Trans Youth Community Climate Index:

Developing an Indicator of Community Support Within California Cities

By

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**Abstract**

Community climate, defined as the degree of support or safety within a community, has implications for transgender and non-binary youth mental health outcomes. To assess the variation of community climate across California, this paper developed a Community Climate Index measuring structural stigma and transphobia at the unit of incorporated city, constructing this index using eight indicators of climate supportive of transgender and non-binary youth. Principal Components Analysis was used to create a single index representing the variance of climate indicators and high-climate and low-climate communities were defined as those within the highest and lowest quartile of California incorporated cities, respectively. Exploration of communities by climate category discovered that on average, low-climate communities are more likely to have a lower median household income and population than high-climate communities. Communities in rural/micropolitan counties and in regions such as inland Northern California and the San Joaquin Valley were significantly more likely to rank low on the Community Climate Index. Using data on non-binary youth mental health outcomes from the California Healthy Kids Survey, averages for school-district level outcomes by community climate category demonstrated that non-binary youth across 7th, 9th, and 11th grades reported poorer mental health outcomes in low-climate districts compared to their counterparts in high-climate districts, especially symptoms of depression and suicidality. Results of this study demonstrate unique characteristics of cities exhibiting poor community climate for transgender and non-binary youth, and the development of a climate index specific to structural and societal transphobia gives precedent for other measures of transgender-specific community climate in other settings.

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**Chapter 1: Introduction**

Community climate refers to the degree of support or safety within the community context for lesbian, gay, bisexual, transgender, and queer (LGBTQ+) residents (Oswald et al., 2010). Climate can be comprised by several indicators: political affiliation, presence of LGBTQ+ community resources, concentration of LGBTQ+ residents, and other indicators typically revolving around symbolism reflecting LGBTQ+ affirmation and socio-political climate (Gower et al., 2019; Hatzenbuehler, 2011; Oswald et al., 2010; Oswald et al., 2018). Community climate indices or measures are used by nonprofits and include the Human Rights Commission’s index to hold city governments accountable or Out Leadership’s State LGBTQ+ Business Climate Index to demonstrate economic cost of discrimination and inequality. Measures of community climate have further application in LGBTQ+ health research. Community climate indices have been used to explore the role of community context as it relates to LGBTQ+ rates of substance use (Hatzenbuehler, 2014), suicidality (Hatzenbuehler, 2011), mental health (Duncan et al., 2014; Perales & Todd, 2018), and life satisfaction (Bränstrom and Pachankis, 2022) among LGBTQ+ populations. Concepts of community climate within research stem from Meyer’s (2003) Minority Stress Theory and theories of structural stigma (Hatzenbuehler et al., 2010; Hatzenbuehler et al., 2012), both of which aim to draw connections between environmental context and poor health outcomes among LGBTQ+ populations.

However, research on community climate, structural stigma, and LGBTQ+ health often revolves around lesbian, gay, and bisexual (LGB) individuals (e.g., Hatzenbuehler et al., 2012; Lick et al., 2012), creating a gap in our understanding of how community context impacts the health of transgender and non-binary (TNB) populations. Within those studies that do address trans health or LGBTQ+ health as a whole, only a handful of studies use measures of structural transphobia to measure community climate and may use indicators of LGB visibility and safety as measures in studies on transgender health (Perez-Brumer et al., 2015). This gap in the literature is concerning, as attacks on transgender rights in the United States have increased in recent years (Movement Advancement Project (MAP), 2023). Legislation and policy focusing on TNB youth gender affirming limiting healthcare, bathroom facility access, and participation in youth sports has been particularly concerning (MAP, 2023). While California’s state-level climate is favorable towards TNB youth (MAP, 2023), there is still considerable public discourse and political contestation of trans youth rights at the city level (Cormaci & Nguyen, 2023; Ebrahimji & Mossburg, 2023; Horseman, 2023).

TNB youth face poorer mental health outcomes than their cisgender LGB peers (Day et al., 2017; The Trevor Project, 2022). They are at considerably high suicide risk - according to the Trevor Project’s 2022 National Survey on LGBTQ Mental Health, approximately half of transgender girls (48%), boys (59%), and non-binary youth (53%) reported that they had considered suicide in the past year. Across gender identity, TNB youth also reported high rates of anxiety (71-79%) and depression related symptoms (60-69%) (The Trevor Project, 2022). Emotional distress in transgender youth has been connected to gender expression inconsistent with gender identity (Gower et al., 2018a; Chodzen et al., 2019). Hypervigilance for potential discrimination (Johns et al., 2021) or violence and internalized transphobia (Chodzen et al., 2019, Katz-Wise et al., 2021) also lead to poor health outcomes in TNB youth. TNB youth also face higher rates of discrimination and violence related to gender identity and expression (Gower et al., 2022), which in turn relate to poor health outcomes (Park et al., 2022). In addition, TNB youth are more likely to experience homelessness, often in more precarious unhoused situations than non-LGBTQ+ youth in similar conditions (Deal et al., 2023). These unique stressors are underexplored in community climate literature, as few indices address the needs of transgender population health specifically (e.g., Hatzenbuehler et al., 2012; Lick et al., 2012; Oswald et al., 2010), creating a need for new indicators of TNB-specific community climate.

This study aims to identify how structural and societal transphobia varies across space within California, characteristics of communities that may be unsafe or unsupportive to TNB youth, and how the concentration of communities with poor community climate may create TNB youth health disparities. In the following section, I conducted a literature review of theories and models of structural transphobia and spatial variation in LGBTQ+ health. This study pulls from transgender studies, Meyer’s minority stress model, and concepts of structural stigma; it also is, in part, a response to the current political attacks on transgender youth and persistent mental health disparities among TNB youth. I constructed a TNB Youth Community Climate Index using eight indicators representing community climate: votes for U.S. Presidential candidate Donald Trump in 2020, city/county recognition of pride month, ratio of informed consent hormone replacement therapy (HRT) clinics to city population, LGBTQ+ political representation, presence of pride month celebration, presence of households led by same-sex partnerships, and ratio of LGBTQ+ youth services, and pediatric gender clinics. Variables were used to create an index using Principal Components Analysis (PCA). Using this measure of TNB Community Climate, I assess characteristics of incorporated cities by climate category, noting city population and identifying regions of California with a higher concentration of low- and high-climate communities. I also explore differences in non-binary student health outcomes at the district level by climate, aiming to demonstrate the utility of a TNB Youth Community Climate Index and exploring the relationship between community climate and social emotional health outcomes. Within the final chapter of this study, I discuss the importance of measuring community climate specific to TNB youth, a vulnerable population whose health disparities across space are underexplored in the literature. Through this study, I hope to create new tools for understanding how the community context shapes TNB youth health outcomes and put forth a call to action for researchers, community stakeholders, and policymakers to address these spatial disparities in TNB youth wellbeing.

**Chapter 2: Literature Review**

Transgender individuals face unique stressors that impact health (Hendricks & Testa, 2012), necessitating an approach to transgender health research that centers structural transphobia in all its forms. Both literature within transgender studies and in greater LGBTQ+ health studies connect oppression and poor health outcomes among transgender populations; however, this is not reflected in LGBTQ+ community climate literature, which often centers cisgender experiences and disregards the dimensions of transgender-specific healthcare access and an increasingly discriminatory political environment and how they might create transgender health disparities across space. This literature review explores theory from the field of transgender studies and surveys the current conditions facing TNB youth in the United States, including political attacks on TNB youth autonomy and poor health outcomes among this vulnerable population. Through an assessment of theoretical models connecting community context to LGBTQ+ health and existing LGBTQ+ community climate literature, this literature review demonstrates a need for a TNB youth specific measure of community climate and grounds the ensuing TNB Youth Community Climate Index in relevant theory and health research.

**Terminology**

Within sexual and gender minority health research, there are a wide variety of terms used to define identities (Eliason, 2014). This creates challenges for research, as terminology is not standardized; however, closed categories of gender identities do not reflect the variation of experiences across cultures and generations (Eliason, 2014). For the purpose of this study, the following identity and medical terminology are defined for clarity; TNB youth are grouped to form one broad category representing youth that do not identify with the sex assigned at birth.

**Table 1.**

LGBTQ+ and Medical Terminology

|  |  |
| --- | --- |
| **LGBTQ+:** | Stands for Lesbian, Gay, Bisexual, Transgender, and Queer. This acronym serves as an umbrella term for a range of marginalized sexual orientation and gender identities. Because there is no perfect way to encompass the diversity of experiences within this acronym, it is often written as LGBTQ+, the + representing limitless identities. |
| **Gay/Lesbian:** | A person who is attracted to their same gender. Lesbian often denotes a woman who is attracted to another woman. |
| **Bisexual:** | A person who is attracted to two or more genders. |
| **Queer:** | An umbrella term used to capture a large array of marginalized sexual orientation and gender identities. |
| **Trans/Transgender:** | Individuals whose gender identities do not reflect their gender category assigned at birth. Within discussions on assigned gender, the terms Assigned Female at Birth (AFAB) and Assigned Male At Birth (AMAB) are often used. Trans is often used as an umbrella term for all individuals whose gender identity reflects gender variance. |
| **Non-binary:** | Individuals who identify outside of a gender binary of “man” or “woman,” and may identify with both, neither, or outside of these categories of gender altogether. |
| **Cisgender:** | Individuals identifying with the gender category assigned at birth. |
| **TNB:** | For the purpose of this study, TNB is used to denote trans and non-binary individuals as a whole, consolidating groups by marginalized gender identity. Trans health research often explores non-binary health as part of broader studies on individuals that are not cisgender. |
| **Gender Non-Conforming:** | Term relating to identity and/or gender expression outside of a cisnormative concept of gender. This term is often used to describe a variety of youth identities and experiences that includes questioning and explorative relationships to gender. |
| **Cisnormativity:** | The societal assumption that all individuals are cisgender, and the creation of cisgender identity as ‘normal.’ |
| **Transphobia:** | Systemic and interpersonal discrimination towards trans and gender nonconforming individuals, including experiences of harassment, cisnormativity, and political marginalization and subjugation of trans individuals. |
| **Gender Affirmation:** | “Gender affirmation refers to the process of recognizing or affirming TGD people in their gender identity—whether socially, medically, legally, behaviorally, or some combination of these.” (Coleman et al., 2022, pp. S12). Gender affirmation may not necessarily mean transition related care, as transition related care may not necessarily be trans-competent (Coleman et al., 2022). Within this study, gender affirming care refers to healthcare settings that are inclusive and supportive of TNB youth. This includes practitioners or clinics offering medical interventions such as puberty blockers or hormone replacement therapy that serve to facilitate congruence of gender identity for adolescents. |
| **Puberty Blockers:** | Also called a gonadotropin-releasing hormone agonist (GnRHA), puberty blockers suppress the progression of puberty and development of secondary-sex characteristics in adolescents (Carswell et al., 2022). |
| **Hormone Replacement Therapy:** | Also referred to as Gender Affirming Hormone Therapy (GAHT), hormone replacement therapy (HRT) includes the use of hormones (typically estradiol, testosterone, androgen-blocking hormones) to achieve changes consistent with gender identity (Coleman et al., 2022). |
| **Pediatric Gender Care:** | Reference to gender affirming or transition related care for youth and adolescents. Medical intervention is often not taken until early puberty for puberty blockers and around 16 years of age for HRT, although standards of care have changed in addressing youth experiencing severe distress (Carswell et al., 2022). |
| LGBTQ+ terminology was developed in reference to Human Rights Commissions Glossary of Terms (HRC Foundation) and LGBTQ+ Primary Hub. | |

**Systemic Transphobia and Impact on Youth Wellbeing**

***Transgender Public Health***

Leslie Feinberg’s (1992) pamphlet *Transgender liberation: A movement whose time has come* forms a foundation for transgender studies, connecting a history of the suppression of “transgendered men and women'' or gender variance to the struggle between classes, relating transphobia to feudalism, capitalism, and colonialism. As Feinberg elaborates in hir work, suppression and violence against transgender individuals is woven into the fabric of society. Feinberg (1992) stated that even while women gained greater autonomy as they began to participate in the workforce and gained access to contraceptives, transgender Americans continued to face violence, discrimination in the workforce, and denial of healthcare, institutional oppression that is a function of the “divide-and-conquer tactics” created by the ruling class. While transgender concerns are sometimes addressed through queer theory, Stryker (2004) places transgender studies in contrast with queer theory, naming the field its “evil twin.” While there is certainly space to assess transphobia and trans liberation within queer theory, Stryker (2004) notes that often queer theory is synonymous with gay or lesbian studies and analyzes trans struggles through this framework. Transgender studies presents an appropriate starting point to assess the role of ecological context on transgender youth health and community context- not only does it foreground the experiences of trans and gender variant folks, but it also frequently discusses the pathologization of transness and the creation of transgender imaginaries through our health system (Singer, 2015). LGBTQ+ health as a study began with the inclusion of homosexuality into broader studies of mental illness, and while this medical view of deviance drifted from the prevailing view as a moral failing, the criminalization of homosexuality was often paired with medical interventions such as chemical castration and electroconvulsive therapy (Shapiro & Powell, 2017). However, the modern field of LGBTQ+ public health and many of the health initiatives and organizations of today were founded during the AIDS epidemic (Shapiro & Powell, 2017).

