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## Influence of Classroom and School Climate on Teacher Perceptions of Student Problem Behavior

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### Abstract

Reducing student problem behavior remains a leading concern for school staff, as disruptive and aggressive behavior interferes with student achievement and the school climate. However, the multi-systemic nature of schools makes it difficult for researchers and practitioners to identify factors influencing to students’ behavior. The current study examined student problem behavior through an ecological lens by taking into account individual (e.g., gender, ethnicity, prosocial behavior), classroom (e.g., class size, average classroom behavior), and school-level factors (e.g., location, school climate). Using data from 37 elementary schools, 467 classrooms, and 8,750 students, a series of hierarchical linear models was tested. Multilevel analyses revealed that while individual student characteristics had the largest influence on problem behavior, average prosocial behavior and concentration problems of students within the classroom, as well as teacher perceptions of the school climate significantly related to how students behaved. These findings support the use of classroom-based intervention programs to reduce student problem behavior.

### Keywords

teacher reports; student problem behavior; classroom behavior; school climate

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Children’s social, cognitive, and behavioral development is influenced through both school- and classroom-level factors (Epstein, Atkins, Cullinan, Kutash, & Weaver, 2008; Jimerson & Furlong, 2006; Rumberger & Palardy, 2004). Classrooms and schools characterized as “disorderly” have been linked to poor student academic and behavioral outcomes, as well as a reduction in teachers’ abilities to efficiently manage the classroom environment and student behavior (Barnes, Belsky, Broomfield, Melhuish, & NESS, 2006; Bradshaw, Sawyer, & O’Brennan, 2009; Mitchell & Bradshaw, 2013; Mitchell, Bradshaw, & Leaf, 2010). Given that school mental health researchers and practitioners have the capacity to influence systemic changes in the classroom and schoolwide (Osher, Bear, Sprague, & Doyle, 2010), school contextual variables (e.g., classroom management, student-teacher

relations, school climate) are of importance when developing interventions aimed at reducing disruptive behavior among school-aged youth and enhancing teacher engagement. However, there has been limited multilevel research exploring various factors potentially influencing teacher reports of student behavior. There are a multitude of interpersonal relationships and environmental systems that interact and transact with each other over time shaping teachers perceptions of students and their school (Sameroff, 1975; Stacks, 2005), thus educational research should reflect the nested nature of schools. The current study applied an ecological perspective to explore the extent to which teachers' perceptions of school and classroom factors are associated with their perceptions of student problem behavior. This work has important implications for school-based mental health practitioners working to improve the climate and management of classrooms, which in turn have considerable influence over students' behavioral and mental health functioning (Weist, Lever, Bradshaw, & Owens, 2014).

## **Teacher Perceptions of Students, Classrooms, and the School**

### **Teacher Perceptions of Student Behavior**

Teachers serve as a valuable resource for gathering information about students' problem behavior and associated classroom and school contextual factors given the relationships they form with students, administration, and other staff members. Teacher reports of youth behavior are frequently utilized in mental health assessment and special education testing (Meyer et al., 2001), as well as school-based policy and programmatic research (Bradshaw, Waasdorp, & Leaf, 2012). Given the behavioral expectations in the classroom (e.g., sustained attention on task, cooperative group work), teacher reports are often used for identifying children who are in need of academic support and/or mental health services (Dwyer, Nicholson, & Battistutta, 2006). The current study focuses on teacher reports of students' problem behavior, such as fighting, yelling, and hitting, as these behaviors are often reported by teachers to be disruptive to instructional learning time and consequentially tend to be the focus of office discipline referrals and requests for student support (Pas, Bradshaw, & Mitchell, 2011; Bradshaw, Buckley, & Ialongo, 2008).

While problem behavior is often the target of office discipline referrals, prosocial behavior, concentration problems, and academic functioning are equally important information to gather from teachers as a means of developing prevention and intervention programs. A growing body of research is focusing on increasing students' prosocial behavior as a means of reducing at-risk behavior and academic performance (Benard, 2004; Gilman, Huebner, & Furlong, 2009). Not surprisingly, students who display more prosocial behavior tend to be rated as more popular and well-liked by their classmates and teachers (Caprara, Barbaranelli, Pastorelli, Bandura, & Zimbardo, 2000; LaFontana & Cillessen, 2002). These positive relationships in school have been linked with a reduction in disruptive behavior and increased academic engagement in the classroom setting (Spinard & Eisenberg, 2009; Wentzel, 1993). Similarly, research shows a child's ability to concentrate, stay on task, and successfully complete assignments predict academic competence, as well as classroom behavior (Barkley, 2003; Thomas, Bierman, Thompson, Powers, & Conduct Problems Prevention Group, 2008). However, few studies have examined teacher reports of student

behavioral and academic functioning while taking into account their global perceptions of the classroom and school.

