School Climate and Mental Health Among Hispanic ELL Students

By

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ABSTRACT

This study investigates whether Hispanic English Language Learners (ELL) have higher anxiety and depression than Hispanic non-ELL students and whether this relationship is moderated by their perception of school climate. Researchers often overlook the language heterogeneity within the Hispanic population, instead focusing mostly on comparisons between Hispanic students and their non-Hispanic peers. But at the individual level, one of the most widely documented risk factors for Hispanic students is language proficiency, particularly among the ELL subpopulations. This study aims to fill a gap in the literature by disaggregating Hispanic students based on the distinct needs of ELLs. Participants in this study are current fifth grade students enrolled in a school mental health study underway in 16 public elementary schools in North and South Carolina (n = 1,216). We compare ELL status Hispanic subgroups (n = 146) on the PROMIS Anxiety, PROMIS Depression, and BIMAS-2 Negative Affect scales, and then examine whether the effect of ELL status on these scores changes depending on perceptions of school climate. Our findings will inform culturally responsive educational and behavioral health interventions for Hispanic students.

School Climate and Mental Health Among Hispanic ELL Students

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Master of Arts in Psychology with a concentration in School Psychology

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CHAPTER I: INTRODUCTION AND LITERATURE REVIEW

The United States is grappling with a significant mental health crisis among its youth, a situation exacerbated by the COVID-19 pandemic. A large meta-analysis examined the prevalence of mental health symptoms in children and adolescents during the COVID-19 pandemic and found that after January 2020, 31% of children and adolescents worldwide exhibited a pooled prevalence of depressive symptoms and 31% exhibited a pooled prevalence of anxiety symptoms (Deng et al., 2023). Other meta-analyses appear to corroborate these findings, suggesting that the pandemic was associated with sharp increases in youth mental health concerns in studies from around the world (Racine et al., 2021; Madigan et al., 2023).

Anxiety symptoms in youth include fear, worry, irritability, anger, trouble sleeping, fatigue, headaches, and stomachaches. Depression in youth is marked by persistent feelings of sadness or hopelessness and a loss of interest in daily activities (American Psychiatric Association [APA], 2022). Adolescents with anxiety or depression are more likely to experience difficulties in school and social life, such as disengagement from school, problems with bullying, and difficulty making or keeping friends (Sappenfield et al., 2024).

Environmental factors such as early trauma, neglect, and ongoing stress often play a significant role in the development of anxiety and depression (Kalin, 2021). Children from minoritized backgrounds in the United States appear to be at higher risk for anxiety and depression, due in part to the substantial role that social factors play. For example, minoritized youth are disproportionately impacted by traumatic experiences owing to historical or generational trauma, immigration challenges, discrimination, and community violence. Such stressors contribute to rising rates of anxiety and depression among minoritized youth in the United States (Pumariega et al., 2022).

For these reasons, it is crucial to examine the effects of school on social-emotional functioning because most children spend a significant portion of their day in school settings. Research indicates that a positive school climate predicts decreased anxiety and depression (Franco et al., 2022). Students who attend schools with higher levels of peer and school connectedness have less depression and anxiety over time (Bond et al., 2007). A positive school climate, however, is not a homogenous experience for all students within a school. Various studies have shown that there are disparities in school climate perceptions across student subgroups (Chan et al., 2024). Commonly, minoritized students often have worse ratings in perceptions of school climate compared to their White peers (Graham, 2022). Although there is ample research on anxiety, depression, and perceptions of school climate, scant research has focused on the disparities in anxiety, depression, and perceptions of school climate among Hispanic youth—one of the fastest growing populations in the United States.

Hispanic Youth in the United States

The term "Hispanic" specifically refers to people from Spanish-speaking countries, whereas "Latino" includes individuals from all Latin American countries and some Caribbean nations, regardless of whether Spanish is the primary language spoken. It is important to note that the definition of "Latino" can vary depending on context and individual preferences. Some people may identify more strongly with their specific nationality (e.g., Mexican, Colombian, Cuban) than with the broader term "Latino." But ultimately, how someone identifies ethnically or culturally is a personal choice. Despite these differences, the terms "Hispanic" and "Latino" are often used interchangeably in research literature. Given that the focus of this research is on language heterogeneity within the Hispanic population, I will use the term "Hispanic"

throughout; however, I will use the term “Latino” when source materials are clear they mean the term narrowly to refer to individuals from Latin America.

Between the fall of 2010 and the fall of 2021, there was an increase in Hispanic students in the U.S. public school system, from 23% to 28% (Irwin et al., 2023). Current estimates indicate that about 30% of public-school students attend schools where minoritized students comprise 75% or more of the total enrollment. Within these schools, over half of the students are Hispanic (de Brey, 2019). Considering the substantial presence of Hispanic youth within the U.S. school system, it is important to evaluate the degree to which their needs are being met. Unfortunately, it is well documented that Hispanic students are at an increased risk for socioemotional problems and poorer perceptions of school climate when compared to their non-Hispanic White peers (Voight et al., 2015).

Prevalence of Mental Health Needs in Hispanic Youth

Hispanic children and adolescents are, in many cases, at greater risk for mental health problems than their non-Hispanic peers (Center for Behavioral Health Statistics and Quality, 2016). In 2021, Hispanic high school students were more likely than non-Hispanic students to experience persistent feelings of sadness or hopelessness during the past year. The percentage of Hispanic students who experienced these feelings increased from 33% in 2011 to 46% in 2021 (Center for Disease Control and Prevention, 2021). Over the last two decades, according to biennial surveys carried out by the Centers for Disease Control and Prevention, Hispanic middle school and high school students have consistently reported experiencing significantly more symptoms of depression and instances of suicidal ideation or behavior compared to their non-Hispanic African American and European American peers (Wagstaff & Polo, 2012). In 2019, for example, suicide attempts among Hispanic girls in grades 9-12 exceeded those of non-Hispanic

girls in the same age group by 30% (Center for Disease Control and Prevention, 2019). In addition to depression, anxiety is prevalent among adolescents, especially among Hispanic youth. The National Comorbidity Survey-Adolescent Replication Supplement showed that Hispanic youth are at the highest risk for mood/anxiety disorders compared to their non-Hispanic peers (Georgiades et al., 2018).

Causes of Mental Health Needs for Hispanic Youth

Hispanic youth experience a variety of interconnected and complex stressors. Among these stressors are family culture conflict, context of reception for immigrants, barriers to mental health care, low socioeconomic status, and acculturative stress. Family culture conflict occurs when there is discord between a family member and an adolescent due to differences in their cultural values that arise due to differential acculturation (McCord et al., 2019). Family culture conflict is positively associated with depressive symptoms in Hispanic youth. Perceived negative reception, defined as the perception that the host culture is unwelcoming and hostile, is positively linked to depressive symptoms in Latino adolescents (McCord et al., 2019). Additionally, those who identify as Latino are overrepresented in under-resourced communities, which is a risk factor for depressive symptoms (McSorley et al., 2023).