These concepts of the influence of systemic and political oppression of LGBTQ+ health call back to Foucault’s (1990) concept of biopolitics, a process of regulation focusing on the political management of biological processes - birth, death, and production. Within the framework of biopower, Stryker (2014) states that these mechanisms create new pathologized categories of transness to be managed, surveilled, and divided by the state into desirable and undesirable. Shapiro and Powell’s (2017) account of the development of these categories noted that in the late 19th century, gender variance was linked to sexual orientation. While gender variance has a long history across time and cultures (Feinberg, 1992), the development of subcultures in major cities within the United States allowed scientists to create a framework of gender that was then used to enforce binary medical categories of gender variance (Shapiro & Powell, 2017). This history can be seen within the terminology itself - ‘transvestite’ and ‘transsexual’ were coined by German physician and sexologist Magnus Hirschfeld, and ‘transgenderism’ found wider use within medical and academic journals before its use as the umbrella term its used as now in the 1990s (Carswell et al., 2022).

Non-binary trans patients often have additional difficulties navigating these pathologized ideals of transness - there is additional difficulty in obtaining approval for transition healthcare based on antiquated standards of care that enforce normative experiences of transgender individuals (MacKinnon, 2018). Many trans justice advocates call for a framework of depathologization, which questions the diagnosis of gender transition as a mental disorder, often resulting in limited autonomy for trans healthcare patients, and looks to reimagine transition as human rights in healthcare, policy, and the academy (Suess et al., 2014). This pathologization of identity is especially salient for understanding the environment that today’s TNB adolescents grow up in, as common explanations of gender variance in youth are often connected to mental health, disability, social contagion, or parental influence (Elster, 2022). Gender affirming care for youth is compared to castration or body mutilation, often pathologizing youth gender variance by removing the child’s autonomy (Elster, 2022). Lennon and Mistler (2014) go beyond concepts of culturally rooted transphobia and expand on the term ‘cisgenderism,’ denoting systemic ideologies that pathologize or deny the existence of gender that does not align with sex assigned at birth. Cisgenderism is pervasive throughout society, creating hierarchies that justify discrimination and violence (Lennon & Mistler, 2014). These systems of power persist today, and this removal of the autonomy of transgender youth and families is apparent in legislation and policy enacted within the last few years.

***Socio-political Climate and Non-binary Youth***

The rights of TNB youth have been visibly contested in the public sphere recently, including youth rights to use the bathroom congruent to their gender identity (Stolberg, 2017), access gender-affirming care for minors (Demillo, 2023), or participate in school sports programs (Freking, 2023). Movement Advancement Project (MAP) tracks over 50 LGBTQ+ laws and policies and creates a score for each state. As of July 1st, 2023, MAP has identified 20 states as having a negative gender identity policy tally, meaning that these states may have limited protections for transgender residents, bans on non-discrimination laws at the city or county level, “Don’t Say Gay'' laws, limited coverage for gender-affirming healthcare, etc. Approximately one-third of the United States’ LGBTQ+ population resides in a state that MAP defines as having a politically unwelcome climate to transgender individuals (MAP, 2023a). The political climate for restrictions on the wellbeing on TNB youth is more severe. Between 2020 and July 1st, 2023, 22 states banned participation in sports activities congruent to gender identity; since 2021, 10 states have banned bathroom usage congruent to gender identity; and since 2022, 10 states have enacted “Don’t Say Gay'' laws restricting discussion of sexual orientation or gender identity in the classroom, or enacted laws requiring parental consent (MAP, 2023a). Many states have enacted restrictions to accessing gender affirming care for minors, including standard medical interventions such as the use of hormones to delay puberty. The UCLA Williams Institute estimates that approximately 146,300 transgender youth will lose access to care due to the recent legislation or executive actions, such as Mississippi’s Regulate Experimental Adolescent Procedures (REAP) Act and Arizona’s Children Deserve Help Not Harm Act (Redfield et al., 2023). New restrictions on gender affirming care for minors may include bans on insurance coverage, penalties for family members that assist youth in receiving care and imposes penalties upon medical practitioners if they do refer to or provide care, from removal of license to criminal offense (Redfield et al., 2023).

California fares much better than the rest of the country - according to the Movement Advancement Project’s tally system, the state has the best political climate for LGBTQ+ residents (MAP, 2023a). The Williams Institute (2023) estimated the population of trans youth ages 13-17 in the state of California to be 49,100 using data from the Behavior Risk Factor Surveillance System, Youth Risk Behavior Surveillance System, and statistical modeling. California has the largest estimated population of transgender youth of any U.S. state, and they make up a significant portion of students - 1.92% of California youth aged 13 to 17 are estimated to be transgender (Herman et al., 2022). However, despite the political climate being more favorable to TNB youth, California has faced many visible attacks on its LGBTQ+ community members. In February 2023, Huntington Beach banned the pride flag on city properties, followed by a ban in June from the Orange County Board of Supervisors (Pho & Elattar, 2023). During June 2023, protests against the recognition or celebration of pride month by Glendale and Los Angeles Unified School Districts turned violent (Beckett, 2023). In the past 10 years, the number of reported hate crime offenses against transgender individuals has increased significantly, with an approximate increase of 35.5% in reported anti-transgender hate crimes between 2021 and 2022 (California Department of Justice, 2023). In addition, California is home to seven anti-LGBTQ+ hate groups identified by the Southern Poverty Law Center, and in the last few years has seen over a thousand instances of ‘flyering,’ or spreading hateful rhetoric through flyers or banners in public or on college campuses (SPLC, 2023a; 2023b). While TNB youth in California are more protected than most youth within the country, the visibility of attacks on LGBTQ+ Americans and the accompanying stress has broader impacts on youth health and wellbeing.

The political determinants of health, an evolution of the widely used framework of social determinants of health, examines how the political “spheres of influence” shape population health outcomes (Mishori, 2019). Mishori (2019) proposes four political domains that shape health - federal laws, judicial decisions, executive orders, and state laws. The recent attacks on TNB youth have aligned with all four of these domains, as federal bills such as the proposed Protection of Women and Girls in Sports Act (Karni, 2023) and state bills like Florida HB 1521 making bathroom use incongruent with sex assigned at birth a criminal offense (MAP, 2023a) create challenges for students. Socio-political events may have negative influences on individual health outcomes due to stress or restriction of medical care (Gemmill et al., 2019; Sadjadi, 2020). For example, the overall health of transgender adults is connected to perceived community climate and safety (Griffin et al., 2019), and exposure to political discourse on the rights of LGBTQ+ Americans is associated with poorer mental health outcomes (Frost & Fingerhut, 2016; Rostosky et al., 2009). Several studies have examined the impacts of the 2016 presidential election on LGBTQ+ individuals (Drabble et al., 2019; Gonzalez et al., 2018). A qualitative study by Drabble et al. (2019) found that the election had an impact on how LGBTQ+ adults perceived safety in their communities. While some participants described their sense of safety within their community connected to their residence in ‘liberal bastions,’ many participants in liberal-leaning smaller towns and hostile communities; however, increased concern was consistent across all community settings, especially amongst transgender residents (Drabble et al., 2018). Youth themselves identified the recent attacks on the rights of TNB youth as a potential catalyst for poor mental health outcomes among the group (Paceley et al., 2023). Responses to this sense of encroaching danger include increased hypervigilance of potential dangers (Drabble et al., 2018; Gonzalez et al., 2018) and relocating altogether (Drabble et al., 2018).

**TNB Youth Health Disparities**

Results from the 2018-2019 Youth Risk Behavior Survey showed that an estimated 15.1% of adolescents had a major depressive episode in the last year, 18.8% of adolescents had seriously considered suicide, and 36.7% had chronic feelings of sadness or hopelessness, with disparities along racial/ethnic and gendered lines (Bitsko et al., 2022). LGBTQ+ youth face higher rates of emotional distress and depressive symptoms than their cisgender and heterosexual peers (Almeida et al., 2009; Gower et al., 2018a). The Trevor Project’s 2022 National Survey on LGBTQ Youth Mental Health found that TNB youth had high rates of suicidality, anxiety, and depression symptoms (The Trevor Project, 2022). Rates of suicidality in TNB youth are particularly concerning: transgender boys (59%), transgender girls (48%), and non-binary youth (53%) reported that they considered suicide in the last year, considerably higher than their cisgender LGB peers (The Trevor Project, 2022). Approximately 1 in 5 trans boys (22%) and non-binary youth (19%) reported a suicide attempt (The Trevor Project, 2022).

Emotional distress may also be connected to gender expression. In a study of TNB youth in Minnesota, Gower et al. (2018a) identified higher rates of depression symptoms related to gender expression inconsistent with sex assigned at birth (i.e., a trans boy reporting that masculine gender expression). TNB youth may choose not to disclose their identity for a number of reasons, including concerns about safety or expecting social rejection (Johns et al., 2021). Concealment of identity can vary across contexts - for example, youth may be open about their gender identity at school but not at home, or to peers or adults who they feel safe to disclose to (Johns et al., 2021). TNB youth who express themselves inconsistently with their gender identity (for example, a young trans girl otherwise appearing as a boy) report poorer mental health outcomes (Chodzen et al., 2019). Other stressors TNB youth may face that lead to poor health outcomes include fear of rejection or hypervigilance around physical safety (Johns et al., 2021). Internalized transphobia, a result of societal stigmas leading to feelings of shame, also relates to poor mental health outcomes for TNB youth (Chodzen et al., 2019, Katz-Wise et al., 2021). Katz-Wise et al. (2021) determined that internalized transphobia was a more significant mediator of distal stressors and substance use than depression or anxiety alone.

A study using a population-based sample of transgender youth from the 2013-2015 California Healthy Kids Survey found higher prevalence of substance use among TNB youth (Day et al., 2017). TNB youth are also significantly more likely to experience homelessness than cisgender youth (Deal et al., 2023). While cisgender youth facing homelessness may stay in a non-parental home, TNB youth facing homelessness are more likely to live in inadequate living situations such as cars, parks, or other public places (Deal et al., 2023). Transgender adults experience further economic hardships, reporting lower rates of employment and household income (Carpenter et al., 2022). In addition, TNB youth face additional barriers to medical care, potentially exacerbating existing health disparities (Rider et al., 2018). A qualitative study of TNB youth identified access to gender-affirming and inclusive care as a need, reporting healthcare experiences with dismissive or ill prepared providers (Call et al., 2021). Youth identified barriers to receiving HIV preventative services like PrEP such as affordability and disclosure of identity (Call et al., 2021).

TNB students face higher rates of discrimination and violence than their cisgender counterparts. In a study using data from the Minnesota Student Survey, TNB youth reported significantly higher rates of bullying due to gender and sexual orientation than cisgender students (Gower et al., 2022). The Trevor Project’s 2022 National Survey on LGBTQ Mental Health found that 71% of TNB youth reported experience of discrimination based on gender identity alone. Bullying or safety concerns may result in removal of students from school settings and into alternative programs (Beck et al., 2023; McGuire et al., 2010). These distal stressors of harassment compound with intersecting gender and racial/ethnic identities, and TNB youth of color may face higher rates of bullying and poorer mental health outcomes such as depression and suicidality (Park et al., 2022; The Trevor Project, 2022). Overall, youth with experiences of discrimination or abuse have higher reported rates of suicidality (Jones. et al, 2016; Wilson et al., 2016). Perceived stressors in the environment relate to LGBTQ+ youth rates of depressive symptoms (Almeida et al., 2009), and protective factors in a TNB student's environment, such as school climate or supportive adults, are strong predictors of depressive symptoms (Gower et al., 2018b; McPherson et al., 2023). Medical interventions for TNB youth - puberty blockers or gender-affirming hormones - is also associated with decreased depressive symptoms over time (Tordoff et al., 2022).

Relationships with friends are strong protective factors for TNB students, lowering reported outcomes of bullying or other peer victimization (James et al., 2016) and improving quality of life (Weinhardt et al., 2019). Friends of TNB students may offer support by assisting youth with gender affirmation or transition (Weinhardt et al., 2019). TNB youth may also seek support and affirmation in online environments to supplement their social networks offline (Selkie et al., 2020). TNB youth’s connection to parents is also associated with positive mental health outcomes, including lower rates of depressive symptoms and suicidality (Olsavsky et al., 2023, Wilson et al., 2016; Simons et al., 2013; London-Nadeau et al., 2023), greater life satisfaction (Simons et al., 2013), and a higher likelihood with identity disclosure and freedom of expression (Weinhardt et al., 2019). Parent’s use of children’s names, rather than “deadnames,” or birth names that youth do not prefer, is related to positive mental health outcomes (Fontanari et al., 2020).