Much of the extant research on teacher reports of youth problem behavior has focused on individual student demographics, such as gender and ethnicity, as risk factors for subsequent antisocial behavior (Kellam, Ling, Merisca, Brown, & Ialongo, 1998; Thomas et al., 2008). While research has consistently shown that teachers rate males (Craig & Pepler, 2003; Kellam et al., 1998) and minority youth (Thomas, Bierman, & Conduct Problems Prevention Research Group, 2006; Thomas et al., 2008) as behaving more aggressively in the classroom, research on teacher characteristics relating to student outcome data is mixed (Palardy & Rumberger, 2008; Saft & Pianta, 2001; Wayne & Youngs, 2003). Research by Saft and Pianta (2001) revealed that teachers tend to rate their relationships with students more positively if there was a match between their ethnic background and the students'. Given that majority of teachers are White females, this research would suggest a tendency for Black male students to be rated less favorably than their White female counterparts. However, a study by Bradshaw, Mitchell, O'Brennan, and Leaf (2010) found that Black teachers were more likely to make an office discipline referral (ODRs) for fighting, defiance, and bullying as compared to White teachers, even after accounting for student (i.e., gender, ethnicity) and classroom demographics. Consequently, multilevel research is needed to understand how both student and teacher demographics influence the teacher perceptions of student problem behavior in conjunction with other student, classroom, and school variables.

### **Teacher Perceptions of Classroom Climate**

Based on social learning theory (Bandura, 1977), the social climate of the classroom can significantly impact the development of student behavior as well as how teachers interact with students. The classroom climate is a compilation of factors including social interactions between students and teachers, behavioral and academic expectations, as well as the physical environment of the classroom (Freiberg, 1999; Mainhard, Brekelmans, Brok, & Wubbels, 2011). Students' academic focus can be stifled if placed in classrooms composed primarily of students displaying high levels of aggression and low academic proficiency (Barth, Dunlap, Dane, Lochman, & Wells, 2004). Youth's acceptance of problem behavior tends to vary depending on the class-wide behavior, such that students behaving aggressively tend to be rated by their peers more favorably when enrolled in classrooms where aggressive behavior is the norm (Stormshak et al., 1999). Conversely, when prosocial behavior is accepted classwide, youth tend to rise to the occasion; however, the climate of the classroom is not solely created from student behavior, as teachers also play a critical role fostering a positive classroom climate. A recent study by Shim, Kiefer, & Wang (2013) revealed teachers' encouragement of cooperative learning and skill mastery was directly related to students' help seeking behavior and positive interactions with peers. Student behavior evolves within the context of their educational environment, thus it is important for research to take into account teachers' perceptions of student behavior class-wide in addition to individual student functioning.

Beyond class-wide behavior, teachers' use of behavior management strategies can also influence how educators perceive students' behavioral and academic functioning. Classroom teachers who establish clear expectations for students and incorporate the use of rewards, such as praise, recognition, or special privileges are linked with increased appropriate student behavior (Epstein et al., 2008; Koth, Bradshaw, & Leaf, 2008; Sugai & Horner, 2006). A recent study by Reinke, Herman, and Stormont (2013) found that in addition to having rules and expectations clearly visible in the classroom, teachers' use of general praise positively related to their self-efficacy with classroom management. Conversely, the use of harsh reprimands was related to educator's emotional exhaustion. The use of consistent behavior management strategies also tends to reduce the racial disproportionality of office discipline referrals. Tobin and Vincent (2011) examined 46 schools across the country and found that teachers' use of consistent positive reinforcement and efficiently managed transitions between instructional activities significantly reduced the discrepancy between office discipline referrals among White and Black youth. Taken together, it appears teachers' perceptions of individual and class-wide problem behavior can be influenced by the behavior management systems they have in place. Yet, the relative influence of these strategies on teacher reports of student behavior in conjunction with their perceptions of classroom and school climate factors has yet to be systematically explored.

### **Teacher Perceptions of School Climate**

School climate is a product of social interactions among students and teachers, is influenced by educational and social values, and has been shown to relate to social situations in classrooms and within the school as a whole (CDC, 2009; Thapa, Cohen, Guffey, & Higgins- D'Alessandro, 2013). It has been linked with academic achievement and performance (Battistich, Solomon, Kim, Watson, & Schaps, 1995), as well as student misconduct, aggression, and behavioral problems (Battistich & Hom, 1997; Loukas & Robinson, 2004; Wilson, 2004). While the majority of the school climate research focuses on students' perceptions, a number of studies have highlighted the importance of positive staff perceptions of the school environment (e.g., the schools' organizational health) for high work productivity, staff efficacy, and focus on student success (Bevans, Bradshaw, Miech, & Leaf, 2007; Hoy & Woolfolk, 1993; Pas, Bradshaw, Hershfeldt, & Leaf, 2010). In contrast, when teachers experience high levels of burnout or feel emotionally exhausted, their relationships with students and the quality of their teaching suffer (Maslach & Jackson, 1981). Furthermore, teachers with low teacher efficacy, or negative beliefs about their ability to educate students, demonstrate less effective teaching practices, which result in poorer student achievement and increased likelihood for disruptive behavior (Reinke et al., 2013; Skaalvik & Skaalvik, 2007). Research has shown that when teachers and staff feel supported by their administration, they report higher levels of commitment and more collegiality, and there is increased staff retention (Brown & Medway, 2007). Taken together, teachers' overall perception of school climate will likely impact their teaching practices, which presumably influences how they view students' behavior.