Although Latino youth could benefit from mental health services, evidence shows that they have the lowest rates of mental health care utilization (Rodríguez & Smith, 2020). Hispanic populations encounter significant barriers at both attitudinal and systemic levels that impede their access to mental health care services. Attitudinal barriers encompass cultural mistrust toward mental health systems, perceptions of discrimination from healthcare providers, and a preference for self-reliance in addressing mental health concerns. Meanwhile, systemic barriers include a lack of ethnic or racial congruence between patients and providers, inadequate health insurance

coverage, socio-economic disadvantages, limited proficiency in English, transportation challenges, scheduling difficulties, insufficient childcare options, an inability to take time off work, and restricted educational attainment (Falgas et al., 2017). These multifaceted barriers collectively contribute to the underutilization of mental health services among Hispanic populations, further perpetuating the disparities in mental health outcomes for this population.

Acculturative Stress and Mental Health in Hispanic ELL Students

Culturally focused researchers have identified a unique challenge for the mental health of Hispanic youth termed acculturative stress. Acculturative stress encompasses the psychosocial pressures linked to navigating conflicting cultural expectations and the perceived obligation to assimilate into the dominant culture to evade discrimination. The psychosocial stressors can be summarized by four factors: (a) perceived discrimination; (b) familiar acculturative gaps; (c) immigrant/English leaner-related stress; and (d) decreased sense of school and community belonging (Castro-Olivo et al., 2014). Evidence suggests that acculturative stress reduces the mental health and well-being of ethnic minorities and can lead to poor socioemotional outcomes (Lueck & Wilson, 2011). Acculturative stress in Latino adolescents is associated with adverse adjustment outcomes, such as substance use, anxiety, and depression (Bekteshi & Kang, 2020).

Latino ELLs experience elevated levels of acculturative stress in comparison to other Latino groups (non-ELL), which can be partially attributed to the numerous challenges associated with language barriers (Castro-Olivo, 2014). Although brief, the literature suggests that Latino ELL students who spend more time in English Language Development programs have poorer social-emotional resiliency than their Latino non-ELL counterparts (Castro-Olivo et al., 2011). One study found that decreased English proficiency was linked to increased perceptions of discrimination and increased depressive symptoms among ethnic minoritized

students (Kim et al., 2011). Another study of predominantly Latino fifth grade students found that Spanish-dominant youth perceived more discrimination and experienced more acculturative stress than English-dominant youth (Kulis et al., 2009). For these reasons, English proficiency can serve as one indicator of acculturative stress among Hispanic students.

In school, many ELL students experience social isolation and exclusion because of their lack of English proficiency, further leading to negative socioemotional outcomes. ELL students encounter challenges of marginalization and being perceived as outsiders by both their peers and educators (White et al., 2023). ELL students may also be targets for negative peer interactions. One study examined the experiences of immigrant Latino students, who were majority ELLs, and found that the non-English dominant students received negative peer attention from and were bullied by their English-dominant counterparts due to their lack of fluency in English (Mendez et al., 2012).

Special language instruction presents difficulties for Hispanic ELLs, and the psychological repercussions of English-language immersion on learners reveal various effects such as anxiety, depression, anger, school phobia, as well as eating and sleeping difficulties among English-language learners (Parra, 2014). A study examining the psychological effects of English-language immersion on elementary-aged ELL students in Arizona public schools revealed that all participants displayed symptoms linked to emotional abuse in connection to participation in the ELL programs. Such programs were shown to compromise the cognitive, social, and emotional growth of ELL students. Students reported that placement in ELL programs negatively impacted their self-doubt, anxiety, depression, withdrawal from normal social experiences and friendships, anger, and frustration (Parra, 2014). Thus, placement into ELL programs in schools may further perpetuate the negative socioemotional outcomes for

Hispanic-ELL students. In addition, evidence suggests that ELL students who spend portions of their school day in separate classrooms apart from non-ELL peers experience feelings of isolation, exclusion, and being perceived as outsiders (White et al., 2023).

In addition to having a significant number of stressors that lead to poorer socioemotional outcomes for Hispanic-ELL students, these students also often have their socioemotional needs ignored. Hispanic ELL students reported that their emotional needs are routinely overlooked or dismissed, contributing to ongoing negative impacts on their social and emotional well-being (Soland & Sandilos, 2021, p. 25). Moreover, Hispanic-ELL students have historically been underrepresented in the Emotional Disturbance (ED) category for special education services—a concerning trend given their disproportionately elevated risk for social-emotional challenges. (Castro-Olivo et al., 2011).

School Climate and Hispanic ELL Students

The ecological model (Bronfenbrenner, 1979) delineates how individuals are influenced by four interconnected ecological systems: microsystem (immediate environments), mesosystem (interactions between environments), exosystem (external settings impacting environments), and macrosystem (societal institutions and cultural norms). For Hispanic youth, the microsystem may consist of parental acculturation levels and family acculturative gaps; the mesosystem may include a sense of school belonging; the exosystem may include immigration law and public policy; and the macrosystem may include low socioeconomic status, racism and discrimination, and attitudes toward immigrants (Blanco-Vega, 2008). All these factors can influence the mental health of Hispanic ELL youth.

One contextual factor located in the microsystem that is well-known to influence mental health among youth is school climate. School climate is defined as the perceived quality and

character of one's school, and it has been conceptualized to include various constructs. Researchers have highlighted the significance of four constructs of school climate for the well-being of middle school students: (1) the quality of teacher-student relationships; (2) peer relationships; (3) student autonomy in decision-making; and (4) the clarity, consistency, and fairness of school rules and regulations (Way, 2007). Research has shown significant correlations between students' perceptions of teacher support, peer support, student autonomy, and clarity and consistency in school rules with psychological adjustment. These findings suggest that a positive school environment is associated with reduced anxiety and depression (Way, 2007). Additionally, schools characterized by greater peer and school connectedness tend to exhibit lower levels of depression and anxiety over time (Bond et al., 2007).

Minoritized students tend to report lower ratings of school climate when compared to their White counterparts (Graham, 2022), and this pattern generally holds true for Hispanic students (Romero & O'Malley, 2020). Specifically, Hispanic students are less likely to report having a caring relationship with an adult at school, less likely to report that their school has high expectations for students, less likely to feel that all students are treated with respect, and less likely to report high levels of safety at school compared to non-Hispanic White students (Voight et al., 2015). Interestingly, however, Latino students report more positive school climate perceptions in schools with higher concentrations of Latino students. Researchers suggest this may be due to increased cultural representation and social support (Benner & Graham, 2011). Although studies often show differences in school climate perceptions between Hispanic students and non-Hispanic White students, it is important to remember that these groups are not monolithic. Diversity within each group can significantly influence individual experiences and perspectives.

