



A latent class analysis of school climate among middle and high school students in California public schools



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ABSTRACT

Research has shown that a positive school climate plays a protective role in the social, emotional, and academic development of adolescent youth. Researchers have utilized variable centered measures to assess school climate, which is limited in capturing heterogeneous patterns of school climate. In addition, few studies have systematically explored the role of race and gender in perceived school climate. This study utilizes a latent class approach to assess whether there are discrete classes of school climate in a diverse statewide sample of middle and high school youth. Drawing from the 2009–2011 California Healthy Kids Survey, this study identified four latent classes of school climate: Some caring, connectedness, and safe; negative climate; high caring, participation, and safe; and positive climate. The findings indicated that race and grade level significantly predicted school climate class membership. Black students were three times more likely to be members of the negative school climate class, when compared to White students. Gender did not significantly predict school climate class membership. The results of this study provide school climate researchers and educators with a nuanced picture of school climate patterns among middle and high school students.

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1. Introduction

Researchers and educators for several decades have acknowledged that a positive school climate plays a contributing role in a wide range of adolescent outcomes, including academic achievement, mental health, substance abuse, and school violence (Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). School climate organizations such as the National School Climate Center, Center for Academic, Social and Emotional Learning (CASEL) have recently developed state standards and school-based programs, interventions, curriculum, and resources for improving school climate. In addition, in the past two decades, public schools throughout the United States have incorporated school climate interventions into educational reform initiatives. Efforts to improve school climate such as bullying prevention, threat assessment, and school safety programs have been implemented by K-12 schools in the United States and in international contexts to foster caring relationships, safety, and connectedness among youth (Benbenishty & Astor, 2005; Thapa et al., 2013).

Defining and measuring school climate has been a challenge. Researchers have noted the discrepancies in the literature, regarding school climate domains and measures (Cohen, McCabe, Michelli, & Pickeral, 2009; Zullig, Koopman, Patton, & Ubbes, 2010). Scholars have

recently defined school climate as the collective beliefs, values, and attitudes that prevail at school and have measured the multiple dimensions of school climate, including caring relationships with adults, safety, school connectedness, and meaningful participation (Cohen et al., 2009; Koth, Bradshaw, & Leaf, 2008; Modin & Östberg, 2009; Thapa et al., 2013; Zullig et al., 2010). However, most research has assessed school climate using individual scales of school climate in isolation. Few studies have attempted to uncover the heterogeneous patterns of school climate, as experienced by students (Konold & Cornell, 2015). In addition, while educational researchers have documented differential academic achievement and outcomes by race and gender, researchers have not systematically explored how different groups of students (i.e. race and gender) experience multiple dimensions of school climate (Gage, Prykanowski, & Larson, 2014; Thapa et al., 2013). Given this gap in school climate research, this study utilizes a latent class approach to explore heterogeneous patterns of school climate in a large statewide sample of middle and high school students. This study also examines how different groups of students (i.e. race and gender) experience multiple dimensions of school climate.

1.1. Defining school climate

Recently, a series of school climate studies and literature reviews has defined school climate as comprised of multiple dimensions (Cohen et al., 2009; De Pedro, Astor, Gilreath, Benbenishty, & Esqueda, 2014;

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Thapa et al., 2013). These dimensions include caring relationships with adults, safety, school connectedness, and meaningful participation (Benbenishty & Astor, 2005; De Pedro et al., 2014). *Caring relationships* is defined as a student's perception of the extent of social and emotional support they receive from teachers and other school adults. *Safety* is defined as a student's sense of physical and social-emotional security. *School connectedness* is defined as the degree to which students feel they belong to a school community and have a positive connection with peers and adults in a school community. *Meaningful participation* is the involvement of students in relevant, engaging and interesting opportunities that develop a sense of responsibility in the school community (Benbenishty & Astor, 2005; De Pedro et al., 2014). Recent studies have utilized these domains to assess school climate in different school contexts (De Pedro, Astor, Gilreath, Benbenishty, & Berkowitz, 2015; De Pedro, Astor, Gilreath, Benbenishty, & Berkowitz, in press; De Pedro et al., 2014).

A positive and caring social and emotional school climate has been found to influence a wide array of adolescent outcomes (Cohen et al., 2009; Thapa et al., 2013). This includes *schooling*, such as attendance, motivation, cooperative learning, and test scores; *risky behaviors*, such as bullying and victimization, aggression, risky sexual behavior, alcohol, and drug use; and *psychological outcomes*, including psychiatric disorders, depression, anxiety, and well-being. Studies have demonstrated the protective effect of school climate on youth development in various geographic locales (Astor, Benbenishty, & Estrada, 2010; Thapa et al., 2013). For instance, scholars have found that school climate mitigates the effect of poverty, war and trauma, community violence, and family stress on schooling, mental health, and social development (Astor et al., 2010; Benbenishty & Astor, 2005; Marachi, Astor, & Benbenishty, 2006; Thapa et al., 2013).