School climate plays an important part in TNB youth safety. More than half (55%) of non-binary or transgender youth report that school was a gender affirming space, contrasted with 1 in 3 TNB youth that reported home was gender affirming (The Trevor Project, 2022). School climate includes the structural-level factors such as values, attitudes, and policies within the school setting (Russell & McGuire, 2008). For LGBTQ+ youth, Russel & McGuire (2008) contend that climate is a function of many factors, including discrimination and harassment, student perceived safety, school policy, and presence of student resources such as GSAs. Stressors within the school setting could also include access and safety within physical spaces such as restrooms and locker rooms (Bower-Brown et al., 2023; Jones et al., 2016), with students experiencing increased exclusion and policing of use of spaces due to expression or normative rules around gender. In a survey of 3,673 trans and non-binary youth across the country as part of the 2017 LGBTQ Teen Study, TNB youth reported higher rates of sexual harassment and assault at school (Murchison et al., 2019), most likely due to policies surrounding school locker rooms and restrooms.

Teacher support is also instrumental in shaping transgender youth social-emotional wellbeing - students with teachers that did not create or enforce affirming school environments are at increased risk of abuse by their classmates (Jones et al., 2016). The existence of trans-affirming in-school activities like GSAs (Gender and Sexuality Alliances, formerly Gay Straight Alliances) are valued by TNB youth for their creation of safe spaces (McGuire et al., 2010), and GSAs encourage feelings of empowerment in marginalized youth (Russell et al., 2009). TNB youth in schools with GSAs or other school-level supports may face less stressors such as bullying or ill perceptions of school safety (Greytak et al., 2013), and existence of GSAs may disrupt ‘cisnormativity’ in the school environment. For LGBTQ+ youth overall, suicide attempt rates are also shaped by community context. Eisenberg et al.’s (2019) study used data from the Minnesota Student Survey to examine the relationship between rates of suicide attempts and suicidal ideation among TNB youth and community size, noting that urban school districts may have more access to community resources, explaining lower outcomes for suicidality among urban respondents (Eisenberg et al., 2019). From the Trevor Project’s 2022 report, 21% of respondents reporting that their community was very unaccepting had made suicide attempts, in contrast to while 8% of respondents residing in communities they perceived as very accepting. Satisfaction across the lifespan may be related to structural stigma, such as discriminatory policies and exposure to anti-LGBTQ+ ideology (van der Star et al., 2021). These stressors and support within the environment of LGBTQ+ individuals and their relationship to health is captured within two theoretical frameworks: minority stress models and concepts of structural stigma.

**Theories of Structural Transphobia and Health**

***Minority Stress Model***

Meyer’s (1995, 2003) minority stress model was developed out of observation that lesbian, gay, and bisexual (LGB) individuals’ mental health outcomes were related to social stressors in their environment. More than just immediate stressors, such as harassment or violence, the model pulled from social stress theories that connected negative health outcomes to structural forces such as prejudice and stigma. Building from these foundations, minority stress theory posits that due to LGB (and later TNB) individuals' marginalized position in society, these populations face excess stress. Meyer (2003) differentiates stressors marginalized people may face among distal stressors (environmental conditions) and proximal stressors (individual perception of conditions). Experiences of discrimination or other stressful experiences are considered distal stressors, while anticipation of these experiences and the internalization of societal stigma are proximal stressors (Meyer, 2003). Other features of the LGB experience are considered unique proximal stressors, such as hiding identity and expression, constant monitoring of social situations for potential danger, and internalized homophobia.

Proximal stressors rely on individual appraisal of distal stressors and coping mechanisms to revolve around appraisal. Meyer (2003) states that one method of coping for LGB minoritized individuals is through identification with in-group rather than the dominant culture. For example, being a part of a LGB community can provide an escape from societal stigma. Minoritized individuals with this support may identify themselves in relation to a found community rather than the oppressor; Meyer conceptualizes minority coping as a “group-level resource.” These community-level supports play a prominent role within the minority stress model as a mediator between proximal/distal stressors and mental health outcomes.

This theory was developed after the removal of homosexuality in the Diagnostic and Statistical Manual of Mental Disorders and before political and symbolic victories for LGBTQ+ rights, such as Obergefell vs. Hodges. The forms that structural homophobia takes has changed, but the model is still applicable for understanding how minoritized individuals respond to social stressors. However, Meyer’s model and the numerous ensuing studies do not address TNB individuals' response to social stressors. Hendricks & Testa (2012) developed an adaptation of the minority stress model for TNB patients. TNB individuals face specific conditions that tie into the distal dimensions of the minority stress model - for example, trans folks face distressing rates of sexual and physical violence, a reality that is only compounded by intersecting socioeconomic, gender, and racial disparities (Balsam et al., 2011). Transgender folks also have higher rates of suicide than other populations, demonstrating a need to understand the interplay of societal stigma and trans mental health (James et al., 2016). Hendricks & Testa reframe the most proximal stressors to include trans experience, including internalized transphobia. The adapted model and measures also build off of Meyer’s concept of group-level resources for coping, noting that community resources or support groups hold benefits for resilience to social stressors. Lefevor et al. (2019) extend this even further and address genderqueer and non-binary health disparities through an extension of both models, incorporating non-affirmation of a non-binary gender and differing experiences of hiding identity, hypervigilance, and invalidation than binary trans counterparts - however, this model is underutilized. While societal transphobia and its resulting political and physical violence impact both binary and non-binary TNB individuals, the adaptation of the model to include gender-specific proximal and distal stressors related to the unique experiences of non-binary individuals can illuminate how they cope with adversity.

In the last two decades, minority stress theory has become a popular framework of analyzing sexual minority mental health outcomes and their relation to societal oppression, including moderating factors such as parental support (Feinstein et al., 2014), suicidal ideation (Michaels et al., 2016), and HIV related stressors (Rendina et al., 2017). Several standardized measures of minority stress have been developed since 2003, including those from Hendricks and Testa’s (2012) Gender Minority Stress Model (GMSR), which developed seven scales testing stress (discrimination, rejection, victimization, non-affirmation, internalized transphobia, negative expectations, and nondisclosure) and two scales testing resilience (community connectedness and pride).

Criterion validity for the GMSR measures was determined as positive correlation of stress scales and outcomes of depression and anxiety, and negative correlation between resilience scales and health outcomes (Hendricks & Testa, 2012). These scales were developed from existing research on trans adults and minority stress, the Sexual Minority Negative Events Scale (Goldblum et al., 2010 as cited in Hendricks & Testa, 2012), and measures of internalized transphobia and alienation from the Transgender Identity Survey (Bockting et al., 2020). Hendricks and Testa (2012) established validity of these measures in a survey of 1,414 individuals and established significant relationships between mental health outcomes and scales measuring stress and resiliency. These scales met measures of convergent and discriminant validity, as all stress scales besides victimization significantly correlated with perceived general life stress, community connectedness significantly correlated with social support, and each scale was determined to be conceptually distinct (Hendricks & Testa, 2012).

The GMSR is the first psychometrically valid measure of minority stress in TNB adults, and its development has resulted in greater depth of research on TNB mental health. Valentine and Shipherd’s (2018) systematic review of TNB mental health literature confirmed the underpinnings of the GMSR model, and in the 77 empirical studies examined through a framework of the minority stress model, over half included aspects of resiliency corresponding to the model. Many examined distal and proximal stressors and their connections to mental health outcomes, and approximately 14% examined community support or pride as a resilience factor (Valentine & Shipherd, 2018). Scandurra et al. (2020) tested the GMSR for psychometric validity in an Italian cultural context, finding that all of the findings of the initial tests of the measures held true apart from significant association between community connectedness and mental health outcomes, which the authors attribute to cultural differences in social capital. The study established criterion validity of stressor’s association with mental health outcomes and convergent and discriminant validity (Scandurra et al., 2020). Similarly, Algarin et al. (2022) tested the GMSR translated into Spanish for psychometric validity and determined the integrity of the model for Latin American contexts.

Hidalgo et al. (2019) reconfigured the GMSR measures for adolescents to create the Gender Minority Stress and Resilience measures for Adolescence (GMSR-A) using existing measures for LGBTQ+ youth mental health outcomes. From testing validity, the authors found that the model held up when assessing adolescent minority stress, and distal and proximal stressors were found to correlate to depression and/or anxiety outcomes, excluding discrimination (Hidalgo et al., 2019). Hidalgo and colleagues (2019) attribute this to the increased role discrimination has in the lives of TNB adults who are engaged in the workforce or navigating healthcare or government systems. The GMSR and GMSR-A have been used to measure gender minority stress and resilience in youth and assess differences between minority stress and resilience in trans male, female, and non-binary adolescents (Poquiz et al., 2022; Hunter et al., 2021).

***Theories of Structural Stigma***

Concepts of structural stigma have been instrumental in informing studies of community- and state-level indicators of LGBTQ+ health. Link and Phelan (2001) relate stigma to labeled differences and stereotypes resulting in discrimination and the categorical disenfranchisement of persons, including loss of access to social, political, and economic power. Transgender individuals face many forms of stigma related to supposed divergence from traditional norms of sex and gender (King et al., 2020). Link and Phelan’s (2001) conceptualization of stigma goes beyond the interpersonal, noting that both interpersonal and structural discrimination are facets of stigma, and that stigmatization itself is a function of systems of power. Within studies of structural stigma and sexual minorities, there has been a focus on both institutions of power (Hatzenbuehler, 2014) and societal stigma, relating to cultural norms and beliefs that shape interpersonal relationships (Herek, 2007). Herek’s (2007) concept of *sexual stigma* developed from this concept of social stigma, noting that while homophobia is reflected within our institutions, there is also a societal-level understanding that homosexuality is stigmatized for its departure from norms of sex and gender, independent of individual beliefs about homosexuality. Sexual stigma “creates the social context in which such attitudes are formed, maintained, expressed, and changed” (Herek, 2007 pp. 907). This societal level understanding that homosexuality deviates from what is “normal” is then reflected in policy and economic discrimination (Herek, 2007).

Structural sigma has proven to be a useful lens to explore the impact of institutional- or community-level forces on LGBTQ+ health. Structural stigma has been used as a framework to explore the impact of gay marriage legislation (Hatzenbuehler et al., 2010; Hatzenbuehler et al., 2012), country-level discriminatory policies (Bränström & Pachankis, 2021; Pachankis & Bränström, 2018), and community context (Gordon et al., in press) on LGBTQ+ individual health and wellbeing. Hatzenbuehler’s body of work explores the role of structural stigma on LGB health extensively, pulling from a cell-to-society approach. For example, Hatzenbuehler and colleagues (2009) found associations between psychological distress and residence in states that had passed anti-gay marriage legislation in the early 2000s. In addition, Hatzenbuehler and colleagues (2012) identified that a significant decrease in medical care and mental health care visits had occurred after the passage of same-sex marriage laws in Massachusetts; these patterns were not identified among their heterosexual counterparts during this time frame.

Hatzenbuehler’s work often revolves around geographic variation in structural stigma, including comparisons of locales by social policies and prevalence of neighborhood-level hate crimes (Hatzenbuehler, 2014). Studies of structural stigma face many obstacles - they require datasets that include demographic measures of LGBTQ+ identity, health outcomes, and geographic measures, such as zip code or county (Hatzenbuehler, 2014). Hatzenbuehler’s (2016) assessment of structural stigma literature notes that there are significant gaps in our empirical understanding of how stigma impacts LGBTQ+ health. Future directions for research about structural stigma, including the development of new measures, identifying moderators on the relationship between structural stigma and health, and examining structural stigma across multiple geographic levels such as city and state (Hatzenbuehler, 2016). Notably, very few studies have examined how structural stigma impacts transgender populations across space, instead focusing on lesbian, gay, and bisexual individuals (Doyle & Molix, 2015; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Lick et al., 2012; Perales & Todd, 2018). In addition, few studies use unique measures of structural transphobia in analysis (Bränstrom & Pachankis, 2022; Perez-Brumer et al., 2015). One study assessing structural transphobia’s impact on transgender adult health measured stigma using all indicators relating to LGB populations: density of same-sex couples, policies protecting LGB residents, and joint-adoption for same sex couples, among others (Perez-Brumer et al., 2015). Directly relating to institutionalized transphobia, Bränstrom and Pachankis (2022) created an index of discriminatory anti-trans policies within EU countries and found a connection to life satisfaction outcomes in transgender individuals. Falck and Bränström (2023) also found that anti-trans policy at the country-level was negatively associated with seeking gender affirming care and related to concealment of identity in healthcare settings. There is a dearth of literature exploring structural transphobia as a predictor of poor health outcomes - this is especially troubling given the current political climate surrounding transgender access to healthcare and public space (MAP, 2023a). New measures of structural stigma affecting TNB populations need to be developed to explore how transphobia impacts health at the state, county, and city level.