Romero and O'Malley (2020) uncovered variations in perceptions of school climate among Latino students in California. As hypothesized, they found that students had varying perceptions of school climate ranging from high/positive to low/negative, which supports the notion that substantial heterogeneity of school climate perceptions exists within the Latino student population. Although this study underscores the heterogeneity in the Latino population, it does not explore covariates associated with perception of school climate among Latino students. Covariates known to confer risk for Hispanic youth, such as English language proficiency, warrant investigation.

A discrepancy between a student's language proficiency and the language focus of their educational institution can detrimentally impact the sense of belonging and perception of school climate for ELL students (Yough et al., 2023). The less proficient an ELL student is in English, the more likely they are to have negative perceptions of the school climate. This may be due to feelings of isolation and frustration because of language barriers and cultural differences, experiences of discrimination or bias based on language status, lack of support from linguistically and culturally similar teachers and staff, and/or academic challenges leading to feelings of inadequacy and inferiority (Yough et al., 2023). Additionally, parents of ELL students with limited English proficiency often have a less favorable perception of school climate, subsequently influencing their children's perception of the educational environment.

Overall, a review of the current literature revealed a gap in understanding socioemotional challenges and perceptions of school climate among the diverse Hispanic subpopulation. Within the Hispanic student population, there exists a diversity of experiences and backgrounds, with one of the most pronounced differences being English language proficiency. Seventy percent of Latino students speak a language other than English at home and nearly half of first-generation

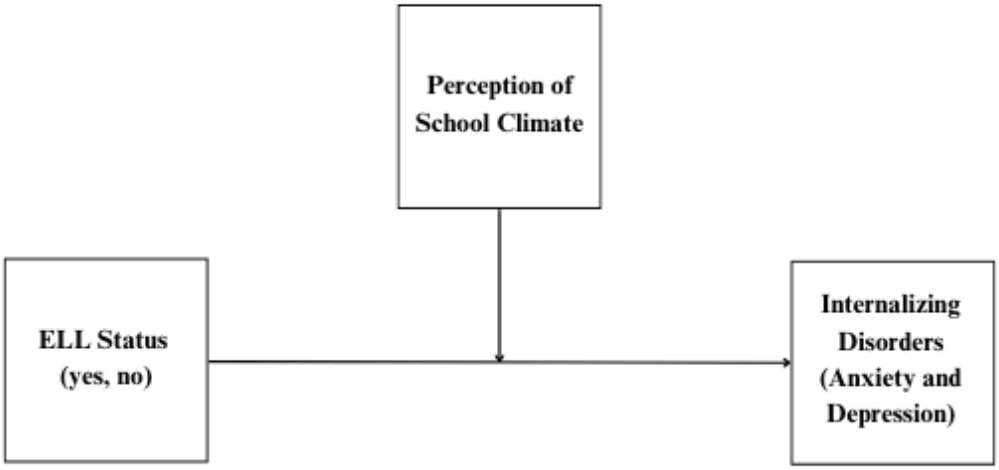
students speak English with difficulty (Fry & Gonzales, 2008). Most (77.1%) of ELL students are Latino, and a higher percentage in lower grades than those in upper grades are ELL students. Additionally, more than two thirds of U.S. Latino students are ELL (Irwin et al., 2023). Given that language proficiency, as a proxy for acculturative stress, is one of the most widely documented risk factors for Hispanic students, Hispanic ELL students may experience less favorable socioemotional outcomes compared to their Hispanic non-ELL peers.

Present Study

The proposed study tested the moderating effect of school climate on anxiety and depression for ELL versus non-ELL Hispanic students (see Figure 1). My hypotheses are that Hispanic ELL students will have higher rates of anxiety and depression scores than Hispanic non-ELL students, and that perceptions of school climate will significantly moderate the relationship between ELL status and student scores on measures of internalizing disorders (i.e., anxiety, depression) among Hispanic students. The results will speak to the social-emotional heterogeneity within the Hispanic student population and help illuminate the importance of recognizing the specific needs of the ELL subgroup within the Hispanic population.

Figure 1

Moderation Model



CHAPTER II: METHODS

Participants

The current study used data collected by members of the four-year *Early Supports for Successful Students* (ESSS) project (UMCIRB 21-001728). There have been five major measurement occasions, starting with baseline data collection in 2022, followed by fall and spring data collection in the treatment years (2022-23, 2023-24). The ESSS study will be ending this year with a follow-up measurement occasion in sixth grade in the winter of 2024/25. The Spring 2023 dataset used for the current study was comprised of 146 students in the third and fourth grades at eight urban/suburban/rural schools in eastern North Carolina (Pitt County Public Schools) and eight rural/suburban schools in western South Carolina (Rock Hill School District). Both districts include high percentages of low-income students with an average of 72% in North Carolina (NC) and 63% in South Carolina (SC) receiving free or reduced lunch. In the NC district, students identify as: 34.4% White, 45.2% Black, 13.5% Hispanic, 1.47% Asian, and 5.17% other (e.g., two or more races). In the SC district, students identify as follows: 45.8% White, 38.2% Black, 8.81% Hispanic, 1.39% Asian, and 6% other. Students with identified intellectual disabilities were not included in this study due to likely frustration with self-report measures for this population.

The students included in the present study were a subsample of Hispanic students (n = 146). Only these students were included to examine specific within-group differences in this heterogenous ethnic population. The sample included 64 boys and 82 girls. Seventy-one were classified as having Limited English Proficiency (LEP) and 75 were classified as non-LEP.

Procedures

Student recruitment for the ESSS study used an opt-out procedure. In the spring of 2022, two letters (duplicates) were sent to the families of each student describing the study and providing an opportunity to opt out. One letter was sent home in the child's backpack and the other was sent home via the teacher's usual mode of address such as email or messaging app. If opting out, families responded by signing and sending the letter back to the school via the student or contacting the teacher or administrator directly. For all participating schools, school record data was retrieved for students using the ESS School Records Request Form, once per year. Students were referred to using student identification numbers, not names, on all ESSS documents, assessments, notes, and logs.

To coordinate data collection, research staff emailed school principals to request an assessment window within the data collection period determined by the ESSS project timeline. Once preferences were received, research staff coordinated with data collector availability to finalize the assessment schedule. Upon finalization of this schedule, the site lead emailed all principals to confirm their day and time. Two weeks prior to data collection, the site coordinator sent an email to principals and teachers reminding them of their assessment as well as providing important information and procedures. At least four weeks prior to student measure data collection, each site confirmed a team of data collectors capable of collecting data on the determined dates. A survey administration training was help by the Grant Project Coordinator at each site and each data collector was required to “test out” with their site’s project coordinator prior to assessing students.

On data collection days, study personnel directed the students in a group administration by classroom to a Qualtrics survey, an online survey and data collection program with strong security features and technical support, using their school-provided devices (e.g. Chromebook).