### **Overview of Current Study**

The present study examined the association between elementary school teacher perceptions of classroom and school factors with their reports of students' problem behavior. Using 3-

level hierarchical linear modeling (HLM) techniques, we examined the relation between teacher reports of problem behavior and classroom behavior patterns (i.e., prosocial behavior, concentration problems, and academic proficiency), teachers' reported use of classroom behavior management strategies, and perceptions of school climate. Student and teacher demographics as well as structural characteristics inherent at the individual-, classroom-, and school-level were also taken into account. We hypothesized that while individual student differences (e.g., gender, race) would account for much of the variation in teacher reports of problem behavior, average classroom behavior, behavior management strategies, and perceptions of school climate would further explain this relation. In addition, it was predicted that classrooms with higher rates of prosocial behavior and academic proficiency, and fewer concentration problems would have significantly lower problem behavior ratings. Likewise, teachers who reported using behavior management strategies would also report fewer problem behaviors. Lastly, we hypothesized that teachers who perceived their school to be a positive and supportive work environment would report fewer problem behaviors among their students. This study is intended to inform our understanding of the extent to which classroom and school climate influence variation in teachers' perceptions of student behavior problems. Having a better understanding of these factors will highlight what areas mental health clinicians and researchers should integrate into professional development and classroom-based prevention programming.

## Method

### Participants

Data come from a longitudinal study of schoolwide prevention models. A total of 8,750 students (Grades 1–5) nested in 467 classrooms from 37 elementary schools across five Maryland school districts participated in the study. Self-contained special education classrooms were excluded from the analyses since the behavioral and emotional needs of these students are likely different from their general education peers. However, students who had an Individualized Education Program (IEP) but were enrolled in a general education classroom were included in the analyses. The student sample was roughly split on gender (52% male, 48% female) and equally dispersed across grade levels. The two largest racial-ethnic groups within the current study's student sample were White (48%) and Black (44%), with the remaining 8% students being classified as "other." Majority of teachers participating in the study were White (89%) and Female (92%). Approximately 43% of teachers had worked at their present school for 1–5 years, 17% worked there for 6–10 years, and 40% worked there for over 10 years. Classrooms ranged in size from 8 to 31 students, with average student enrollment of 20. The schools ranged in size from 223 to 791 ( $M = 472$ ,  $SD = 135$ ), with 48% located in suburban communities, 41% in urban fringe communities, and 11% in rural communities. See Table 1 for sample demographics.

### Measures

**Teacher perceptions of student behavior**—Student behavior was measured through the *Teacher Observation of Classroom Adaptation–Checklist* (TOCA-C; Leaf, Schultz, Keys, & Ialongo, 2002; also see Koth, Bradshaw, & Leaf, 2009), a 25-item teacher completed checklist that yields three subscale scores: Problem Behavior, Concentration

Problems, and Prosocial Behavior. *Problem Behavior* subscale scores were the primary outcome measure for this study ( $M = 1.90$ ;  $SD = 0.83$ ). This subscale is composed of nine items (e.g., “Breaks rules,” “Harms others,” “Teases classmates”; Cronbach’s Alpha ( $\alpha$ ) = .92). *Prosocial Behavior* was measured through four items on the TOCA-C (e.g., “Is liked by classmates,” “Is friendly”;  $\alpha = .88$ ). Items were scored such that higher scores reflect more prosocial behavior ( $M = 4.80$ ,  $SD = 1.00$ ). *Concentration Problems* subscale consists of seven items (e.g., “Stays on task,” “Pays attention”). All items except for one (“Is easily distracted”;  $\alpha = .96$ ) were reversed scored so that higher scores reflect more concentration problems ( $M = 2.64$ ,  $SD = 1.10$ ). *Academic proficiency* was obtained from one item on the TOCA-C form completed by the classroom teacher. Teachers were asked, “Compared to other students in this grade in this school, is this child’s academic performance...” with response options of *excellent*, *very good*, *good*, *fair*, and *poor*. Scores ranged from 1 to 5, with higher scores reflecting poorer academic performance ( $M = 3.24$ ,  $SD = 1.23$ ). For additional details on the TOCA-C factor structure and psychometric properties see Koth et al. (2009).