**Community Climate as an Indicator of Health**

Community context forms an important part of understanding the full picture of TNB youth wellbeing. An increasingly large body of research examines LGBTQ+ youth experiences in relation to geographic location, noting that LGBTQ+ youth in rural communities often face greater obstacles to success than their urban counterparts (Ballard et al., 2017; Choi et al., 2017; Cohn & Leake, 2012; Goldbach et al., 2023; Hulko & Hovanes, 2018). However, community climate may be a stronger indicator of mental health outcomes than community size (Paceley et al., 2020b). Oswald et al. (2010) define community climate as the level of support for LGBTQ+ residents within a location such as neighborhood, town, or region. This includes attitudes of residents, visibility of LGBTQ+ community members, social support, and political environment. Community climate goes beyond experiences of discrimination and victimization and is constructed by perceptions of safety shaped by visible and symbolic indicators of LGBTQ+ affirmation (Eisenberg et al., 2018; Oswald et al., 2010; Paceley et al., 2020a; Wolowic et al., 2016). Community climate has an impact on the wellbeing of TNB individuals (Griffin et al., 2019) and shapes TNB youth relations to family (Goffnet et al., 2022). Community context has been linked to mental health outcomes for LGBTQ+ populations (Duncan et al., 2014; Hatzenbuehler, 2011; Perales & Todd, 2018). Community climate is constructed by youth (Griffin et al., 2019), and feelings of safety within a community are associated with LGBT resource availability and visibility (Paceley et al., 2019).

Literature on community climate’s impact on LGBTQ+ youth wellbeing is underdeveloped, as most research on structural and institutional influences on youth health has centered around school climate (Ancheta et al., 2020; Coulter et al., 2016; Day et al. 2018; De Pedro et al., 2018; Hatzenbuehler et al., 2014; Kull et al., 2016; McGuire et al., 2010; Peter & Taylor, 2016; Taylor & Peter, 2011). Gaps exist in understanding how community context shapes youth health, as many studies address the connection in adult populations only (Hatzenbuehler, 2011; Hatzenbuehler, 2014; Perales & Todd, 2018; Woodford et al., 2015). In addition, literature on environmental influences - especially early work - often focuses on the experiences of lesbian, gay, and bisexual populations (Ballard et al., 2017; Barefoot et al., 2015; Birkett et al., 2009; Coulter et al., 2016; Fields & Wotipka, 2022; Hatzenbuehler, 2011; Hatzenbuehler et al., 2012; Hatzenbuehler et al., 2014; Perales & Todd, 2018; Woodford et al., 2015), leaving a gap in our understanding of how environmental context impacts TNB youth, who navigate schools and communities differently.

Studies of community climate and how TNB youth navigate their surroundings lend themselves to understanding how perceived safety, rather than experiences of discrimination and abuse alone, shape wellbeing. For example, the symbolic presence of LGBTQ+ affirmation holds importance for young LGBTQ+ individuals, such as pride flags or signage demonstrating safe spaces (Wolowic et al., 2016). As part of the Research & Education on Supportive & Protective Environments for Queer Teens (RESPEQT) study, Wolowic et al (2016) conducted a qualitative study of teens across urban, suburban, and rural contexts (n=66) exploring the symbolic meaning of rainbow displays. The emergent themes demonstrated that for LGBTQ+ youth, rainbow imagery evoked positive feelings and facilitated supportive relationships. The study also discovered that displays of rainbow imagery also acted as an “informational shortcut” that helped youth locate safe spaces, people, and community resources (Wolowic et al., 2016). At the community level, youth report that open displays of LGBTQ+ community, such as pride parades or LGBTQ+ serving youth organizations, were valued and created feelings of safety and empowerment (Eisenberg et al., 2018). Youth also cited LGBTQ+ organizations and health services as important community-level resources and noted that visibility of symbolism demonstrating LGBTQ+ safety was important for them to identify “queer friendly” spaces (Eisenberg et al., 2018). An additional marker of friendly community climate was visibility of LGBTQ+ adults within the community (Eisenberg et al., 2018).

Paceley et al.’s (2020a) similar study of community climate and TNB youth (n=19) noted similar themes - community resources, visibility of support for transgender communities, and visibility of transgender adults were important community-level assets. However, the study identified TNB-specific needs. Participants identified gender-affirming healthcare as an important indicator of community climate (Paceley et al., 2017). Policies also posed a significant indicator of community climate - discriminatory policies or lack of policies upholding rights for TNB youth at multiple institutional levels impacted youth in material ways (i.e., name change policies or rights to use bathrooms congruent to gender identity), in addition to the impact visible community discourse around TNB youth rights has on youth perceptions of safety and support (Paceley et al., 2020a). An additional focus group study by Paceley et al. (2023) found that TNB youth identified the most recent political rhetoric about banning transgender school athletes and eliminating access to gender affirming care as a major concern, potentially resulting in massive mental health impacts for young people. The influence of policy and ensuing political discourse on LGBTQ+ wellbeing is confirmed by research about LGBTQ+ populations overall (Hatzenbuehler et al., 2009b; Hatzenbuehler, 2014; Fields & Wotipka, 2022; Taylor & Peter, 2011).

Additional work from the RESPEQT study explored the relationship between LGBTQ+ youth and community resources. Eisenberg et al.’s (2018) asked youth to identify important resources in their community, spaces that felt supportive or unsupportive, and needs within their community. The study found that valued community resources remained consistent across location, size of city, ethnic/racial group, and sexuality/gender. Studies of community climate determine that community organizations and youth services - often termed “resources” - form an important component, both for their perceived and actual benefits (Eisenberg et al., 2018; Paceley et al., 2020a). These spaces are important in moderating stressors - according to the 2022 National Survey on LGBTQ Youth Mental Health, approximately 1 in 5 TGNC youth without access to a safe, affirming environment at home or in school has attempted suicide (The Trevor Project, 2022).

Indicators of community climate have been used to assess youth rates of suicidality (Hatzenbuehler, 2011), relation between political environment and LGB mental health (Perales & Todd, 2018), and religious climate and LGB risk behaviors (Hatzenbuehler et al., 2012). The spatial dimension of community climate is apparent in the disparities in accessing important youth “resources” such as LGBTQ+ centers, youth services, or pediatric gender clinics - youth may travel long distances to access support services that are not available in their area (Allen et al., 2019), or services may be located in white, high-income communities (Felner et al., 2018; Rosentel et al., 2020). Access to pediatric gender clinics or providers is impeded by inaccessibility, either by local provider’s incapacity to treat youth or distance to nearest provider (Gridley et al., 2016). This is especially important in considering spatial disparities for TNB youth, as access to gender affirming care is related to outcomes in depression and suicidality (Olsavsky et al., 2023; Allen et al., 2019; Green et al., 2022). Indicators of community climate emphasize the geographic variation of LGBTQ+ support, noting that as poor community climate is connected to health outcomes, spatial disparities in LGBTQ+ health persist (Barefoot et al., 2015; Cohn & Leake, 2012; Goldbach et al., 2023; Hatzenbuehler et al., 2012; Perales & Todd, 2018). Within a limited scope of work on TNB wellbeing and community context, research is either qualitative (Goffnett et al., 2022; Paceley et al., 2020a; Paceley et al., 2023) or using small sample sizes (Paceley et al., 2017). Notably, most of the work specifically on TNB youth relating to socio-political discourse and community climate has been done by Dr. Megan Paceley and colleagues, including a youth advisory board as part of a community-based participatory research project, with sample sizes solely in Kansas (Goffnett et al., 2022; Paceley et al., 2017; Paceley et al., 2020a; Paceley et al., 2023). No research was identified with an intentional focus on transgender youth and spatial disparities. There is a very notable gap in exploring the relationship between measures of TNB-specific community climate and TNB youth population health - with a complete lack of research relating to non-binary population health.

***Community Climate Indices***

Oswald et al.’s (2010) Community Climate Index built off of Meyer’s (2003) minority stress model, extending concepts of minority-related stressors into the context of the surrounding community. Oswald et al’s (2010) index, like most early work on LGBTQ+ health and environmental context, centers around LGB individuals. Community climate indicators are “objectively measurable phenomena,” including policies, political affiliation, and presence of LGBTQ+ individuals within the community (Oswald et al., 2010). These indicators theoretically comprise community climate by symbolizing either support or rejection within the environment, contributing to Meyer’s (2003) concepts of LGBTQ+ appraisal of safety or rejection as a proximal minority stressor. Models of community climate also often pull from Hatzenbuehler’s (2014) work investigating structural stigma. Hatzenbuehler (2014) noted most studies of stigma’s relationship to LGBTQ+ health measured interpersonal stigma with items of self-reported incidences or perceptions of victimization and discrimination, leaving a gap in our ability to measure the construct of structural stigma. Hatzenbuehler’s application of concepts of structural stigma in predicting health outcomes included measures of social policy in a cross-sectional (Hatzenbuehler et al., 2009) and a longitudinal study (Hatzenbuehler et al., 2010), using measures or religious climate (Hatzenbuehler et al., 2012), and indices of community climate constructed from policies, political ideology, and presence of resources (Hatzenbuehler 2011; Hatzenbuehler et al., 2011).

There is significant precedent for examining the role of spatial variations in community climate as a predictor or moderator of LGBTQ+ health outcomes (See Table 17 in appendix) (Doyle & Molix, 2015; Duncan et al., 2014; Gower et al., 2019; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018; Paceley et al., 2020; Perales & Todd, 2018; Puckett et al., 2017; Woodford et al., 2015). Of the 15 studies identified, a majority addressed climate’s impact on LGB populations only (Doyle & Molix, 2015; Duncan et al., 2014; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018; Perales & Todd, 2018; Puckett et al., 2017; Woodford et al., 2015), leaving significant gaps in our understanding of what TNB-specific community climate measures may influence health. Indicators of community climate or environmental context were used to investigate youth and emerging adult health in eight studies (Duncan et al., 2014; Gower et al., 2019; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Paceley et al., 2020; Perales & Todd, 2018; Woodford et al., 2015).

Several themes emerged from these studies - common measures or indicators of community climate included state- and municipal-level policies addressing LGB discrimination (Doyle & Molix, 2015; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018; Puckett et al., 2017; Woodford et al., 2015); political ideology or LGBTQ+ political support, indicated by voting for LGBTQ+ supportive major political parties (Doyle & Molix, 2015; Gower et al., 2019; Hatzenbuehler, 2011; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018) and share of votes for LGBTQ+ (anti-)discriminatory policies (Gower et al., 2019; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Perales & Todd, 2018); visibility of LGBTQ+ populations indicated by proportion of households with same-sex partnerships in relation to total households, often taken from the U.S. Census (Gower et al., 2019; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018); and number of LGBTQ+ serving organizations or resources (Gower et al., 2019; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Oswald et al., 2010; Oswald et al., 2018; Puckett et al., 2017). The studies often used community climate indicators as dependent variables, testing relationships between climate and health (Duncan et al., 2014; Gower et al., 2019; Hatzenbuehler et al., 2009; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Lick et al., 2012; Paceley et al., 2020; Perales & Todd, 2018; Woodford et al., 2015) or within moderation/mediation analysis (Doyle & Molix, 2015; Hatzenbuehler, 2011; Paceley et al., 2020; Perales & Todd, 2018).

I developed eight indicators of community climate in reference to previous theoretical frameworks and research regarding TNB health and the community context: proximity to LGBTQ+ youth services; proximity to pediatric gender clinics; proportion of households headed by same-sex couples; LGBTQ+ political representation; proximity to informed consent HRT providers; presence of Pride festivals or celebrations; official city and county recognition of Pride month through proclamation or flag raising; and a county-based indicator of votes for anti-LGBTQ+ political parties in the 2020 election. Each indicator is explained in further detail below.

**Youth Services**LGBTQ+ youth services include community centers and youth programs. These services offer invaluable benefits to LGBTQ+ youth - participation in programs has benefits for overall health and wellbeing (Fish et al., 2019; Halverson, 2005) and provide spaces to connect with other youth with shared experiences (Fish et al., 2021). While youth-serving organizations may operate in shared spaces such as churches and community centers, a majority of LGBTQ+ centers in the United States are located in physical space and provide a youth drop-in center (Movement Advancement Project, 2018; Allen et al., 2012) and approximately half offered support tailored to trans youth (Allen et al., 2012). Eisenberg et al.’s (2018) qualitative study of LGBTQ+ youth-identified community assets noted that community organizations such as youth organizations, youth centers, or support groups filled multiple roles in assisting youth development and wellbeing.