The survey was set up as one long survey broken into five sections with instructions for each section given immediately preceding its administration. The sections of interest for this study were: (1) PROMIS-Anxiety (Pilkonis et al., 2011); (2) PROMIS-Depression (Pilkonis et al., 2011); and the (3) PBIS School Climate Survey (Algozzine et al., 2014). Each PROMIS measure took less than five minutes to administer, and the School Climate Survey took about 8 minutes. The five sections all together administered via the Qualtrics survey took approximately 20 minutes total. Data were directly imported into Excel for use in statistical analyses. Students were rewarded for participation by receiving non-monetary incentives following data collection in their classroom. For the BIMAS-2 Negative Affect measure, teachers logged in to an online portal and completed a survey for each of the students in their class. The teacher ratings were calculated with the scores from a subset of the questions.

Measures

PROMIS ® – Pediatric Anxiety

We utilized the Pediatric Anxiety Subscale, which is an eight-item self-report measure for children ages 5-17. PROMIS® (Patient-Reported Outcomes Measurement Information System) comprises a patient-reported outcome measurement tool designed to assess and track physical, mental, and social well-being (Pilkonis et al., 2011). The PROMIS Anxiety item banks assess self-reported emotions like fear (including panic), feelings of anxious distress (such as worry and dread), hyperarousal (such as tension and restlessness), and physical manifestations associated with arousal (such as rapid heartbeat and dizziness). These assessments are not tailored to any specific condition but rather serve as broad markers of anxiety experienced within the past week, emphasizing symptoms associated with automatic arousal and perceived danger. Each question is rated on a 5-point Likert scale, ranging from *never* to *always*. The overall raw

score is calculated by adding up the values of responses to each question. With eight items, the lowest achievable raw score is eight, while the highest attainable raw score is 40. A higher raw score suggests heightened levels of anxiety.

The PROMIS pediatric anxiety scale has demonstrated strong psychometric properties, making it a valuable tool for assessing anxiety symptoms in children and adolescents. Multiple studies have provided evidence for its validity, including content validity through rigorous item development (DeWitt et al., 2011), construct validity through correlations with established measures like the SCARED (Varni et al., 2014), and a consistent unidimensional factor structure (Irwin et al., 2012). The scale's reliability is supported by high internal consistency (Cronbach's alpha > 0.90) and good test-retest reliability (ICC 0.80-0.85) (Quinn et al., 2014; DeWitt et al., 2011). In the current sample, the PROMIS pediatric anxiety scale had high internal consistency as well (Cronbach's alpha = 0.85).

Item response theory-based development allows for computerized adaptive testing, reducing respondent burden while maintaining measurement precision (Varni et al., 2014). However, some limitations exist, such as the need for further research on measurement invariance across diverse populations and its sensitivity to change over time (Behrens et al., 2019). Despite these areas for future research, the PROMIS pediatric anxiety scale's strong validity and reliability position it as a robust measure for both research and clinical applications.

PROMIS® – Pediatric Depression

The ESSS study utilized the Pediatric Depression Subscale, which is an eight-item self-report measure for children ages 5-17 (Pilkonis et al., 2011). The item bank evaluates feelings of negativity (including sadness and guilt), perceptions of oneself (self-criticism, feelings of worthlessness), and social cognition (loneliness, interpersonal disconnection), alongside reduced

positive emotions and involvement (loss of interest, meaning, and purpose). The survey questions do not include somatic symptoms (such as changes in appetite and sleep patterns), thus avoiding potential interference when evaluating patients with coexisting physical conditions. This depression measure provides a universal assessment of depression experienced over the past seven days, without being specific to any particular disease. With eight items, the lowest achievable raw score is eight, while the highest attainable raw score is 40. A higher raw score suggests heightened levels of depression.

The PROMIS pediatric depression scale has demonstrated robust psychometric properties for assessing depressive symptoms in children and adolescents. Its content validity was established through comprehensive item development processes, including literature review, expert input, and cognitive interviews with children (Irwin et al., 2010). Construct validity has been supported by strong correlations with established measures such as the Children's Depression Inventory (CDI) (Varni et al., 2014). The scale consistently shows a unidimensional factor structure, aligning with its theoretical framework (Irwin et al., 2012). Reliability is evidenced by high internal consistency (Cronbach's alpha > 0.90) and good test-retest reliability (Intraclass Correlation Coefficient 0.78-0.85) (DeWitt et al., 2011; Quinn et al., 2014). In the current sample, the PROMIS pediatric depression scale had high internal consistency as well (Cronbach’s alpha = 0.88).

The scale's item response theory-based development allows for computerized adaptive testing and the creation of short forms, reducing respondent burden while maintaining measurement precision (Pilkonis et al., 2011). Yet, more research is needed on its sensitivity to change over time and its performance across diverse cultural and linguistic groups (Reeve et al., 2016). Despite these areas for future investigation, the PROMIS pediatric depression scale's

strong validity and reliability make it a valuable tool for both clinical and research applications in pediatric mental health.

BIMAS-2 – Behavior Intervention Monitoring Assessment System

The BIMAS-2 Teacher Rating Scale is a brief, standardized behavioral assessment tool used by educators to evaluate students' social, emotional, and behavioral functioning across areas such as conduct, negative affect, cognitive/attention, and positive affect (McDougal et al., 2011). The Negative Affect subscale, comprising seven items, evaluates symptoms of anxiety and depression through behavioral indicators such as social withdrawal, emotional dysregulation, and mood fluctuations. Responses are made on a 5-point Likert scale ranging from 0 (*Never*) to 4 (*Very Often*). Surveys were filled out by students' teachers and higher scores indicate better or more positive functioning, meaning that as scores increase, students have fewer symptoms or behavioral depictions related to anxiety and depression.

The BIMAS-2 manual reports adequate evidence of reliability and validity for the Negative Affect subscale. Internal consistency reliability coefficients for the Negative Affect subscale ranged from 0.77 to 0.90 across the teacher, parent, and student rater forms. Test-retest reliability coefficients over 2-4 weeks ranged from 0.79 to 0.90, indicating good temporal stability. The manual also provides evidence of convergent validity, with moderate to strong positive correlations between the Negative Affect subscale and measures of internalizing problems, such as the Conners Comprehensive Behavior Rating Scales. Overall, the psychometric properties of the Negative Affect subscale support its use as a reliable and valid measure of negative emotional and behavioral problems in children and adolescents (McDougal et al., 2011). Because the BIMAS-2 Negative Affect scale is a teacher report subscale of

combined anxiety and depression, this measure will be referred to as “teachers rating” throughout the remainder of this paper.

PBIS School Climate Survey: Elementary

This questionnaire gathers the opinions of elementary school students about the overall atmosphere at school within the framework of Positive Behavioral Interventions and Supports (Center on PBIS, 2022). The survey focuses on four main aspects: feeling connected to the school, safety, orderliness, and relationships with peers and adults. It consists of 11 questions, each rated on a scale from Never to Always. Typically, students in grades 3 to 5 complete the survey during school hours, using computers provided on campus and supervised by teachers or school staff. Higher scores indicate a more favorable perception of the school climate.