School climate researchers primarily have utilized a variable centered approach. This approach aims to examine how different school climate constructs influence outcomes. The variable centered approach is limited in capturing heterogeneous patterns of school climate, specifically how different components of school climate coalesce among students (Gage et al., 2014; Konold & Cornell, 2015). Latent class analysis (LCA) is an exploratory person centered approach that assumes a categorical latent factor. The goal of LCA is to group individuals into categories, each one of which contains individuals who are similar to each other and different from individuals in other categories (Muthén & Muthén, 2000). LCA is well suited for one critical aim of this study, which is to uncover discrete classes of school climate in a large sample of middle and high school students.

1.2. Race, gender, and school climate

Research exploring the role of race as a factor that influences school climate perceptions is a growing area of research (Koth et al., 2008; Thapa et al., 2013). Among elementary students, perceived caring relationships vary by race. Schneider and Duran (2010) found that Latino third grade students viewed personal relationships with teachers more important than adults modeling positive behaviors; this view was different from White and Asian students. Furthermore, in a study of 1000 African-American students and 260 Latino third graders in the Chicago Comer School Development Program, African-American children perceived teacher-child relations as the most important dimension of school climate, while Latino students prioritized teacher fairness, caring, praise of effort, and the importance of moral order above other aspects of school climate (Slaughter-Defoe & Carlson, 1996).

Only a few studies have examined the role of race in explaining variation in school climate among middle and high school youth. These studies have focused on students' perception of racial climate. Schneider and Duran (2010) found that African-American middle and high school youth perceive racial climate more negatively than White peers. Furthermore, a negative racial climate was significantly related to higher rates of discipline and lower grade among racial minority

students, which in turn, adversely impacted college preparation (Schneider & Duran, 2010; Thapa et al., 2013). More studies are needed to explore how different racial groups experience multiple components of school climate. Given this gap in school climate research, the current study explores associations between school climate class membership and race.

School climate studies have not yet examined differences in how boys and girls experience multiple components of school climate. However, school violence researchers have identified differences in the frequency and type of violence experienced by boys and girls at school, which is known to impact perceptions of safety, a dimension of school climate (Benbenishty & Astor, 2005). Some research found that boys are more likely to report frequent victimization than girls while other research indicated no significant differences between boys and girls in victimization prevalence (Berkowitz, De Pedro, & Gilreath, 2015). Disparities in the frequency of male and female students' victimization may be explained by the type of violence experienced by both genders. Studies have shown that female students are more likely to experience relational and indirect victimization while male students are more likely to experience direct forms of physical victimization (Batsche & Knoff, 1994; Casey-Cannon, Pasch, Tschann, & Flores, 2006; Finkelhor, Ormrod, & Turner, 2007; Hartung, Little, Allen, & Page, 2011; Murray-Close, Ostrov, & Crick, 2007; Peskin, Tortolero, & Markham, 2006). In addition, girls experience sexual harassment more frequently than boys, and boys perpetrate sexual harassment more frequently than girls (Gruber & Fineran, 2007; McMaster, Connolly, Pepler, & Craig, 2002; Pepler et al., 2006). These disparities in the experience of violence and victimization by boys and girls, have led us to hypothesize that boys and girls may also experience climate differently. Hence, this study explores gender as a factor influencing school climate class membership.

1.3. Study objectives

The current study contributes to the emerging need among educational researchers and school professionals for a deeper understanding of the complex patterns of school climate among middle and high school students. Hence, this study utilizes latent class analysis to identify and classify school climate perceptions in a statewide sample of secondary public school students in California. This study also assesses how demographic variables such as race and gender are associated with school climate.

Latent class analysis is utilized as an exploratory tool to examine a multi-dimensional construct, school climate, in a novel way. Notwithstanding, we anticipated that there would be at least three classes of students based upon the literature—those that did not perceive positive school climate, those who were mixed in their perceptions, and those who perceived positive school climate. Based on previous research on race and school climate, we expected low levels of school climate to be associated with non-white students.

2. Method

This study employed a cross-sectional design. The data used in this study are from the 2011–2013 administration of the California Healthy Kids Survey (CHKS), conducted by the California Department of Education and WestEd, a nonprofit research, development, and service agency. The CHKS is the largest statewide survey of elementary, middle, and high school students' perceptions of school climate, resiliency, and risk behaviors in the United States (Austin, Bates, & Duerr, 2013). The CHKS is a biennial survey that is comprised of a required core module that gathers demographic data (i.e. gender, grade, and race and ethnicity), school climate perceptions, and health-related behaviors (i.e. alcohol use, drug use, violence and victimization).

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