**Average classroom and school behavior**—To assess teachers’ perceptions of classroom and school-wide student behavior patterns, TOCA-C Prosocial Behavior and Concentration Problems subscale averages were calculated. A class average on the Problem Behavior subscale was not used because individual student scores on the scale were used as the main dependent variable, and thus this classroom-level variable would have been highly predictive of the outcome. Rather, classroom averages were calculated by the summation student Prosocial Behavior ( $M = 4.75$ ,  $SD = 0.57$ ) and Concentration Problem ( $M = 2.66$ ,  $SD = 0.52$ ) scores and dividing the total by the class enrollment. Similarly, schoolwide averages were created by the summation of student scores on Prosocial Behavior ( $M = 4.75$ ,  $SD = 0.24$ ) and Concentration Problems ( $M = 2.66$ ,  $SD = 0.23$ ) and dividing by school enrollment.

**Classroom behavior management**—The Effective Behavior Support Survey (EBS; Sugai, Todd, & Horner, 2000) was used as a measure of classroom management systems. This 11-item teacher-report assesses the overall usage of positive behavioral strategies in the classroom setting (e.g., Expected student behavior and routines in classrooms are stated positively and defined clearly; Problem behaviors receive consistent consequences; Expected student behavior and routines in classrooms are taught directly). Teachers rate each item on a 3-point scale (*in place*, *partially in place*, or *not in place*) with higher scores indicating more classroom strategies are successfully in place ( $M = 1.78$ ,  $SD = 0.23$ ). The scale demonstrated adequate internal consistency ( $\alpha = .83$ ) and has been used in previous studies as an indicator of classroom management (Mitchell & Bradshaw, 2013).

**Perceptions of school climate**—Teachers’ perceptions of school climate were assessed through the Organizational Health Inventory–Elementary School Version (OHI; Hoy & Woolfolk, 1993), which consists of 37 items measured on a 4-point scale (1 = *rarely occurs* to 4 = *very frequently occurs*). Items include, “The principal discusses classroom issues with teachers,” “Teachers in this school like each other,” and “Teachers express pride in their school.” Higher values indicated a more favorable climate ( $M = 3.05$ ,  $SD = 0.24$ ). The

overall OHI score was used for the current study and demonstrated moderate to high internal reliabilities ( $\alpha = .73$  to  $.95$ ; Bevens et al., 2007).

**Student and teacher demographics**—Student demographic variables (grade, gender, and ethnic identity) and teacher demographics (gender, ethnicity, and number of years teaching) were obtained through teacher report or data accessible through the Maryland State Department of Education. Since the sample largely consisted of White (48%) and Black (44%) students, student ethnic identity was dummy coded with Black being the reference group (1 = Black students, 0 = all other ethnicities). See Table 1 for demographic data on the sample.

**Classroom demographics**—Classroom demographics (gender and ethnicity) were aggregated up to the classroom-level based on individual student-level data. Class enrollment was included as a control variable and was based upon the number of TOCA-C forms the teacher completed ( $M = 20.38$ ,  $SD = 3.78$ ).

**School characteristics**—Student-teacher ratio, school enrollment, urbanicity (urban versus suburban or rural location), faculty turnover (percentage of faculty new to the school that year), student mobility (sum of the percent of students moving in and percent of students moving out of the school in that school year), and student poverty (percent of students receiving free or reduced-cost meals [FARMS]) were obtained from the Maryland State Department of Education for the school year. Table 1 provides means, standard deviations, and ranges for school-level variables.

## Procedure

Data were collected from the teachers via an individually addressed survey packet. Teachers completed a brief student demographic form and behavior-rating checklist on each student. The survey packets were mailed in bulk to the school and distributed to the school staff. To ensure confidentiality, teachers completed the study materials on their own time and returned the materials directly to the researchers through the U.S. mail. Each teacher questionnaire packet included a small incentive with an approximate value of less than one dollar (e.g., disposable ballpoint pen, bookmark). The staff response rate for the self-report materials was 78%, whereas the TOCA-C completion rate was 91%. Staff provided written active consent, whereas the student participation was covered by passive parental consent. The Institutional Review Board at the lead investigators' institution approved this study.

## Multilevel Modeling

Given the nested nature of students in classrooms and schools, Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) was used to examine the primary research questions. All multilevel modeling procedures were conducted using the HLM version 7. To answer the study's aims a series of three models were developed. Model 1 examined the effects of individual student-level covariates on reports of problem behavior (i.e., gender, race, grade, academic proficiency, prosocial behavior, and concentration problems). Model 2 examined the association between the student problem behavior and non-malleable variables at the class-level, including classroom (percent of males, percent of Black students, enrollment)



and teacher demographics (gender, ethnicity, number of years teaching), as well as school-level (student-teacher ratio, school enrollment, urbanicity, faculty turnover, student mobility, and FARMS). The final model (Model 3) examined the relationship between student problem behavior and malleable classroom and school factors (class- and school-wide behavior patterns, school climate, behavior management strategies).