The PBIS School Climate Survey demonstrates good psychometric properties, supporting its use in research and practice. Content validity was established through expert review and alignment with PBIS principles (Algozzine et al., 2014). Construct validity is evidenced by its factor structure, which typically reveals distinct dimensions such as school connectedness, school safety, and school engagement (La Salle et al., 2018). The survey shows strong internal consistency reliability, with Cronbach's alpha coefficients generally exceeding 0.80 for most subscales (Nese et al., 2020). In the current sample, the PBIS School Climate Survey had lower internal consistency (Cronbach’s alpha = 0.69).

Test-retest reliability has been found to be adequate, indicating stability of measurements over time (Mitchell et al., 2018). The survey's concurrent validity is supported by correlations with other measures of school climate and student outcomes (La Salle et al., 2016). But, more research is needed on its sensitivity to change, particularly in response to PBIS interventions. Additionally, while the survey has been used across diverse populations, further studies on

measurement invariance across different demographic groups would strengthen its utility (Nese et al., 2020). Despite these areas for future research, the PBIS School Climate Survey provides a valuable, psychometrically sound tool for assessing and monitoring school climate in elementary settings.

Data Analysis

The statistical software *R* (R Core Team, 2024) was used for all quantitative analyses.

Missing Data

Multiple imputation using the mice package (v3.13.0; van Buuren & Groothuis-Oudshoorn, 2011) in R (RStudio Team, 2020) was used to recover missing information. Twenty multiple imputations were performed with 20 iterations per imputation. Convergence was assessed by visually inspecting trace plots of the mean and standard deviations of the imputed values across iterations. Fraction of Missing information (FMI) and the relative increase in variance due to nonresponse (RIV) are two measures of missing data information that were calculated for each model.

Model Specification

The moderation model was specified with ELL status as the independent variable (IV), school climate as the moderator (M), and anxiety, depression, and BIMAS-2 teacher ratings as the dependent variables (DVs). Separate models were tested for anxiety, depression, and BIMAS-2 teacher ratings.

Interaction Term

The interaction package in R studio automatically created and tested the interaction term between ELL status and perception of school climate. This statistical analysis determined the

degree to which the effect of ELL status on anxiety, depression, and BIMAS-2 teacher ratings were conditional upon the level of perceived school climate.

CHAPTER III: RESULTS

The statistical software *R* (R Core Team, 2024) was used for all quantitative analyses. Descriptive statistics (e.g., mean, standard deviation, and range) for all variables used in the study are summarized in Table 1.

Table 1
Descriptive Statistics

	ELL			Non-ELL		
Variable	*M*	*SD*	*Range*	*M*	*SD*	*Range*
Anxiety	19.86	6.81	7-36	17.41	7.25	7-35
Depression	18.98	7.99	7-35	18.35	8.34	7-26
School Climate	32.98	4.70	22-42	33.66	5.36	19-44
BIMAS-2 Teacher Ratings	54.64	13.07	40-76	55.95	13.67	40-79

Overall, 78 of the total 146 observations in the entire data set had missingness. There were no missing data for ELL status, but there was missing data for PROMIS anxiety, PROMIS depression, BIMAS-2 Negative Affect Teacher Rating Subscale, and PBIS school climate measures. The PROMIS anxiety measure, which consists of eight questions, showed relatively low levels of missing data, with each question having between 0.65% and 2.61% of responses missing. Similarly, the eight questions on the PROMIS depression measure had a consistent pattern of missingness, with each question containing between 0.65% and 1.96% missing data. The PBIS school climate measure, comprising 11 questions, exhibited slightly more variability in missing data, with percentages ranging from 1.31% to 5.23%. In contrast, the teacher ratings from the BIMAS-2 survey for Hispanic students stood out with a substantially higher proportion of missing data, with 50.7% of values not recorded for Hispanic students. In the overall data set from the ESSS project, there was about 35% missing BIMAS-2 data. In the overall data set, there was about three times more missing data on the BIMAS-2 in North Carolina than in South Carolina. But in this study's subset of the ESSS data, there is a higher percentage of missing data

for SC schools (67.4%) than NC schools (31.3%). In this study's data set, 68 out of the 146 total observations had complete data, and the most common pattern of missing data was missing data on teacher ratings and complete data on all other variables (n = 63). The second most common pattern of missing data was missing data on teacher ratings and the last question on the PBIS school climate survey and complete data on all other variables.

Table 2 presents a correlation matrix examining the relationships between anxiety, depression, perceptions of school climate, among non-LEP students. Anxiety and depression were strongly positively correlated, indicating that higher levels of anxiety are associated with higher levels of depression. Perceptions of school climate were negatively correlated with both anxiety and depression, suggesting that students who perceived their school climate more positively reported lower levels of these internalizing symptoms. Teacher ratings of negative affect were not correlated with anxiety, depression, or perceptions of school climate among LEP students in this data.

Table 3 presents a correlation matrix examining the relationships between anxiety, depression, perceptions of school climate, among LEP students. Anxiety and depression were strongly positively correlated, indicating that higher levels of anxiety are associated with higher levels of depression. Perceptions of school climate were not correlated with anxiety or depression, and teacher ratings of negative affect were not correlated with anxiety, depression, or perceptions of school climate among non-LEP students in this data.

Table 2
non-LEP Students: Correlation Matrix

Measure	1	2	3
1. Anxiety	___		
2. Depression	.75***	___	
3. Perceptions of School Climate	-.25*	-.33**	___
4. Negative Affect	.25	.12	.09

Note. * indicates p < .05. ** indicates p < .01 *** indicates p < .001

Table 3
LEP Students: Correlation Matrix

Measure	1	2	3
1. Anxiety	___		
2. Depression	.64***	___	
3. Perceptions of School Climate	-.02	-.18	___
4. Negative Affect	.16	.17	.003

Note. * indicates p < .05. ** indicates p < .01 *** indicates p < .001

Anxiety

Using simple linear regression, anxiety was predicted by LEP status. In this model, LEP status significantly predicted anxiety, with those who were LEP students having on average 2.5 points higher on the anxiety scale than those were non-LEP status (b = 2.59, SE = 1.15, p = 0.039). A moderation test was run with ELL status as the predictor, anxiety as the outcome, and school climate as the moderator. There was a significant main effect found between ELL status and anxiety controlling for perception of school climate, and ELL students had higher anxiety

scores compared to non-ELL students. In this model, ELL status and perceptions of school climate explained 6% of the variance in anxiety, $R^2 = 0.06$, $F(2, 146.88) = 4.34$, $p = .015$, *95% CI* [0.01, 0.15], *FMI* = 0.02, *RIV* = 0.04. The fraction of missing data (FMI) and relative increase in variance (RIV) values being low indicates that missing data had minimal impact on parameter estimates and standard errors. Regression results for the main effect model can be found in Table 3.

