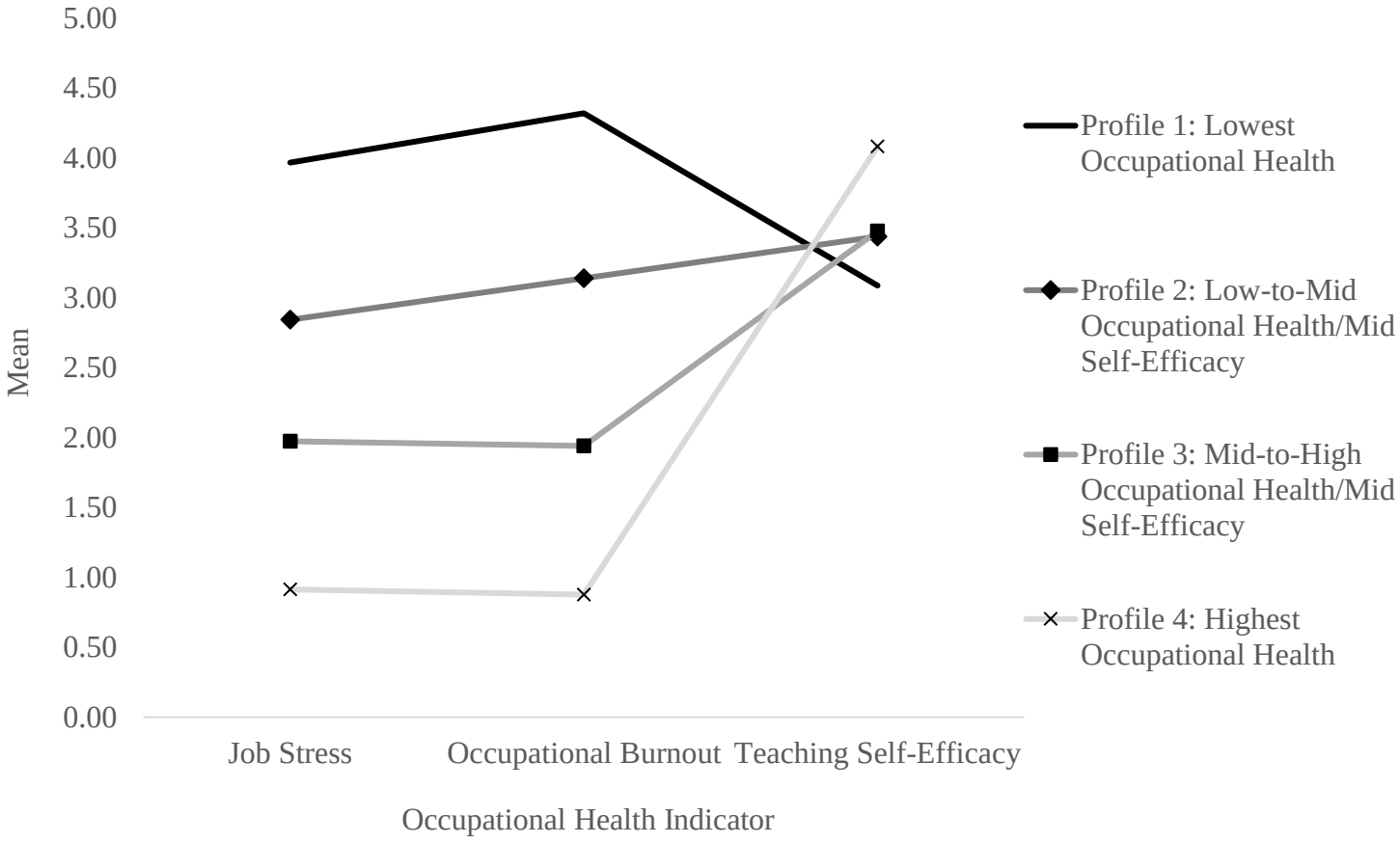
Odds Ratios of Profile Membership as a Function of Covariates