As noted above, the primary aim of the current study was to examine the relationship between teachers' perceptions of student behavior after taking into account significant demographic variables at the individual, classroom, and school level. Thus, classroom and school behavior patterns and school climate variables were tested in the final model after all other significant variables were controlled for. Variables were added in systematically due to the interactive nature of school systems. Significant random coefficients ( $p < .05$ ), at either Level 2 or 3, were retained in subsequent models. If the fixed effect of a variable was significant, it was subsequently tested in the slope equations (Raudenbush & Bryk, 2002).

## Results

### Descriptive Statistics

Demographic and descriptive data on individual, classroom, and school variables were calculated using Statistical Package for the Social Sciences (SPSS 18.0) and are presented in Table 1.

### Unconditional Model

To determine the amount of variability in teacher perceptions of problem behavior within and between classrooms and schools, intraclass correlations (ICCs) were calculated using the unconditional model, which contains no predictor variables (Raudenbush & Bryk, 2002). The ICCs were calculated to be 0.802 for the students within classrooms, 0.164 for the classrooms within schools, 0.034 for between schools. A chi-square tests for this unconditional model indicated there were significant differences in teacher perceptions of problem behavior between classrooms ( $\chi^2(429) = 1997.56, p < .001$ ) and schools ( $\chi^2(36) = 102.15, p < .001$ ), thus modeling between-class and school differences was warranted.

### Multivariate Results

**Student-level covariates**—A random-coefficient model was used to assess the relation between student covariates and teacher perceptions of problem behavior. Students' gender, race, academic standing, academic proficiency, prosocial behavior, and concentration problems were significantly related to reports of problem behavior (Table 2). The random effects of these covariates were also significant at the class level ( $p < .05$ ), with the exception of gender (see Table 2 Random Effects). At the school level, findings showed non-significant random effects for all variables ( $p > .05$ ). It should be noted that adding student covariates into the student-level equation significantly reduced the amount of deviance present within the model, such that 65% of the variation in mean problem behavior at the individual level was explained by the addition of the selected student covariates. Plausible value estimates were calculated to determine how much classrooms vary in terms of racial differences, as well as social and academic functioning. The gap between teacher

perceptions of Black and White students' problem behavior ranged from  $-0.053$  to  $0.411$ , depending on the classroom. Differentiation effects for academic proficiency ( $-0.034$ ,  $0.214$ ), prosocial behavior ( $-0.834$ ,  $-0.040$ ), and concentration problems ( $-0.070$ ,  $0.512$ ) all suggest there was considerable variation between classrooms and further modeling was warranted.

**Classroom and school characteristics**—Student body characteristics (percent males and Black students, student mobility, and FARMS), teacher demographics (race, gender, and years teaching at this school), and school characteristics (student-teacher ratio, enrollment, school location, faculty turnover) were added as covariates in the model. At the class-level, the percent of Black students (unstandardized coefficients [coef] =  $0.002$ ,  $p < .001$ ) was significantly related to higher levels of problem behavior. At the school-level, FARMS was significant (coef =  $0.002$ ,  $p < .05$ ), suggesting an association between student body SES and reports of problem behavior. Surprisingly, none of the teacher demographic variables were significant.

**Classroom and school climate**—After controlling for student covariates and demographic characteristics of the student body, teaching staff, and school, class-level and schoolwide averages for prosocial behavior, concentration problems, and academic proficiency, as well as school climate and behavior management were tested in the model. At the class level, average prosocial behavior and concentration problem were significantly associated with teacher perceptions of individual student problem behavior; however, academic proficiency was not. Teachers' reported use of behavior management principles in the classroom was nonsignificant (see Table 2). At the school level, none of the behavior averages were significantly related to reports of problem behavior. School climate was significant, such that teachers working in schools with more positive school climates tended to report fewer problem behaviors in their classroom (coef =  $-0.145$ ,  $p < .05$ ). The last step in the modeling process was to reduce the variance in the individual covariate slope equations at the class level. The only significant variable was average classroom prosocial behavior in the Black slope equation (coef =  $-0.129$ ,  $p < .001$ ).

### Proportion of Variance Explained

The estimated variances of the study's final model suggested there was a significant reduction in the proportion of variance in teacher perceptions of problem behavior across all three levels. The variance components for the final 3-level model were calculated to be  $0.186$  for the students within classrooms,  $0.065$  for the classrooms within schools,  $0.001$  for between schools. Thus, comparing this to the unconditional model, the student-level model was reduced 65% after taking into account student demographics, and social and academic functioning. The estimated class level variance showed a reduction of 41% once student demographics and classroom behavioral averages were taken into account. Similarly, the variability in problem behavior across schools was reduced by 95% by the school climate and FARMS variables. Lastly, the problem behavior racial disparity was significantly mediated by the average prosocial behavior in the classroom, and accounted for 23% of the variation in the Black-problem behavior slope equation (variance components reduced from  $0.0325$  to  $0.0251$ ).