Youth programs may be focused on mentoring (Mallory et al., 2014), artistic expression (Halverson, 2005), support groups (Fish et al., 2021), housing assistance (Berberet, 2006), and a mix of other activities that provide community to LGBTQ youth (Movement Advancement Project, 2018). LGBTQ+ Community Centers form an important community-level support for LGBTQ+ youth. These resource centers offer many services such as community building events, HIV/STI education, support groups, or assistance to homeless youth (Allen et al., 2012). In a study by Allen et al. (2012), range of service of LGBTQ+ centers for youth is broad, and youth may travel up 90 miles away to access support services. Clientele are disproportionately younger and low-income (Fish et al., 2019; Movement Advancement Project, 2018). These resource centers and their services are significant community assets for youth, especially LGBTQ+ youth with one or more intersecting marginalized identities.

In addition, presence of youth serving organizations contributes to youth perceptions of community climate (Davis et al., 2009; Eisenberg et al., 2018; Paceley et al., 2019; Paceley et al., 2020a), relating to the role of symbolism in youth construction of safety and support (Eisenberg et al., 2018). LGBTQ+ resources in non-metropolitan areas may not be as available for LGBTQ+ youth or utilized at the same rates as those in other community settings (Paceley et al., 2019). However, rural youth may travel significant distances to neighboring urban areas to access resources (Paceley et al., 2019). Youth also identified visibility of LGBTQ+ serving organizations as an indicator of community social climate (Eisenberg et al., 2018).

**Pediatric Gender Clinics** The role of TNB-specific indicators of community climate in predicting health outcomes is underexplored (Doyle & Molix, 2015; Duncan et al., 2014; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018; Perales & Todd, 2018; Puckett et al., 2017; Woodford et al., 2015). This is especially troubling given the importance of pediatric gender care - interventions for TNB adolescents, namely puberty blockers or gender affirming hormones, are related to outcomes of depression and suicidality (Allen et al., 2019; Green et al., 2022; Olsavsky et al., 2023). Gender affirming care is equally important for TNB youth in reducing symptoms of suicidality and depression (Olsavsky et al., 2023). However, there are significant barriers to accessing care (Green et al, 2022; Gridley et al., 2016). In a study by Green et al. (2022), 46.7% of non-binary adolescents and 41.3% of transgender boys sought gender affirming hormone therapy but had not received it.

In addition, recent political discourse on gender-affirming care interventions for adolescents has created increasing disparities in access (Movement Advancement Project, 2023). 19 states have bans on gender-affirming medical interventions for minors, with the majority enacted in 2023 (Movement Advancement Project, 2023). An estimated 146,300 transgender youth have lost or are at risk of losing access to gender-affirming care due to these bans (Redfield et al., 2023). For some youth, this has necessitated travel or relocation across state lines to access care (Rodgers & Goldberg, 2023). TNB youth report that denial of gender-affirming care due to state law is of significant concern (Paceley et al., 2023; The Trevor Project, 2022) and political discourse surrounding access to gender-affirming care is related to poor mental health (Paceley et al., 2023). Even in California, pediatric gender care is under scrutiny and attack. The Gender Mapping Project, which aims to hold facilities and practitioners that offer pediatric gender care “accountable”, has identified over 400 locations across the world. Through crowdsourcing, this project has identified several locations throughout California, many with addresses and information about clinics and some with information about individual providers. Adding to the important of proximity and visibility of gender health services, many locations such as the UCLA Gender Health Program and UCSF Child and Adolescent Gender Center, offer services outside of gender-affirming care for TNB youth, including primary care, care navigation, and behavioral health. Many locations host practitioners that specialize or frequently work with TNB youth. These locations are important assets - trans-affirming healthcare, defined by acceptance and knowledge of healthcare providers, is a youth-identified indicator of community climate (Paceley et al., 2017) and poses a barrier to receiving care (The Trevor Project, 2022).

**Presence of LGBTQ+ Adults in Community**A multitude of climate indices use American Community Survey data of same sex households as an indicator of community climate, including Oswald et al.’s (2010) foundational community climate index (Gower et al., 2019; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Lick et al., 2012; Oswald et al., 2018). Visibility of LGBTQ+ adults is a youth-identified community asset (Davis et al., 2009; Paceley et al., 2020), an indicator of community climate (Eisenberg et al., 2018), and for TNB youth, connection to adults in the community is associated with lower rates of depressive symptoms (Gower et al., 2018). Areas with concentrated populations of LGBTQ+ individuals are often called ‘gay enclaves’ or ‘gayborhoods’ and shape health behavior and social activity (Carpiano et al., 2011; Buttram & Kurtz, 2013). While residence in gay enclaves may have negative health outcomes for LGBTQ+ adults (Carpiano et al., 2011), communities with concentrated LGBTQ+ populations hold symbolic meaning (Greene, 2014).

**Voting Patterns in 2020 Presidential Election**Patterns of political participation are related to LGBTQ+ health - for instance, discriminatory state policies may moderate the relationship between stressors and social relationship functioning (Doyle & Molix, 2015) and stressors and emotional distress (Hatzenbuehler et al., 2009). In a pre-Obergefell context, Lax and Phillips (2009) found that political ideology within states was a reliable predictor of anti-LGB policies such as discrimination policies, sodomy, and marriage. Following the 2016 Presidential election and the ensuing shifts in anti-LGBTQ+ policy and sentiment, LGBTQ+ adults’ perceptions of safety across communities changed - but reactions differed across community context, and residents of conservative regions of the United States reacted by increasing vigilance or relocating to other parts of the country (Drabble et al., 2019). Exposure to discriminatory messaging in the environment, including political campaign materials and media, impacts LGBTQ+ wellbeing (Frost & Fingerhut, 2016). In addition, policies or legislation - such as those endorsed by the Republican party - that are discriminatory to transgender youth may exacerbate existing health disparities (Barbee et al., 2022). Voting patterns are consistently used in the construction of LGBTQ+ community climate indices, often using county-level rates of voting for ‘progressive’ parties in key elections (Doyle & Molix, 2015; Gower et al., 2019; Hatzenbuehler, 2011; Lick et al., 2012; Oswald et al., 2010; Oswald et al., 2018).

**Political Representation** While no indices use political representation of LGBTQ+ politicians, visibility of LGBTQ+ role models is affirmed as an asset for youth (Eisenberg et al., 2018; Paceley et al., 2020a). Election of LGBTQ+ politicians may be an indicator of societal support for LGBTQ+ communities and is associated with adoption of pro-LGBTQ+ policy and legislation (Reynolds, 2013). In addition, the political sphere is of specific concern to TNB youth, whose futures are often determined by municipal- or state-level policies (Paceley et al., 2020a; The Trevor Project, 2022). Representation is also of important concern to TNB youth - according to The Trevor Project (2022), a majority of LGBTQ+ youth respondents indicated that LGBTQ+ representation in movies, music, athletics, or within companies make them feel more positive about being LGBTQ+.

**Pride Events** Pride parades, as visible displays of LGBTQ+ support, are important indicators of community climate for LGBTQ+ youth. (Eisenberg et al., 2018). LGBTQ+ Pride events commemorate the events of the Stonewall Riots in 1969, a response to a police raid of the Stonewall Inn in New York City (Bruce et al., 2013). While Pride events today differ from their origin as a liberatory event, many events still contest the status quo and help instill collective identity in participants (Bruce et al., 2013). Pride festivals and marches ‘queer’ public space, historically transforming city streets into places of celebration and protest against structural homophobia and transphobia (Johnston & Waitte, 2015). Pride events bring non-normative sexuality and gender expression - often relegated to private life - into the public setting (Johnston & Waitte, 2015). Johnston and Waitte (2015) also argue that pride events create ‘geographies of belonging,’ reshaping community space into inclusive places that support pride in LGBTQ+ identity. Youth have indicated that pride parades may bring visibility and support for LGBTQ+ individuals in an area (Paceley, 2016), cementing their importance in creating a positive community climate for TNB youth.

**Government Recognition of Pride Month** Recognition of pride month by cities and counties has become divisive in recent years. Physical violence emerged at a school board meeting over a pride month declaration in Glendale in June 2023, which attracted several hundred protestors from the community (Ebrahimji & Mossburg, 2023). Similar high-profile events of protest and discourse around city recognition of pride month occurred in Temecula (Horseman, 2023), Delano (Doneghan, 2023), Huntington Beach (Chinchilla, 2023), and Red Bluff (Ketcham, 2023). In June 2023, Orange County voted to ban the display of pride flags on all county property (Cormaci & Nguyen, 2023). The discourse surrounding public recognition of pride month by city councils and county board of supervisors has a long history, and in California, the example of Kingsburg in the San Joaquin Valley gained national attention when the city council denied formal recognition of pride month (Cowan, 2021). Symbolism, such as city recognition of pride month, is an important component of LGBTQ+ youth construction of safety (Wolowic et al., 2016), and anti-LGBTQ+ discourse within communities shapes perceptions of community climate (Paceley et al., 2020a; Paceley et al. 2023).

**Informed Consent Hormone Replacement Therapy** The original standards of care for transition related health care was published in 1979 by the World Professional Association for Transgender Health, or WPATH (Coleman et al., 2022). Initial WPATH standards of care required mental health evaluation and a requirement of a ‘letter of readiness,’ pathologizing transition and creating obstacles for receiving gender affirming hormone treatment and surgery (Amengual et al., 2022). Readiness criteria throughout versions of WPATH were detailed and specific, defining requirements for qualifications of mental health practitioners and a diagnosis of gender identity disorder/dysphoria, and restricting access to care by mandating that patients treat other psychiatric disorders before receiving care or have exhibited “mental readiness” (Amengual et al., 2022; Verbeek et al., 2022). While each version of these standards of care evolve towards granting transgender patients more autonomy (Coleman et al., 2022), these criteria have been adopted by insurance companies and additional gatekeepers to determine eligibility for transition related care. Despite WPATH’s standards of care, practitioners differ in their approach to providing gender affirming care, varying by comfort and experience in treating transgender clients and disposition regarding documentation and pathologization of gender identity (Ehrbar & Gorton, 2010).

The informed consent model (ICM) of transgender related care differs from WPATH’s model of readiness criteria and medical gatekeeping. ICM clinicians do not require a letter from a mental health provider or diagnosis, emphasizing the autonomy of patients to make decisions for their own transition (Ashley et al, 2021). Ashley et al. (2021) consider strong ICM clinicians as viewing informed consent as the only prerequisite to receiving transition related care and that the role of ICM is to provide care that assists patient transition-related goals rather than impose standards onto patients. Locations of transgender-specific medical care as a whole vary across space, and care may be more accessible in states with a more favorable climate for transgender adults (Everhart et al., 2022). And while California as a whole may have more clinics than the rest of the country - an estimated 131 sites, more than all other states (Everhart et al., 2022) - the presence of informed consent model clinics reflects the existence of gender-affirming providers in the area. Adoption of ICM is an indicator of clinician knowledge and attitudes towards trans care (Ashley et al., 2021). Clinicians that do not receive institutional support or are scared of backlash may favor models of transition-related care that are more stringent (Ashley et al., 2021). Spatial access to providers offering ICM is an appropriate indicator of transgender healthcare access and may be a useful indicator of clinician and community ideology towards transition related care.

**Research Aims**

This study builds off of previous theory from transgender studies (Lennon & Mistler, 2014; Singer, 2015) and theoretical models of LGBTQ+ health, including minority stress model (Hendricks & Testa, 2012; Meyer, 2003) and theories of structural stigma (Hatzenbuehler, 2014; Herek, 2007), to construct a new measure of community support and safety for TNB youth. Previous research on community context and LGBTQ+ health has neglected to include transgender participants or incorporate TNB-specific indicators of structural stigma (e.g., Duncan et al., 2014; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2012; Lick et al., 2012; Oswald et al., 2010). This is especially concerning given the socio-political context that TNB youth of today develop in (Elster, 2022; MAP, 2023a), shaping their opportunity and wellbeing (Redfield et al., 2023). TNB youth report higher rates of suicidal ideation and depression symptoms (Almeida et al., 2009; Gower et al., 2018a), in part because of conditions such as discrimination (Gower et al., 2022), internalized stigma (Chodzen et al., 2019, Katz-Wise et al., 2021), pressure to conform to gender norms (Chodzen et al., 2019; Gower et al., 2018a), and lack of access to affirming healthcare (Rider et al., 2018). To appropriately capture how structural stigma for TNB youth varies across space, this study has three aims:

**Aim 1: Create TNB Youth Community Climate Index** Using Principal Components Analysis, the above eight indicators of community climate were combined into a single measure of TNB specific community climate, capturing structural and societal stigma across dimensions of political ideology, visibility, and resource access.

**Aim 2: Explore Community Characteristics by Climate** To build off of previous research assessing communities with poor community climates, characteristics of incorporated cities by climate score were assessed, including population size, demographics, and California region.

**Aim 3: Explore District-Level Health Outcomes by Climate** The TNB Youth Community Climate Index was applied at the school district level, and non-binary student social-emotional health outcomes were compared by community climate to identify differences in health outcomes for adolescents residing in areas with poor climate.