The results were non-significant for the interaction of perception of school climate on the relationship between ELL status and anxiety. In other words, the relationship between ELL status and anxiety does not appear to depend on one's perception of school climate. Regression results for the moderation model can be found in Table 5. The change in R^2 between the main effects model and the interaction model was inconclusive, $\Delta R^2 = 0.016$, $F(1, 138.7) = 2.28$, $p = 0.134$, *RIV* = 0.07.

Table 4
Main Effect Model Predicting Anxiety

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	24.67	4.05	<.001	0.06	0.07
ELL Status	2.59	1.15	.039	0.01	0.02
Perception of School Climate	-0.36	0.12	.052	0.07	0.08

Table 5
Moderation Model Predicting Anxiety

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	29.99	4.98	<.001	0.001	0.015
ELL Status	-10.4	8.03	.198	0.066	0.076
Perception of School Climate	-0.37	0.15	.012	0.001	0.015
ELL Status: Perception of School Climate	0.38	0.24	.134	0.072	0.081

Depression

Using simple linear regression, depression was predicted by LEP status. In this model, LEP status did not predict depression any greater than chance (b = 0.64, SE = 1.34, p = 0.646). A moderation test was run with ELL status as the predictor, depression as the outcome, and school climate as the moderator. The main effect between ELL status and depression controlling for perception of school climate was non-significant; regression results for the main effect model can be found in Table 6. In this model, ELL status and perceptions of school climate explained 7% of the variance in depression, R^2 = 0.07, F(2, 146.88) = 4.34, p = .015, *95% CI* [0.01, 0.17], *FMI* = 0.06, *RIV* = 0.04. The fraction of missing data (FMI) and relative increase in variance (RIV) values being low indicates that missing data had minimal impact on parameter estimates and standard errors.

There was a non-significant interaction found by perception of school climate on the relationship between ELL status and depression. In other words, the relationship between ELL status and depression did not appear to depend on one's perception of school climate. Regression results for the moderation model can be found in Table 7. The change in R^2 between the main effects model and the interaction model was inconclusive, ΔR^2= 0.006, F(1, 135.8) = 0.81, p = .369, *RIV* = 0.09.

Table 6
Main Effect Model Predicting Depression

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	32.28	04.66	<.001	0.069	0.078
ELL Status	0.43	1.31	.756	0.007	0.021
Perception of School Climate	-0.41	0.14	.002	0.07	0.081

Table 7
Moderation Model Predicting Depression

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	36.09	5.71	<.001	0.001	0.014
ELL Status	-8.72	9.30	.398	0.083	0.090
Perception of School Climate	-0.52	0.17	.002	0.001	0.014
ELL Status: Perception of School Climate	0.28	0.28	.369	0.087	0.094

Teacher Ratings

A moderation test was run with ELL status as the predictor, teacher ratings as the outcome, and school climate as the moderator. There was a non-significant main effect found between ELL status and teacher ratings controlling for perception of school climate. In this model, ELL status and perceptions of school climate explained 0.73% of the variance in teacher ratings, $R^2 = 0.0073$, $F(2, 102.19) = 0.21$, $p = .812$, *95% CI* [0.009, 0.068], $FMI = 0.23$, $RIV = 0.42$. The fraction of missing data (FMI) and relative increase in variance (RIV) values being higher indicates that parameter estimates and standard errors were impacted by missing data, resulting in more uncertainty in parameters estimates and larger standard errors than would be observed in complete data. Using multiple imputation to hand missing data provides the best, most powerful estimates of parameters with large amounts of missing data. Regression results for the main effect model can be found in Table 8. The teacher rating for a non-ELL student with an average perception of school climate is 56.36. The teacher rating for an ELL student with an average perception of school climate is 57.95.

There was a non-significant interaction found by perception of school climate on the relationship between ELL status and teacher ratings. In other words, the relationship between ELL status and teacher ratings does not depend on one's perception of school climate. Regression results for the moderation model can be found in Table 9. The change in R^2 between

the main effects model and the interaction model was inconclusive, $\Delta R^2 = 0.008$, $F(1, 47.93) = 0.36$, $p = .551$, $RIV = 0.71$.

Table 8
Main Effects Model Predicting Teacher Ratings

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	52.36	9.16	<.001	0.299	0.248
ELL Status	-1.60	2.52	.624	0.501	0.354
Perception of School Climate	0.12	0.27	.707	0.337	0.269

Table 9
Moderation Model Predicting Teacher Ratings

Predictor	*b*	*SE*	*p*	*RIV*	*FMI*
(Intercept)	49.8	12.04	<.001	0.259	0.222
ELL Status	4.55	18.97	.596	0.657	0.419
Perception of School Climate	0.19	0.36	.464	0.299	0.248
ELL Status: Perception of School Climate	-0.19	0.57	.551	0.715	0.439

CHAPTER IV: DISCUSSION

This study examined the relationships between English Language Learner (ELL) status, school climate perceptions, and mental health outcomes among Hispanic elementary school students. The findings provide important insights into the complexities of these relationships while both supporting and challenging existing literature. Below, I highlight the importance of these findings and their implications for educational practice and policy, particularly in enhancing support services for Hispanic ELL students.

The present study examined the relationships among English Language Learner (ELL) status, perceptions of school climate, anxiety, and depression in a population of Hispanic students. Specifically, it sought to determine whether ELL status was associated with higher levels of anxiety and depression, and whether school climate moderated the relationship between ELL status and anxiety and depression. The findings provide important insights into the complex interplay of these variables and their implications for supporting Hispanic students' mental health in schools.

Anxiety

ELL Status and Anxiety

The present study found that ELL status was significantly associated with higher self-reported anxiety levels, even when accounting for perceptions of school climate. These findings suggest that ELL students may experiences unique stressors – such as language barriers, cultural differences, or acculturative stress – that contribute to elevated anxiety levels. The fact that these differences persisted, even after adjusting for school climate, suggests targeted supports for ELL students may be needed beyond general school climate improvements.