## Discussion

Reducing student problem behavior is a common concern for teachers and school mental health professionals, as it interferes with student achievement, as well as the overall climate of the school (Barnes et al., 2006; Epstein et al., 2008; Mitchell et al., 2010). However, the bureaucratic and often complicated nature of schools makes it difficult for school mental health researchers to identify contributing factors to students' behavior. The current multilevel study investigated teacher perceptions of elementary school students' problem behavior through an ecological lens by taking into account individual-, classroom-, and school-level factors. Of particular interest was identifying malleable variables influencing the classroom and school climate that were significantly associated with teacher perceptions above and beyond individual student and teacher characteristics. Calculation of the ICCs indicated that 80% of the total variance in teacher problem behavior ratings was between students within classrooms, 16% among classrooms within schools, and 3% between schools. These are similar to those reported in prior school effectiveness research (Rumberger & Palardy, 2004; Thomas et al., 2008), which suggests that while individual student characteristics have the largest influence on teacher behavior ratings, there is evidence that characteristics within the school system need to be examined when predicting teacher perceptions.

### Classroom Climate and Problem Behavior

After controlling for student demographics and individual behavior ratings, classroom behavior patterns significantly related to teacher perceptions of individual students. Specifically, teachers tended to perceive students more positively when other students in the class were well behaved (e.g., friendly to one another, completing assignments). Likewise, classrooms with more students behaving prosocially tended to have smaller disparities between White and Black youth's problem behavior scores. Conversely, teachers' perceptions of students in the context of a more behaviorally challenging classroom tended to be more negative. Given the current study's focus on teacher perceptions, it is unclear if the students' behavior was in fact worse in these classrooms or if teachers simply perceived it to be more problematic when other students were also engaging in off-task behavior. Although the current study used a cross-sectional design, the findings are consistent with prior work examining the behavioral trajectories of youth placed in classrooms with more problem behavior. Longitudinal research shows that the effects of classrooms with more behavior problems might be cumulative, such that students who are in classrooms with high levels of aggression and disruptive behavior for two or more years are at the greatest risk for later antisocial behavior (e.g., drug use, criminal conduct; Thomas et al., 2006). Thus, school-based prevention work may want to focus on reducing antisocial normative beliefs class-wide and promoting helping behavior. Likewise, educators aiming to reduce problem behavior may want to employ a tiered approach, such that class-wide social skills programs are utilized in combination with individual referrals for one-on-one mental health treatment for high-risk youth (Bradshaw, Bottiani, Osher, & Sugai, 2014).

Unlike classroom behavior patterns, teachers' reported use of a behavior management system was nonsignificant in the final model (Table 2). It may be the case that teachers who

reported using classroom behavior management did so because they had a behaviorally challenging class; thus we should not discount the value of teachers' use of behavior management strategies. Because the study only used one time point, the data do not take into account if the management system was developed before or after problem behaviors were detected. Likewise, it is unclear if teachers actually used the practices they reported having "in place" in their classroom when faced with behavior problems. Having both observational and teacher-report data, as well as data from two timepoints within the school year would be helpful to piece apart the impact behavior management strategies have on youth.

### **School Factors and Problem Behavior**

School climate appears to be a salient factor in how teachers perceive their students behavior. Other studies have found that teachers who characterize their school as having trust, cooperation, and openness among staff, students, and administrators tend to also view their students behavior more positively (Thapa et al., 2013). Schools can model positive interpersonal behavior by encouraging staff to form positive relationships with one another, which, in turn, can influence students' academic achievement, concern for others, and displays of prosocial behavior (Pas et al., 2010). For example, a study by Sun, Shek, and Siu (2008) found that a key component of successful schoolwide program implementation was teachers' ability to forge caring, respectful, and supportive relationships with the school administration. Moreover, previous research suggests that positive staff relationships appear to be even more salient among schools with low-income, minority populations (Brown & Medway, 2007). Taken together, these results highlight the importance of schools creating settings where student-teacher relationships can flourish and staff can openly communicate with one another.