**Chapter 3: Methods**

This study employs many of the same methods as other community climate studies, using multiple indicators to represent different dimensions of climate to create a holistic measure of safety and support (e.g., Gower et al., 2019; Oswald et al., 2010). Within the literature review, I identified theories of structural transphobia and frameworks of how this stigma shapes TNB health outcomes. Indicators representing structural stigma, such as political affirmation of LGBTQ+ rights and healthcare access, are representative of the current socio-political discourse regarding TNB youth autonomy and existence. This study developed a new measure of community climate using the minority stress model and concepts of structural stigma as a theoretical framework, noting how discrimination, political disenfranchisement, and perceptions of safety shape youth health outcomes.

In this study, I created an index of community climate for TNB youth using Principal Components Analysis. This index was created using eight variables that functioned as indicators of climate at the county- and city-level. The TNB youth community climate index was then used to categorize cities in California according to climate and explore characteristics of communities and school districts determined to have poor, moderate, or positive climates for TNB youth. Anti-LGBTQ+ structural stigma varies across space (Hatzenbuehler, 2014), and components of TNB wellbeing - such as access to medical care (Olsavsky et al., 2023; Allen et al., 2019; Green et al., 2022) or discriminatory policies and legislation (Barbee et al., 2022; Paceley et al., 2023) - shape youth health. Through identifying low-climate and high-climate incorporated cities within California, I aim to identify common characteristics of communities that may be affirming for TNB youth and how this is associated with poor social emotional health outcomes.

**Study Setting**

The setting for the study is the State of California. This setting is unique to the remainder of the United States, as the political environment is more amenable to transgender youth (MAP, 2023b) and the state is “well-resourced,” with the best access to pediatric gender clinics than any other state (Weixel & Wildman, 2022) and an abundance of LGBTQ+ centers (CenterLink). California has the largest transgender population in the United States, with an estimated 150,100 transgender adults and 49,100 transgender youth (Herman et al., 2022). However, there is significant variation among communities within California, ranging from highly urbanized cities (i.e., Los Angeles) to rural and remote towns (i.e., Alturas). Like most of the country, California has seen increases in instances of anti-LGBTQ+ violence (California Department of Justice, 2023). While the statewide political environment of LGBTQ+ support is positive, there have been high-profile instances of controversy within the last year, such as violence in response to pride month recognition by Glendale School District (Ebrahimji & Mossburg, 2023) and Orange County’s ban of flying the pride flag on county property (Cormaci & Nguyen, 2023).

Even with political protections for LGBTQ+ communities in California, poor health outcomes for LGBTQ+ persist. However, understanding the state of health for TNB youth in California is difficult as data on health outcomes at the scale of school district, county, or even statewide is limited. Data collection on TNB youth health faces significant challenges (Labuski & Keo-Meier, 2015; Reisner et al., 2015) and while the California Healthy Kids Survey is the first and largest representative sample of transgender youth (De Pedro et al., 2017), publicly available data on transgender youth health outcomes in California are difficult to access. Data on LGB youth are more readily available, and from the 2017-2019 CHKS data, 67.3% of LGB youth had reported depression-related feelings and 43.7% reported suicidal ideation. These outcomes vary across California counties by county size and location: ex., urban Santa Clara County reported lower outcomes for depression-related feelings (32.9%) and suicidality (30.9%), while rural Tuolumne County reported higher outcomes for both (81.2% and 65.3% respectively). 468 incorporated cities throughout the state of California were included in the study to examine differences in community climate across the state.

**Theoretical Framework**

Community climate indicators are “objectively measurable phenomenon,” including policies, political affiliation, and presence of LGBTQ+ individuals within the community (Oswald et al., 2010, p. 215). This concept of community climate was built off of Meyer’s (2003) minority stress model, extending concepts of minority-related stressors into the context of the surrounding community (Oswald et al., 2010). Models of community climate also often pull from the concept of structural stigma, the institutional and societal oppression that impacts LGBTQ+ health (Hatzenbuehler, 2014; Herek, 2007). Pulling from theories of structural stigma, indicators of community climate may be measures of political and ideological climate, such as social policy and political ideology (Hatzenbuehler et al., 2009; Hatzenbuehler 2011). Indicators of community climate may also represent symbolic support or rejection within the community context such as the existence of LGBTQ+ individuals in the region (Oswald et al., 2010) or presence of ‘resources’ such as youth organizations or LGBT centers (Paceley et al., 2020a). ‘Symbolic’ indicators of societal oppression relate to Meyer’s (2003) inclusion of expectations of discrimination as a proximal stressor negatively impacting LGBTQ+ health.

Common measures or indicators of community climate included state- and municipal-level policies addressing LGB discrimination (e.g., Doyle & Molix, 2015; Lick et al., 2012); political ideology indicated by voting for LGBTQ+ supportive major political parties (e.g., Gower et al., 2019; Oswald et al., 2010) and share of votes for LGBTQ+ (anti-)discriminatory policies (e.g., Hatzenbuehler et al., 2011; Perales & Todd, 2018); visibility of LGBTQ+ populations indicated by proportion of households with same-sex partnerships in relation to total households, often taken from the U.S. Census (e.g., Gower et al., 2019; Oswald et al., 2010); and number of LGBTQ+ serving organizations or resources (e.g., Gower et al., 2019; Hatzenbuehler, 2011; Oswald et al., 2010). Several studies created a community climate index composed of several indicators. Oswald and colleagues’ (2010) Community Climate Index was one of the first and constructed the index of seven indicators using Principal Components Analysis. Other studies created indices using factor analysis (Hatzenbuehler, 2011) or by constructing an inventory of climate indicators (Doyle & Molix, 2015; Gower et al., 2019).

**Data Collection**

***California Cities***

Community climate studies often use administrative units when quantifying political climate, especially at the state level to associate LGBTQ+ policies and legislation with health outcomes (Doyle & Molix, 2015; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Lick et al., 2012; Woodford et al., 2015). This unit of analysis is challenging for addressing TNB youth health, as representative health data from large surveillance surveys is not available for many U.S. states. Other studies assess climate at the county level in settings such as Southern Illinois (Oswald et al., 2010) and Oregon (Hatzenbuehler, 2011; Hatzenbuehler et al., 2011) that exhibit more homogeneity than California’s 88 counties, which are varied in county population, urban/rural setting, and area. Gower and colleagues (2019) assessed community climate within buffers from schools, including all cities within buffers in analysis. This enabled data collection of locations of LGBTQ+ youth support services, similar to this study. Within this study, locations of TNB youth specific services were concentrated in cities and urban centers. Additionally, defining ‘community’ as the city that TNB youth reside in allows exploration of the political dimension of stigma, as city governments make decisions relating to LGBTQ+ safety and affirmation that shape climate.

For these reasons, only incorporated cities were included in the study (n = 468). Some indicators, such as city pride recognition, would not apply to Census Designated Places (CDP), so they were excluded (n = 1129). Cities range in size from Plymouth (pop. 1,031) to Los Angeles (pop. 3,973,278), so constructing a uniform index not skewed by population size alone held challenges. Demographic and population data was pulled from the 2020 5-year American Community Survey by place. Because of this, only political representation as an indicator uses population as a denominator. All places were assigned eight indicators that were used to construct a TNB Youth Community Climate Index for each city.

***Community Climate Indicators***

**Voting Patterns in Federal Elections** Patterns of political participation are related to LGBTQ+ health and have been used within research as an indicator of community climate (Doyle & Molix, 2015; Hatzenbuehler et al., 2009). Percentage of votes for Republican candidate Donald J. Trump out of total votes in the 2020 Presidential election was used as a county-level indicator of anti-transgender ideology. Data on election results was sourced from the MIT Election Data & Science Lab (2020). Votes for former President Trump were chosen as an indicator due to his rescinding of policies and protections for transgender Americans and endorsement of anti-trans rhetoric during his administration (National Center for Transgender Equality, 2020). Percentage of votes was transformed into a negative integer to signify positive climate. All cities within each county received their voting percentage indicator - for example, all cities within Alameda County have a score of 17.7%.

**Proportion of Same Sex Households** A multitude of climate indices use American Community Survey data of same sex households as an indicator of community climate (Gower et al., 2019; Hatzenbuehler, 2011; Oswald et al., 2010). Data on same sex households were taken from the 2020 5-year American Community Survey at the block group level. Number of same sex households was composed of both households married and cohabiting same sex couples. Same sex households and total households were interpolated to the place level. Indicator of proportion of same sex households was determined as the ratio of same sex households to every 1,000 total households.

**Political Representation** While no indices use political representation of LGBTQ+ politicians, visibility of LGBTQ+ role models is confirmed to be an asset for youth (Eisenberg et al., 2018; Paceley et al., 2020a). In addition, the political sphere is of specific concern to TNB youth, whose futures are often determined by municipal- or state-level policies (Paceley et al., 2020a; The Trevor Project, 2022). Data on political representation were sourced from the Victory Institute’s Out for America database of openly LGBTQ+ politicians. 135 politicians serving in municipal, county, and school district positions were used within the study. Political representation was determined if a politician represented the residents of a city directly - for example, LGBTQ+ school board members or county supervisors that represented cities within their district were counted. 95 cities were represented by 1 or more LGBTQ+ politician(s). Indicator of political representation was defined as the number of LGBTQ+ politicians per 100,000 residents.

**Youth Services** Criteria for inclusion of youth services in the study were that each program must have held programming for LGBTQ+ youth specifically, served the LGBTQ+ community with specific programs for youth, or youth programs that have additional services specific to LGBTQ+ youth. Criteria for inclusion is similar to the LGBTQ Supportive Environments Inventory (Gower et al., 2019). List of youth services were determined through review of databases, social media, and resource pages. LGBTQ+ Centers were identified from CenterLink, an organization focused on capacity building for centers. This database is updated frequently. Additionally, a CDE resource page that offers LGBTQ+ resources by county was used to identify organizations. CDE’s curated list of organizations by region is updated frequently - the list was last updated November 2, 2022. Additional youth programs were identified through references from other resource pages, such as county government websites or LGBTQ+ resource centers. Locations of PFLAG Chapters within California were taken from the organization chapter database. Included organizations were confirmed to be open and functioning with a review of websites and/or social media accounts such as Instagram and Facebook. 151 youth services were used in the study, including 61 LGBTQ+ Centers, 30 PFLAG organizations, and 61 additional youth programs and services. Addresses were recorded and geocoded in R. While some youth services are located in physical locations, such as a majority of LGBTQ+ Centers (Movement Advancement Project, 2018; Allen et al., 2012), many youth services included operate in secondary or impermanent locations such as churches, community centers, or local colleges. Youth services proximity was a continuous variable defined as distance to nearest LGBTQ+ Center, youth program, or PFLAG Chapter location in miles. To standardize across all cities, distance from the centroid of each California block group to the nearest location was calculated. The variable for each place is the average of all distances of block groups within city limits. This measure of distance is an indicator of proximity, not access - presence of LGBTQ+ organizations within a community hold a symbolic role besides their use by LGBTQ+ youth (Eisenberg et al., 2018; Paceley et al., 2019; Paceley et al., 2020a). Total number of resources within each place, and number of resources proportionate to total population, was attempted as an indicator, but both were skewed because of the wide range of city sizes and populations.

**Informed Consent HRT Providers** Proximity to an informed consent HRT location is an indicator specific to structural stigma for TNB individuals (Ashley et al, 2021; Everhart et al., 2022). Locations of informed consent HRT locations are sourced through Erin's Informed Consent HRT Map, a map of clinics and providers managed by transgender rights activist Erin Reed. Erin’s Map has been used in research to assess spatial disparities in access to gender affirming care (Everhart et al., 2022) Locations of providers have been located by Erin with additional input from community members. 150 informed consent HRT locations were used within the study. Informed consent HRT proximity was a continuous variable defined as distance to nearest informed consent HRT location in miles. To standardize across all cities, distance from the centroid of each California block group to the nearest location was calculated. The variable for each place is the average of all distances of block groups within city limits. This indicator is of proximity, not access to care - many of these locations do not serve patients under 18. However, this indicator is a measure of community support for transgender individuals, not medical access, as presence of informed consent HRT locations may be a sign of each community’s medical providers understanding and willingness to treat trans patients (Ashley et al, 2021).

**Pediatric Gender Care** List of pediatric gender clinics were determined through review of Human Rights Commission’s interactive map of comprehensive care programs for TNB youth, social media, and resource pages. Included locations were confirmed to be open and functioning with a review of websites and/or social media accounts such as Instagram and Facebook. 19 pediatric gender care locations were used within the study. Addresses were recorded and geocoded in R. Compilation of pediatric gender care locations faced challenges - only larger facilities, such as the UCLA Gender Health Program, UCSF Child and Adolescent Gender Center Clinic, and Kaiser Permanente Gender Pathways Clinic, were easily identified. This may be because of increased threats against practitioners offering gender-affirming care. Additional locations were identified using a crowdsourced map. Pediatric gender care proximity was defined as distance to nearest pediatric gender clinic location in miles. To standardize across all cities, distance from the centroid of each California block group to the nearest location was calculated. The variable for each place is the average of all distances of block groups within city limits.