Interaction Between School Climate, ELL Status, and Anxiety

The analysis also found that the interaction between perceptions of school climate and ELL status was inconclusive in predicting anxiety. In other words, school climate does not seem to buffer the anxiety experienced by ELL students in a meaningful or consistent way. This suggests that while a positive school climate is undoubtedly valuable, it might not be sufficient to directly reduce anxiety disparities related to ELL status. The challenges associated with being an ELL student, such as language barriers and acculturative stress, may have a more direct impact on anxiety (Lueck & Wilson, 2011; Yough et al., 2023). These results reinforce the idea that anxiety in ELL students may be influenced more directly by factors other than the school climate alone, such as factors related to acculturative stress

Post-Hoc Interpretation: Perceptions of School Climate and Anxiety

Initial analyses revealed a modest but significant negative correlation between perceptions of school climate and anxiety for ELL students, suggesting that more favorable perceptions of school climate are associated with lower anxiety levels ($r = -.25$, $p = .028$). For non-ELL students, perceptions of school climate and anxiety were not significantly correlated ($r= -.02$, $p = .849$)

A simple linear regression demonstrated that school climate significantly predicted anxiety in the expected direction ($b = -0.24$, $p = .043$). However, when ELL status was included as a covariate in the model, the predictive power of school climate on anxiety decreased ($b = -0.36$, $p = .052$). This result suggests that while school climate is related to anxiety at a general level, its effect becomes less robust once ELL status is taken into account. One interpretation of these results is reinforcing the notion that the anxiety experienced by ELL students may be influenced more by acculturative stressors like language acquisition and cultural adaptation.

Consequently, while school climate remains an important contextual factor, it may not be a strong or consistent predictor of anxiety for Hispanic ELL students.

Although there is no evidence that school climate predicts anxiety when controlling for ELL status in this data set, this does not mean that the relationship between school climate and anxiety is non-existent. Instead, these results may suggest that school climate is not the sole nor strongest predictor of anxiety among ELL students. Regardless of school climate, students with language barriers may experience heightened anxiety compared to their non-ELL peers. Several factors identified in the literature may be contributing to this heightened anxiety, including language barriers and associated challenges in academic and social situations; experiences of social isolation and exclusion (White et al., 2023); the psychological impact of English-language immersion (Parra, 2014); and heightened acculturative stress due to navigating multiple cultural contexts (Castro-Olivo, 2014).

Implications for Anxiety

These findings have several crucial implications for educational practice and policy. First, the study reinforces the need for targeted interventions for Hispanic ELL students that address their unique stressors (Castro-Olivo, 2014). Schools should implement culturally responsive mental health services, such as bilingual counselors and support groups (Rodríguez & Smith, 2020), to address their specific challenges. Additionally, efforts to improve school climate should be tailored to meet the needs of diverse student populations (White et al., 2023). Moreover, school climate measures may need to be more nuanced to capture the specific experiences of Hispanic and ELL students. Assessments of school climate should consider factors such as inclusivity, cultural responsiveness, and support for heritage languages (La Salle, McIntosh, & Eliason, 2018; Romero & O'Malley, 2020). Finally, it is essential to acknowledge

the broader systemic factors that affect the mental health of Hispanic ELL students. Schools can collaborate with community organizations to provide holistic support to families facing challenges related to immigration, socioeconomic status, and access to resources (McCord et al., 2019; McSorley & Bacong, 2023; Pumariega et al., 2022).

Depression

ELL Status and Depression

The present study found the English Language Learner (ELL) status did not appear to influence depression levels in this sample, even when accounting for perceptions of school climate. This suggests that the mental health challenges experienced by ELL students may be more specific to anxiety- possibly due to acculturative stressors like language barriers or cultural adjustment- rather than general depressive symptoms.

Interaction Between School Climate, ELL Status, and Depression

The analysis found that the interaction between perceptions of school climate and ELL status was inconclusive in predicting depression. In other words, the relationship between ELL status and depression does not appear to depend on how students perceive their school climate. These results suggest that while school climate might independently impact depression, there's no clear evidence that ELL status and school climate interact in a way that influences depression outcomes more than either factor alone. These results might also suggest that school climate is measured in such a way that does not capture the full essence of school climate as perceived by Hispanic ELL students.

Post-Hoc Analysis: Perceptions of School Climate and Depression

The inconclusive relationship between ELL status and depression and the unclear moderating role of school climate prompted post-hoc analyses to further explore these

relationships. Perceptions of school climate were significantly negatively correlated with depression ($r = -0.26$, $p = .002$), and a simple linear regression analysis confirmed that higher perceived school climate predicted lower depression ($b = -0.42$, SE.= 0.13, $p = .002$), and this relationship remained significant when controlling for ELL status ($b = -0.41$, $p = .002$). These findings suggest that school climate is a critical factor in protecting against depression among Hispanic middle-school students, regardless of whether a student is an ELL or not. Unlike anxiety, where ELL status played a stronger role, depression appears more strongly influenced by students' overall perceptions of their school environment. This points to the importance of fostering a supportive, inclusive, and positive school climate as a universal strategy to decrease depressive symptoms among Hispanic middle schoolers.

Implications for Depression

The inconclusive main effect between ELL status and depression when controlling for perceptions of school climate implies that focusing on ELL status might not be as effective in understanding or addressing depression among Hispanic students; instead, the school climate may be a more important factor to consider. Because a positive school climate perception significantly reduces depression, enhancing school climate might be a priority (Mitchell, Hatton, & Lewis, 2018). Given the results of this study specifically, school climate leaders can be confident that fostering a positive environment benefits all students, including Hispanic students. Furthermore, given the inconclusive interaction between school climate and ELL status, addressing these factors separately may be more effective than trying to identify a combined influence. In summary, these results highlight school climate as a key factor in reducing depression among school-aged students, suggesting that ELL status alone is not a significant

predictor when school climate is considered. Therefore, school climate interventions may be an effective approach to addressing depression symptoms in Hispanic students.

BIMAS-2 Teacher Ratings

Teacher Ratings

The analysis of teacher ratings of anxiety and depression yielded inconclusive main effects and interactions. This unexpected finding may be attributed to the high proportion of missing data for this measure (50.7%), the use of teacher ratings rather than self-report, or the possibility that teacher ratings, as measured by the BIMAS-2, may capture different aspects of emotional functioning than the self-reported anxiety and depression measures.

Post-Hoc Analysis: ELL status and Perceptions of School Climate

A post-hoc analysis was conducted to explore the relationship between ELL status and perceptions of school climate. Using simple linear regression, the analysis found that ELL status did not significantly predict students' perceptions of their school climate ($b = 0.01$, $SE = 0.83$, $p = .434$). This result suggests that, in this sample, Hispanic ELL students reported perceptions of school climate that were similar to those of their non-ELL peers.

The lack of a significant relationship between ELL status and school climate perceptions is noteworthy, as it challenges the assumption that ELL students, due to their unique linguistic and cultural experiences, might perceive the school environment differently from non-ELL students. Previous research has suggested that ELL students may face challenges such as language barriers, social isolation, or cultural differences, which could influence their perceptions of the school climate (White et al., 2023; Yough et al., 2023). However, the results of this analysis imply that, at least in this study, these factors may not have been strong enough to differentiate how ELL students view their school environment compared to non-ELL students.