	Profile 1: Lowest OH As Reference			Profile 2: Low-to-Mid OH/ Mid Self-Efficacy As Reference		Profile 3: Mid-to-High OH/ Mid Self-Efficacy As Reference
	Profile 2	Profile 3	Profile 4	Profile 3	Profile 4	Profile 4
Teacher Characteristics						
Female Teachers of Color	1.60	1.85	**4.32**	1.15	**2.69**	2.33
White Male Teachers	0.84	0.61	**4.60**	0.73	**5.51**	**7.57**
Male Teachers of Color	12.47	17.04	**122.23**	1.37	**9.80**	**7.18**
Early Career	0.73	0.90	1.00	1.24	1.37	1.11
Classroom Observation Characteristics						
Percent Students White	1.16	1.34	1.30	1.16	1.13	0.97
Student Disruptives	0.69	**0.64**	**0.53**	0.93	0.77	0.83
School Characteristics						
School Enrollment	1.30	1.26	1.06	0.97	0.81	0.84
School FARMS Percent	1.32	1.25	0.94	0.95	0.72	0.76

Note. Odds ratios are reported. Teacher characteristic covariates are all binary, such that odds ratios represent odds of profile membership (compared to reference profile) for teacher group relative to the reference category (White Female teachers; experienced teachers). Continuous covariates (Proportion White Students, Disruptives, School Enrollment, and School FARMS percent) were standardized, such that odds ratios represent the change in relative odds of profile membership (compared to reference profile) with a + 1 standard deviation increase in the covariate. FARMS = free and reduced-priced meals. **Bold** indicates significance based on 95% confidence intervals.

Figure 1

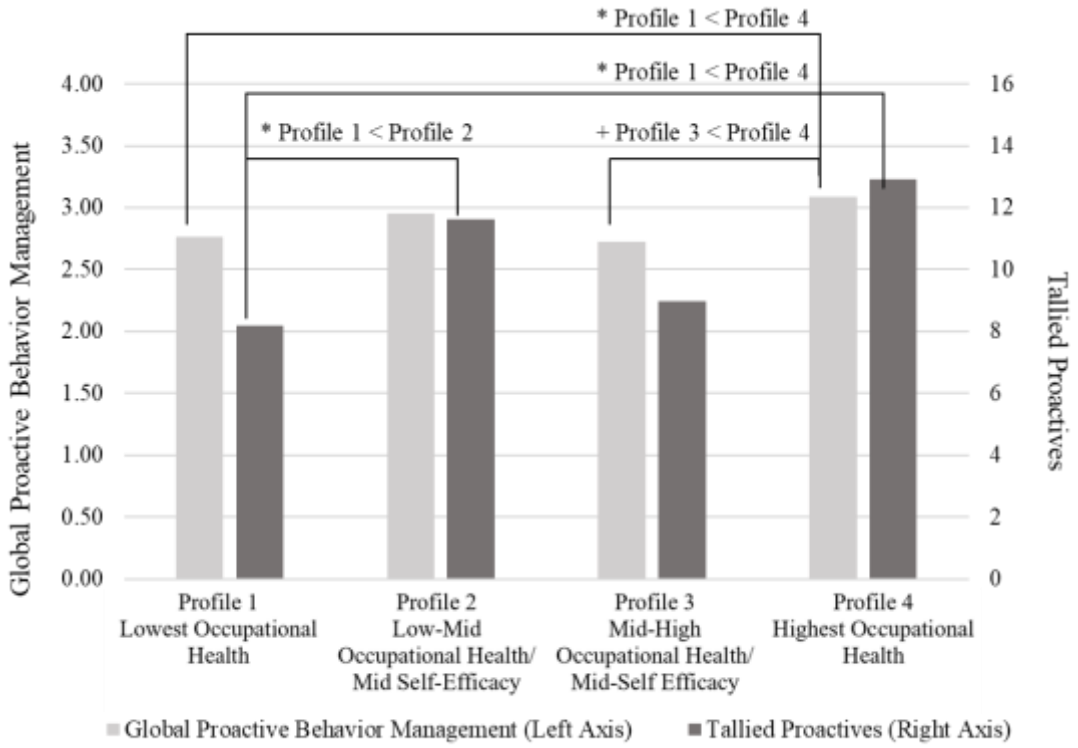
Profile Means for Occupational Health Indicators for the Latent Profile Solution



Note. Means for each of indicators of profiles derived through latent profile analysis. All between-profile differences in means for each indicator were significant ($p < .05$) *except* for teaching self-efficacy between Profile 2 and Profile 3.

Figure 2

Differences in ASSIST Global and Tallied Proactive Behavior Management Practices by Profile Membership



Note. The scale for global ratings of Proactive Behavior Management is presented on the left axis, ranging from 0-4; the scale for tallied Proactives is presented on the right axis, observations of tallies for individual teachers ranged from 0-36. * $p < .05$; + $p < .10$.

Figure 3

Estimated Relative Percentage of Each Gender/Racial Group in Each Profile