**Pride Events Pride** parades, as visible displays of LGBTQ+ support, are important indicators of community climate for LGBTQ+ youth. (Eisenberg et al., 2018; Paceley, 2016). Pride parades were identified by review of LGBTQ+ resource pages and directories. Each California city was reviewed for a pride parade through use of a search engine with a procedure for search process (e.g., [city name] Pride Event). Some variation existed within pride events: many smaller cities held events in public spaces such as parks or plazas, and not all cities held events during the month of June. Pride events must have taken place between July 2022 to June 2023 to be included within the dataset. Pride events could only be included if publicly Criteria for inclusion for events included: visible event within public space (i.e., street, block party, public park); accessible to youth under 18; explicitly celebrating ‘LGBTQ+ pride.’ Cities were categorized as having a pride event (1) or not having a pride event (0) to create a dichotomous variable. Procedure for data collection is similar to the LGBTQ Supportive Environments Inventory (Gower et al., 2019).

**Pride Recognition** All municipalities and counties within the State of California were assessed for formal recognition of LGBTQ+ Pride Month in June 2023. Each city and county was reviewed for formal recognition of pride through use of a search engine with a procedure for search process (i.e., [city/county name] Pride Proclamation; [city/county name] Pride Flag Raising). This was supplemented by review of social media, city council agendas in the month of June, and news articles. Formal recognition of Pride Month was determined as a proclamation or recognition of Pride 2023 by city council/board of supervisors or a display of the Pride Flag, Progress Pride Flag, or other flag representing the LGBTQ+ community on city/county properties. Both city and county level recognition were used to create an indicator of pride recognition. Indicator is scored as 0 = no recognition, 0.5 = county recognition alone, 1 = municipal recognition alone, and 1.5 = both county and municipal recognition.

***School District Variables***

Social emotional health outcome variables were taken from the California Dept. of Education’s annual 2021/2022 California Healthy Kids Survey (CHKS). Not all California school districts participate in the CHKS each year, but the state-subsidized survey reaches a majority of public-school districts within the state. From 2019-2021, the CHKS was administered to approximately 1.11 million students. An additional self-reported demographic question assessing non-binary gender was included for the first time in the 2020/2021 survey. Use of data from CHKS or the California School Climate, Health, and Learning Survey System (Cal-SCHLSS) is common in studies of TNB youth health (Day et al., 2017; Day et al., 2018; De Pedro et al., 2017; Perez-Brumer et al., 2017).

To ensure a representative sample, school districts with 900 or fewer students enrolled per grade must be surveyed regardless of number of schools; within districts with ten or fewer schools at a surveyed grade level, all schools must be surveyed (Cal-SCHLSS, 2017). Inclusion of non-traditional schools in the survey is optional. CDE requires all those participating to administer this Core Module to 7th and 9th grades and collects detailed demographic data on race, ethnicity, gender, and other subgroups to determine representativeness of the sample. Five indicators for social-emotional wellbeing were used in the study: suicidality, social-emotional distress, chronic sadness and hopelessness, optimism, and life satisfaction. These indicators are based on survey items from the Middle School and High School core survey (see Appendix, Table 17).

School districts included survey responses from 7th, 9th, and 11th grades. While some districts had samples of all three grades, other schools did not have viable samples of non-binary student respondents or only included students in one or two grades (i.e., High School Districts). School districts included within analysis must meet three criteria: a viable sample of non-binary student respondents (defined by CHKS as 10 or more), location within incorporated cities, and located within one city OR multiple cities sharing the same climate. School districts only located within Census Designated Places (n = 5) would not be able to correspond to a category of low, moderate, or high climate index. Some school districts covered multiple cities (Abc Unified School District, Tamalpais Union High School District) and were excluded if cities within district coverage differed in climate. For example, Merced Union High School District was excluded because coverage included both schools in communities of Merced (moderate), Atwater (low), and Livingston (low).

**Table 2.**

Selection Procedure for School District Sample

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **7th Grade** | **9th Grade** | **11th Grade** | **Total** |
| All California  School Districts | - | - | - | 942 |
| Viable Sample of Non-binary Respondents | 116 | 103 | 95 | 155 |
| Located Within Incorporated Cities | 111 | 100 | 92 | 150 |
| Located Within One City OR Multiple Cities with Same Climate | 95 | 78 | 72 | 125 |
| Final Sample Size | 95 | 78 | 72 | 125 |

**Data Analysis**

All data analysis was performed in R, a statistics software. Principal Components Analysis was conducted using the following eight variables across 468 places: voting patterns in federal elections, proportion of same sex households, political representation, proximity to youth services, proximity to informed consent HRT providers, proximity to pediatric gender care, pride events, and pride recognition. PCA is a statistical technique used to reduce multiple variables into uncorrelated components representing a separate dimension of the data. PCA was based on a correlation matrix. Three principal components were chosen through review of the percentage of variance shown by each component. The TNB Community Climate Index was calculated as the average of all three principal components. Cities were categorized according to community climate. Cities in the lowest quartile of the index (n = 117) were categorized as “low;” cities in the highest quartile (n = 117) were categorized as “high.” The remaining half of cities in the middle (n = 234) were categorized as “moderate.”

Characteristics of cities within each category were explored through descriptive statistics, examining differences among groups by median household income, racial/ethnic makeup (percent of total residents African American, percent Hispanic/Latinx, percent Asian American, and percent White), total city population and city setting. Analysis of city setting included assessing spread of low, moderate, and high climate cities among counties determined to be metropolitan, micropolitan, or rural. Metropolitan and micropolitan areas are determined by the United States Office of Management and Budget. Counties were divided according to 2020 OMB delineation. Metropolitan Statistical Areas were split by those with cores of 2.5 million or more (n = 7), representing the most urbanized regions of the state, and those with under 2.5 million residents (n = 30). Micropolitan counties are defined as having a core of more than 10,000 but less than 50,000 residents (n = 8). Rural counties were defined as remaining counties not metropolitan or micropolitan (n = 13). See counties defined by 2020 OMB delineation in Appendix (Table 19, Figure 12). Spread of cities by climate was also assessed by category of city size: large city (pop. 500,000+, n - 6), mid-sized city (pop. 100,000 - 499,999, n = 67), small city (pop. 50,000 - 99,999, n = 103), and town (pop. < 49,999, n = 292). Concentration of low-climate and high-climate counties were also explored across regions of California defined by the 2020 California Census’ California Complete Count Office See defined regions in the Appendix (Table 19). In addition, three indicators specific to transgender climate - proximity informed consent HRT and pediatric gender care - were explored across community climate, size, and urban classification.

Health outcomes by school district were explored by community climate to explore differences in social emotional health of non-binary youth in positive and negative climate settings. Descriptive statistics were performed to assess social emotional health outcomes for non-binary youth in the school district sample. Five outcome variables were used: chronic sadness and hopelessness, social emotional distress, suicidality, optimism, and life satisfaction. Analysis was performed for 7th, 9th, and 11th grades within school districts - to account for overlap - across community climate categories. Mean and standard deviation were calculated for each outcome variable within low, moderate, and high climate settings.

**Chapter 4: Results**

Building from previous literature on LGBTQ+ community climate and health, I developed a TNB Youth Community Climate Index representing eight variables and capturing three identified dimensions of TNB Youth Community Climate: structural stigma, existence of LGBTQ+ community, and societal support. This index was used to categorize 468 incorporated cities within California to identify patterns in distribution and community characteristics among cities with high and low climate index scores. The creation and application of the climate index satisfied the three aims of the study: create a TNB Youth Community Climate Index, explore community characteristics by climate, and explore district-level health outcomes by climate.

**Aim 1: Create TNB Youth Community Climate Index**

***Principal Components Analysis***

Principal Components Analysis was performed on eight variables functioning as indicators of TNB youth community climate: percentage votes for Donald Trump, percentage of same sex households, political representation, pride recognition, pride events, and proximity to youth services, pediatric gender clinics, and informed consent HRT. Descriptive analysis of continuous variables showed variance among all indicators except political representation (Table 3.1). The mean percentage of LGBTQ+ politicians to residents within the sample is a ratio of 0.747 local politicians per 100,000 residents; however, 80.13% (n = 375) cities within the sample are not represented by LGBTQ+ politicians. The mean variable of percentage of votes for Trump by county was 36.43%. Mean percentage of same sex households was approximately 0.3%, with outliers of gay enclaves like Palm Springs (7.48%) and West Hollywood (4.42%) and 38 cities (8.12%) with no recorded same sex households. The average proximity variables (average of all distances in miles to nearest resource by block group) for youth services (11.99 miles) and informed consent HRT locations (12.5 miles) were under 15 miles across California cities. In comparison, pediatric gender clinics were, on average, farther in proximity, with a mean variable of 42.65 miles.

Categorical variables demonstrated some variance (Table 3.2). 73.08% of cities included some form of pride recognition, whether it was at the county level only (8.33%), city level only (29.91%), or recognized at both levels (34.83%). However, a majority of cities (75%) did not hold pride events. Both indicators of pride events and political representation were included to represent crucial dimensions of community climate - visibility of LGBTQ+ societal support. A correlation matrix of all eight variables (Table 4) demonstrated that many variables are strongly correlated with each other - however, pride events, political representation, and percentage of same sex households did not. Percentage of same sex households has been incorporated into most community climate indices (e.g., Gower et al., 2019; Hatzenbuehler, 2011; Lick et al., 2012; Oswald et al., 2010) and is an important measure to include for accurate representation of climate.

**Table 3.1**

Characteristics of Continuous Indicators of TNB Youth Community Climate

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Mean** | **Median** | **SD** | **Range** |
| **Percent Voted for Donald Trump**  *Percentage of Votes for 2020 Presidential Candidate* | 36.43% | 36.74% | 12.152 | 12.72% - 74.83% |
| **Percentage of Same Sex Households**  *Same Sex Households per 1,000 Total Households* | 3.009 | 2.153 | 4.749 | 0 - 71.731 |
| **Political Representation**  *LGBTQ+ Politicians per 100,000 residents* | 0.747 | 0 | 2.895 | 0 - 40.766 |
| **Youth Services - Proximity (mi)**  *Mean Distance Across City Block Groups* | 11.994 | 6.534 | 15.351 | 0.45 - 114.665 |
| **Pediatric Gender Clinic - Proximity (mi)**  *Mean Distance Across City Block Groups* | 42.654 | 20.991 | 47.46 | 0.563 - 243.852 |
| **Informed Consent HRT - Proximity (mi)**  *Mean Distance Across City Block Groups* | 12.498 | 6.799 | 15.865 | 0.872 - 114.01 |

**Table 3.2.**

Characteristics of Categorical Indicators of TNB Youth Community Climate

|  |  |
| --- | --- |
|  | **Cities**  % (n**)** |
| **Pride Events** (value) |  |
| Pride Event (0) | 25% (117) |
| No Pride Event (1) | 75% (351) |
| **Recognition of Pride** (value) |  |
| No Recognition (0.0) | 26.92% (126) |
| County Recognition Only (0.5) | 8.33% (39) |
| City Recognition Only (1.0) | 29.91% (140) |
| City and County Recognition (1.5) | 34.83% (163) |

**Table 4**

Correlation Matrix of Eight TNB Youth Community Climate Indicators

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **1** | **Same Sex Households** | 1 |  |  |  |  |  |  |
| **2** | **Political Representation** | 0.196 | 1 |  |  |  |  |  |
| **3** | **% Voted for Donald Trump** | 0.131 | 0.166 | 1 |  |  |  |  |
| **4** | **Pride Events** | 0.170 | 0.024 | 0.103 | 1 |  |  |  |
| **5** | **Recognition of Pride** | 0.200 | 0.106 | 0.620 | 0.260 | 1 |  |  |
| **6** | **Youth Services** | 0.167 | 0.101 | 0.416 | 0.092 | 0.324 | 1 |  |
| **7** | **Pediatric Gender Clinic** | 0.171 | 0.130 | 0.628 | 0.037 | 0.436 | 0.626 | 1 |
| **8** | **Informed Consent HRT** | 0.165 | 0.103 | 0.479 | 0.092 | 0.354 | 0.865 | 0.642 |

Principal Components Analysis returned 8 components. Through review of a scree plot of percentage of variance by principal component (Figure 1) and component eigenvalues, three components were kept using Kaiser’s criterion (Kaiser, 1960) of keeping components with eigenvalues over 1 (Table 5). First three components - and the index itself - captured 69.21% of the variance within the data. Additionally, quality of representation for all eight indicators was assessed within the eight components (Figure 2). The first three components represent all eight indicators appropriately.