The only other school-level variable that significantly related to teacher perceptions of problem behavior was the percent of students receiving FARMS. This suggests that the overall student body SES does warrant attention, as youth attending schools with a larger proportion of low-income families tend to demonstrate more problem behavior. This is consistent with previous research highlighting the relation between student poverty and increased rates of aggression and poorer behavioral functioning (Thomas et al., 2006). The association between SES and behavior can be linked to the fact that impoverished schools tend to lack adequate supplies (e.g., textbooks, computers, desks) or funding for school-based prevention programming. Under-resourced classrooms and schools negatively affect both the teaching staff and students, which can increase the likelihood for student problem behavior. In sum, additional research is needed to understand how student SES affects teachers' perceptions of youth who are both high and low in disruptive behavior, and how variables influence shifts in behavior over time.

### **Limitations of the Current Study**

It is important to consider some limitations when interpreting these findings. The current sample came from 37 elementary schools across the state of Maryland. While the sample pulled from rural, suburban, and urban fringe communities, it may not be representative of elementary school-aged youth in the United States. Thus, the findings may not generalize to all students and teachers in all communities. The study specifically focused on problem

behavior among elementary school students, thus findings may not generalize to middle and high school-age groups. It is likely that the salience of classroom and school contextual factors differ for adolescent youth due to the frequent classroom changes and developmentally different social dynamics. Consequentially, the influence of school climate on student behavior should be tested using an adolescent population. The current study focused on the main effects of commonly cited student-, classroom-, and school-level risk factors. Follow-up studies should aim to explore within- and cross-level interactions to piece apart these relations.

The study was cross-sectional in design, thus a causal relation cannot be inferred from these data. Additional research is needed using both longitudinal and randomized trial designs in order to the direction of association between students' problem behavior and school contextual variables. In addition, the variables included in the analyses relied heavily on teacher self-report, thus it is possible social desirability or other personal biases may have influenced their ratings. For instance, scores from the EBS survey reflect teachers' perceptions of their own classroom management strategies and do not reflect observed teacher behavior. Future studies should seek to incorporate a wider array of data sources (e.g., observational data, peer nominations) to address these potential limitations. Moreover, additional multilevel research is needed using multidimensional scales measuring various aspects of classroom behavior patterns. For instance, students' prosocial behavior can be further explored in terms of emotional regulation, empathy, and peer connectedness. Likewise, the inclusion of data documenting students' responses to teachers' instructional practices (e.g., general versus specific praise, opportunities to respond) as well as student-teacher relationships from the perspective of both parties would better inform school-based prevention and intervention programs.

### **Implications for School Mental Health Research and Practice**

Students enter into the school setting with a combination of both internal and interpersonal strengths and weaknesses that influence their academic success and behavioral functioning. Schools are required to provide equal learning opportunities for all types of students, no matter their gender, race, or social-emotional competencies. Yet, researchers have not pinpointed classroom and school climate factors relating to teachers' perceptions of student behavior problems. From an individual standpoint, variability in teacher perceptions of disruptive behavior can be attributed to differences from student to student. However, based on the current study, student demographic variables do not function alone. In fact, the average behavior in the classroom was found to relate to how teachers perceive individual student behavior. These results highlight the importance of classroom-based programs that enhance students' social competencies and social-emotional skills, while decreasing undesirable behaviors such as physical aggression and harassment (Bradshaw et al., 2014). For instance, the *Good Behavior Game* (Ialongo, Poduska, Wethamer, & Kellam, 2001), *Classroom Check-up* (CCU; Reinke, Lewis-Palmer, & Merrell, 2008), and *Roots of Empathy* (Schonert-Reichel, Smith, Zaidman-Zait, & Hertzman, 2012) are programs created to increase prosocial behavior and reduce aggressive norms in the classroom. Still, additional research is needed to determine for whom and in which contexts prevention

efforts are most effective at reducing problem behavior and strengthening prosocial behavioral norms.

The current study also provided support for programs aimed at enhancing the overall climate of the school. Over and above structural characteristics of the school and surrounding neighborhood, teachers' perceptions of the climate positively related to how they viewed their students behavior. Schools may want to utilize whole-school prevention programs that establish schoolwide rules and expectations related to student behavior and promote positive behavioral expectations, thereby altering the social norms across classroom settings. An increasingly used prevention model, *Positive Behavioral Interventions and Supports* (PBIS; Sugai & Horner, 2006) has been shown to significantly improve staff members' perceptions of school climate (Bradshaw et al., 2008, 2009), as well as reduce students' disruptive behaviors and suspensions (Bradshaw et al., 2012; Horner, Sugai, & Anderson, 2010). A three-tier prevention model such as PBIS would address both school-wide needs for connectedness among students, teachers, and administrators, but would also provide specific behavior management skills to staff that could help reform antisocial behavioral norms within the classroom.

Consistent with the ecological model, the current findings emphasize that classroom and school climate factors play an important role in how teachers perceive student behavior. Therefore, prevention and intervention efforts should take a multitier approach in order to effectively address behavioral concerns. Programs focused on reframing normative beliefs while utilizing skill building techniques may be the best suited for school-wide behavior improvement. The current findings also speak to the need for annual school climate assessments to monitor teacher and school staff perceptions of problem behavior and the broader functioning of the school. Through the data collection process schools can better identify problems within the school and subsequently tailor professional developments to match these areas of staff-identified need. Taken together, it is essential for school effectiveness research to include multilevel methodology to extend understanding of the nested nature of students within school organizational systems.