Literature Contributions

This study contributes to the literature in several key areas, particularly in understanding the mental health challenges faced by Hispanic English Language Learner (ELL) students and the role of school climate in supporting their well-being. First, this study expands on existing research by exploring the relationship between ELL status and mental health outcomes, specifically anxiety and depression, within a Hispanic elementary school population. The findings suggest that ELL status is significantly associated with higher levels of self-reported anxiety, providing further evidence of the unique stressors faced by ELL students, such as language barriers and acculturative stress. This supports prior studies that highlight the psychological impact of navigating multiple cultural contexts plus language barriers (Lueck & Wilson, 2011; Yough et al., 2023).

Second, the study provides insight into the complexities of the role school climate plays in moderating mental health outcomes for Hispanic ELL students. While perceptions of school climate were not found to significantly buffer anxiety for ELL students, the study underscores the importance of school climate as a protective factor against depression, in line with previous research (Mitchell et al., 2018). These findings highlight the need for a more nuanced understanding of how different aspects of school climate, such as inclusivity and cultural responsiveness, may influence mental health in diverse student populations.

Additionally, the study's findings contribute to the growing body of literature on the intersectionality of ELL status, school climate, and mental health by challenging the assumption that positive school climate universally decreases anxiety and depression among students. This study’s inconclusive results regarding the interaction between school climate and ELL status in

predicting anxiety suggest that other factors, such as acculturative stress, may play a more direct role in symptoms of anxiety among ELL students.

Lastly, this research contributes to the field by suggesting that ELL status may not significantly influence perceptions of school climate in the way that previous studies have posited. This calls for further exploration of the specific factors that shape school climate perceptions among ELL students and highlights the need for more targeted interventions in schools to address the unique challenges faced by this group.

In summary, this study adds to the understanding of mental health outcomes in Hispanic ELL students, highlighting the need for tailored, culturally responsive support systems in schools. It also challenges existing assumptions about the interactions between ELL status, school climate, and mental health, providing a foundation for future research in this area.

Practical Implications

The findings of this study underscore the need for targeted interventions and policy considerations to better support Hispanic ELL students in schools. Given the link between ELL status and anxiety, schools may consider implementing structured language support programs that reduce the stress associated with language barriers. Such language support programs may include bilingual education models, peer mentoring programs, and culturally responsive pedagogy. The elevated anxiety levels among ELL students suggest a need for increased access to school-based mental health services that are linguistically and culturally competent. Schools may consider integrating mental health screenings tailored for ELL students and employ bilingual school psychologists or counselors. Although school climate perception significantly impacted depression levels, it did not moderate the relationship between ELL status and mental health outcomes. Therefore, school leadership may consider focusing on improving climate in

ways that specifically benefit ELL students, such as anti-bullying programs targeting linguistic discrimination, fostering stronger teacher-student relationships, and increasing parental engagement. To reduce the social isolation that contributes to anxiety, schools can create structured opportunities for ELL students to engage with non-ELL peers. Some structured opportunities might include extracurricular activities, cooperative learning strategies, and social-emotional learning (SEL) programs tailored to diverse linguistic backgrounds.

Limitations and Future Research Directions

Several limitations are considered when interpreting these findings. Regarding sample characteristics, the study focused on elementary school students in specific geographic regions, and results may not generalize to other age groups or regions. Additionally, a larger sample size would aid in detecting smaller moderating effects. Measurement issues included a high proportion of missing data for teacher ratings, potential cultural and linguistic barriers in assessment tools, and reliance on self-report measures for most outcomes. Design limitations included the cross-sectional nature of the data which limits causal inferences, inability to account for length of time in ELL programs, and no measure of acculturation level or immigration status. The directionality of the model may also be problematic; instead of school climate moderating anxiety and depression, it is possible that anxiety and depression actually predict perceptions of school climate, which warrants further exploration.

It is important than future research explores the longitudinal relationships between ELL status, school climate, and mental health, incorporating measures of acculturation and time spent in ELL programs. Understanding these relationships over time will provide a clearer picture of how these factors interact and evolve. Investigating protective factors that could explain the lack of depression differences is also crucial, as it could identify strengths that buffer against mental

health challenges in ELL students. Validating culturally and linguistically appropriate assessment tools is essential to ensure accurate measurement and understanding of mental health in diverse populations. Additionally, exploring the role of family and community factors in moderating these relationships could shed light on the broader support systems that influence ELL students' mental health and help inform more effective interventions.

Conclusion

This study provides valuable insights into the mental health experiences of Hispanic elementary school students, emphasizing the differential impact of school climate on anxiety and depression. While a positive school climate significantly reduces depression, it does not predict or mitigate anxiety among Hispanic students, suggesting that external factors play a more dominant role in anxiety outcomes. Additionally, the study highlights the significant disparity in anxiety levels between ELL and non-ELL Hispanic students, reinforcing the need for interventions that specifically address the heightened anxiety experienced by Hispanic ELL students.

These findings challenge prior assumptions about the universal protective effects of school climate and call for targeted interventions that address both school-based and systemic stressors. In practice, educators and policymakers need to focus on enhancing school climate while simultaneously implementing targeted mental health interventions that address the unique needs of Hispanic ELL students. Future research must further investigate the broader systemic influences contributing to anxiety among ELL students and refine theoretical models to better capture the complex interplay between school climate, language status, and mental health. By adopting a comprehensive and culturally responsive approach, schools can better support the well-being of Hispanic students and reduce mental health disparities in educational settings.

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APPENDIX: IRB LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
rede.ecu.edu/umcirb/

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Brandon Schultz
CC:
Date: 12/17/2021
Re: UMCIRB 21-001728
Efficacy of the Interconnected Systems Framework

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) occurred on 12/17/2021. The research study is eligible for review under expedited categories # 5 & 7. The Chairperson (or designee) deemed this study no more than minimal risk.

As the Principal Investigator you are explicitly responsible for the conduct of all aspects of this study and must adhere to all reporting requirements for the study. Your responsibilities include but are not limited to:

1. Ensuring changes to the approved research (including the UMCIRB approved consent document) are initiated only after UMCIRB review and approval except when necessary to eliminate an apparent immediate hazard to the participant. All changes (e.g. a change in procedure, number of participants, personnel, study locations, new recruitment materials, study instruments, etc.) must be prospectively reviewed and approved by the UMCIRB before they are implemented;

2. Where informed consent has not been waived by the UMCIRB, ensuring that only valid versions of the UMCIRB approved, date-stamped informed consent document(s) are used for obtaining informed consent (consent documents with the IRB approval date stamp are found under the Documents tab in the ePIRATE study workspace);

3. Promptly reporting to the UMCIRB all unanticipated problems involving risks to participants and others;

4. Submission of a final report application to the UMICRB prior to the expected end date provided in the IRB application in order to document human research activity has ended and to provide a timepoint in which to base document retention; and

5. Submission of an amendment to extend the expected end date if the study is not expected to be completed by that date. The amendment should be submitted 30 days prior to the UMCIRB approved expected end date or as soon as the Investigator is aware that the study will not be completed by that date.