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**Table 1**

## Descriptive Statistics of Individual, Classroom, and School-level Variables

	<i>n</i> (%)	<i>Mean (SD)</i>	<i>Range</i>
<i>Student Demographics (N = 8,750)</i>			
Grade 1	1697 (19.4%)		
Grade 2	1750 (20.2%)		
Grade 3	1724 (19.7%)		
Grade 4	1846 (21.1%)		
Grade 5	1715 (19.6%)		
Male	4559 (52.1%)		
White	4226 (48.3%)		
African American	3833 (43.8%)		
Other*	685 (7.8%)		
Problem behavior		1.90 (0.83)	1, 6
Prosocial behavior		4.80 (1.00)	1, 6
Concentration problems		2.64 (1.10)	1, 6
Academic proficiency		3.24 (1.23)	1, 5
<i>Classroom Demographics (N = 467)</i>			
Teacher gender -female	430 (92.1%)		
Teacher race -White	417 (89.4%)		
Teacher race -African American	42 (8.9%)		
1–5 years teaching	201 (43%)		
6–10 years teaching	79 (17%)		
10+ years teaching	187 (40%)		
% males in class		52.58 (9.96)	27, 83
% Black students in class		42.48 (31.18)	0, 100
Class enrollment		20.38 (3.78)	8, 31
Classroom Behavior Management		1.78 (0.23)	.40, 2.00
Average Prosocial Behavior		4.75 (0.57)	3.21, 6.00
Average Concentration Problems		2.66 (0.52)	1.00, 3.98
Average Academic Proficiency		3.25 (0.53)	1.63, 5.00
<i>School Demographics (N = 37)</i>			
Urban	15 (40.5%)		
Suburban	18 (48.6%)		
Rural	4 (10.8%)		
Student-teacher ratio		21.15 (4.84)	13, 31
% FARMS		43.14 (19.37)	7, 77
Student mobility		23.04 (10.10)	7, 48
Faculty turnover rate		14.54 (12.19)	0, 67
School Climate		3.05 (0.24)	2.64, 3.61

*Note.* Prosocial Behavior, Concentration Problems, and Academic Proficiency are all measured by the Teacher Observation of Classroom Adaptation–Checklist (TOCA-C); Classroom Management is measured by the Effective Behavior Support Survey (EBS); School Climate is measured by the Organizational Health Inventory (OHI), Total Score (OHI); FARMS (free and reduced-cost meals rate).

**Table 2**

Three-Level Hierarchical Student Covariate, Class and School Characteristics, and Final Model

	<b>Model 1: Student Covariates</b>	<b>Model 2: Class and School Structural Characteristics</b>	<b>Model 3: Class and School Climate</b>
<i>Fixed Effects</i>			
	Unstandardized Coefficient (Standard Error)		
Reference Intercept	1.887 (0.030) **	1.891 (0.018) **	1.890 (0.016) **
<i>Level 1: Student</i>			
Male	0.105 (0.016) **	0.106 (0.015) **	0.103 (0.016) **
Black	0.192 (0.022) **	0.192 (0.021) **	0.190 (0.021) **
Academic Proficiency	0.082 (0.009) **	0.082 (0.009) **	0.080 (0.009) **
Prosocial Behavior	-0.428 (0.018) **	-0.430 (0.018) **	-0.432 (0.018) **
Concentration Problems	0.213 (0.013) **	0.213 (0.013) **	0.212 (0.013) **
<i>Level 2: Classroom</i>			
% Black in Class		0.002 (0.001) **	0.001 (0.016) *
Class Behavior Management			-0.013 (0.001)
Prosocial Behavior Average			-0.325 (0.036) **
Concentrate Problems Average			0.198 (0.035) **
<i>Level 3: School</i>			
FARMS		0.002 (0.001) *	0.002 (0.001) *
School Climate			-0.145 (0.048) *
<i>Random Effects</i>			
	Variance Components		
Black, $r_2$	0.032 **	0.033 **	0.025 **
Academic Prof, $r_3$	0.008 *	0.008 **	0.008 **
Prosocial Behavior, $r_4$	0.051 **	0.052 **	0.051 **
Concentration Prob, $r_5$	0.026 **	0.026 **	0.027 **
Level-1 effect, $e$	0.185	0.185	0.186
Level-2 effect, $r_0$	0.147 **	0.139 **	0.064 **
Level-3 effect, $u_{00}$	0.011 **	0.003 *	0.001

\*  
 $p < .05$ .\*\*  
 $p < .001$ .