**Figure 1.**

Percentage of Variance by the Principal Components of TNB Youth Community Climate Indicators - Scree Plot

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**Table 5**

Eigenvalues of the Principal Components of TNB Youth Community Climate Indicators

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Eigenvalue** | **Variance (%)** | **Cumulative Variance (%)** |
| **Dim. 1** | 3.3096233 | 41.37% | 41.37% |
| **Dim. 2** | 1.2078243 | 15.10% | 56.47% |
| **Dim. 3** | 1.0190072 | 12.74% | 69.21% |
| **Dim. 4** | 0.9025670 | 11.28% | 80.49% |
| **Dim. 5** | 0.7376229 | 9.22% | 89.71% |
| **Dim. 6** | 0.4069764 | 5.09% | 94.80% |
| **Dim. 7** | 0.2853922 | 3.57% | 98.36% |
| **Dim. 8** | 0.1309865 | 1.64% | 100% |

**Figure 2**

Quality of TNB Youth Community Climate Variable Representation by Principal Component

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Contribution of variables to each component was assessed (Figure 3). Percent votes for Trump, pride recognition, and proximity to youth services, pediatric gender clinics, and informed consent HRT locations contributed most to Component 1. Pride events and percentage of same sex households contributed most to Component 2; pride events and political representation contributed most to Component 3. For all included components, variables contributing above average were proximity to informed consent HRT locations, proximity to youth services, proximity to pediatric gender clinics, political representation, and pride events (Figure 4). Both indicators of proximity to gender-affirming care were strong contributors to the climate index - this is vital, as these represent the only indicators specific to structural transphobia.

Component 1 represents the dimension of structural stigma, including both indicators of political support and all three TNB youth specific indicators of community climate. Structural transphobia presents itself within our political and healthcare systems (Link & Phelan, 2011), and the recognition of LGBTQ+ rights, access to pediatric gender care, and attitude towards gender affirming care are all facets of current political discourse in the United States (Elster, 2022; MAP, 2023). This component represents structural stigma within institutions of power as a dimension of community climate. This stigma presents itself at the level of the incorporated city as difficulty in accessing gender care for minors or participating in LGBTQ+ youth programs, living in a community that does not officially recognize LGBTQ+ Pride Month as a way to show support to residents, or having a higher concentration of residents who voted for President Donald Trump in the 2020 election, effectively supporting his anti-transgender rhetoric. Alturas, in Modoc County, ranked lowest within the dimension of structural stigma. Alturas is one of the most rural towns within the state and within a county with a majority of votes in the 2020 election for Donald Trump (71.59%). West Hollywood ranked highest, reflecting its recognition of pride at the city and county level and proximity to pediatric gender clinics (m = 1.04 mi) and LGBTQ+ youth services (m = 0.51 mi).

Component 2 represents the existence of LGBTQ+ community as a dimension of community climate. Both pride events and percentage of same sex households are strongly represented within this component. Visibility of LGBTQ+ adults and feelings of inclusion in a broader LGBTQ+ community is an important asset for youth and shapes perceptions of safety and support within their environment (Eisenberg et al., 2018; Paceley et al., 2020a). LGBTQ+ youth use symbolism to construct their perceptions of community climate (Wolowic et al., 2016), and high proportions of same-sex couples and existence of LGBTQ+ pride events are one symbol of affirmation. Jurupa Valley ranked lowest in the dimension of existence of LGBTQ+ community, with no pride event and a low proportion of same sex households to total households (1.04 to every 1,000 total households), while Palm Springs ranked highest, reflecting its status as a gay enclave and the city with the highest proportion of same sex households (71.73 to every 1,000 total households).

Component 3 represents societal support for LGBTQ+ community members. LGBTQ+ political representation is strongly represented within this component, followed by pride events within the community. Election of LGBTQ+ politicians may be an indicator of societal support (Reynolds, 2013), defined as cultural norms and beliefs surrounding LGBTQ+ people (Herek, 2007). Similarly, the existence of pride events is a public demonstration of affirmation and support for LGBTQ+ residents. The city ranked highest in societal support is Ross, in Marin County, reflecting its political representation and its high values in other indicators of support; inversely, Mammoth Lakes in Mono County ranked the lowest.

**Figure 3.**

Contribution of TNB Youth Community Climate Variables by Principal Component

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**Figure 4.**

Contribution of TNB Youth Community Climate Variables - Across Principal Components 1-3

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The Final TNB Community Climate Index was constructed by averaging the three principal components (structural stigma, existence of LGBTQ+ community, societal support), representing the variation across all eight indicators. All California cities within the study sample were assigned a TNB youth community climate index score. This score was then used to assign communities into categories of TNB youth climate. ‘Low’ climate was defined as cities within the lowest quantile of the climate index score (-2.3604509 to -0.37824823), ‘high’ climate was defined as cities within the highest quantile (0.2811561 to 5.8745906), and ‘moderate’ was defined as the half of cities in between (-0.3677128 to 0.27840367). Mean coordinates of cities between the three components show that the high climate group consistently is positively associated with principal components and the low climate group is strongly negatively associated with the first component of structural stigma (Table 6).

**Table 6.**

Coordinates of TNB Youth Community Climate Categories by Principal Components.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Structural Stigma** | **Existence of LGBTQ+ Community** | **Societal Support** |
| **High Climate** | 1.65 | 0.775 | 0.115 |
| **Moderate Climate** | 0.384 | -0.348 | -0.126 |
| **Low Climate** | -2.42 | -0.0788 | 0.138 |

Assessment of principal components have shown that the climate index is a reliable measure of the variance across eight climate indicators and strongly retained the impact of three indicators specific to structural transphobia and TNB youth.

**Aim 2: Explore Community Characteristics by Climate**

Cities with high community climate scores are more likely to have a larger population (x̄ = 123,528.96) and higher median household income (x̄ = $115,628.67) than low-climate cities (x̄ = 24,380.53; x̄ = $59,754.34) (Table 7). Of the six largest cities in California, all but one (Fresno) was categorized as a high-climate city. Low-climate cities were more likely to have a higher percentage of Hispanic/Latinx residents (47.05%) - this is not directly related to climate but is a reflection of the regional concentration of low-climate cities in the rural areas of the San Joaquin and Sacramento Valleys. When examining the spread of cities by community setting, some trends emerge. Large metropolitan counties have the largest percentage of high-climate cities (39.13%) and the largest number of high-climate cities overall (n =72) (Table 8). Large metropolitan counties had no cities indicated as low-climate. This is a stark contrast to the proportion of counties in micropolitan and rural counties with low-climate indicators - 76.74% of towns in micropolitan counties and 100% of towns in rural counties were determined to have poor climate for TNB youth. Mid-sized metropolitan counties had a more even spread, but with more low-climate cities (34.41%) than their more urban counterparts. While rural and micropolitan counties have a larger proportion of low-climate counties, 72.65% of low-climate cities were within mid-sized metropolitan counties. Cities exhibiting positive climate for TNB youth were almost exclusively found within metropolitan counties, with only a small percentage of high-climate (1.71%) and moderate-climate (0.85%) cities located within micropolitan counties. See Figure 12 in Appendix for map of counties by urban-rural classification.

**Table 7.**

Community Characteristics across TNB Youth Community Climate Categories

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW** | **MODERATE** | **HIGH** |
|  | n (%) | n (%) | n (%) |
| **Places** | 117 (25%) | 234 (50%) | 117 (25%) |
|  | mean (SD) | mean (SD) | mean (SD) |
| **Population** | 24,380.53  (28,776.91) | 66,281.60  (74,280.05) | 123,528.96 (40,4603.16) |
| **Median Household Income** | $59,754.34  (19,871.58) | $96,855.68  (41,594.84) | $115,628.67  (44,873.80) |
| **% African American** | 2.95%  (4.257) | 4.04%  (5.213) | 3.13%  (3.683) |
| **% Asian American** | 3.49%  (4.161) | 14.36%  (14.821) | 17.98%  (16.797) |
| **% Hispanic / Latino** | 47.05%  (27.635) | 39.57%  (24.831) | 25.72%  (19.745) |
| **% White** | 40.9%  (25.476) | 36.9%  (23.141) | 46.91%  (22.563) |

**Table 8**

Percentage of Cities Categorized by TNB Youth Community Climate by County Urban/Rural Classification

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW**  n (%) | **MODERATE**  n (%) | **HIGH**  n (%) |
| **Large Metropolitan County**  (MSA pop. > 2.5 mil) | 0 (0%) | 112 (60.87%) | 72 (39.13%) |
| **Mid Metropolitan County**  (MSA pop. < 2.5 mil) | 85 (34.41%) | 119 (48.18%) | 43 (17.4%) |
| **Micropolitan County**  (Micropolitan Statistical Area) | 13 (76.47%) | 2 (11.76%) | 2 (11.76%) |
| **Rural County** | 19 (100%) | 0 (0%) | 0 (0%) |

Across California, distribution of high-climate cities is not even; the majority of incorporated cities within the San Francisco Bay Area are categorized as high-climate cities (62.07%), while a majority of cities within the Superior Region (95.65%) and North (54.84%) and South San Joaquin Valley (89.74%) are designated as low-climate (Table 9). None of the communities within these three regions were determined to have a positive community climate according to the Community Climate Index. Notably, the San Francisco Bay Area, Los Angeles County, and Orange County contained no low-climate communities; these three regions make up the most urban part of the state. The coastal region of California - excluding Orange County - has a larger proportion of communities with more positive climate for TNB Youth (Figure 6).

In comparison, inland regions of California - the San Joaquin Valley, Greater Sacramento Area, and Superior Region - had higher proportions of low-climate communities overall (Figure 7), a reflection of the concentration of TNB youth resources in coastal urban parts of the state (Figures 8-10).

**Figure 5.**

Incorporated Cities of California by TNB Youth Community Climate.

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**Table 9**

Percentage of Cities Categorized by TNB Youth Community Climate by California Region

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW**  n (%) | **MODERATE**  n (%) | **HIGH**  n (%) |
| **Superior Region**  (n = 23) | 22 (95.65%) | 1 (4.35%) | 0 (0%) |
| **North Coast**  (n = 25) | 8 (32%) | 7 (28%) | 10 (40%) |
| **Sacramento Area**  (n = 25) | 10 (40%) | 10 (40%) | 5 (20%) |
| **Bay Area**  (n = 87) | 0 (0%) | 33 (37.93%) | 54 (62.07%) |
| **Central Coast**  (n = 42) | 3 (7.14%) | 31 (73.81%) | 8 (19.05%) |
| **N. San Joaquin Valley**  (n = 31) | 17 (54.84%) | 14 (45.16%) | 0 (0%) |
| **S. San Joaquin Valley**  (n = 39) | 35 (89.74%) | 4 (10.26%) | 0 (0%) |
| **Los Angeles County**  (n = 85) | 0 (0%) | 60 (70.59%) | 25 (29.41%) |
| **Inland Empire**  (n = 52) | 19 (36.54%) | 28 (53.85%) | 5 (9.62%) |
| **Orange County**  (n = 34) | 0 (0%) | 33 (97.06%) | 1 (2.94%) |
| **San Diego/Imperial**  (n = 25) | 3 (12%) | 13 (52%) | 9 (36%) |

**Figure 6.**

Percentage of Incorporated Cities Categorized as High TNB Youth Community Climate, by California Region

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**Figure 7.**

Percentage of Incorporated Cities Categorized as Low TNB Youth Community Climate, by California Region

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Analysis of indicators specific to TNB youth climate found that cities containing resources (Table 10) - youth services, pediatric gender care, and informed consent HRT providers - were on average larger in population than the average for all California cities (x̄ = 70,118.17). Cities containing pediatric gender clinics were larger in population (x̄ = 483,481.20). A majority of pediatric gender clinics are located within large metropolitan counties (80.65%), with few transgender-specific resources located within micropolitan and rural counties (Table 9). Regionally, the San Francisco Bay Area and Los Angeles County contain a considerable portion of youth services and pediatric gender clinics within California (Figure 8, 9). Locations of informed consent HRT have widespread across all metropolitan counties (Figure 10), yet still concentrated in Los Angeles and the Bay Area.

**Table 10**

Characteristics of Communities Containing TNB Resources

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Youth Services** | **Pediatric Gender Care** | **Informed Consent HRT** | **All Cities** |
|  | n (%) | n (%) | n (%) | n (%) |
| **Places** | 81 (17.31%) | 19 (4.06%) | 79 (16.88%) | 468 (100%) |
|  | mean (SD) | mean (SD) | mean (SD) | mean (SD) |
| **Population** | 204,690.23  (479,427.8) | 483,481.20  (930,208.6) | 212,026.38 (482,671.89) | 70,118.17  (211,820.1) |
| **Median Household Income** | $94,761.40  (33,064.4) | $119,308.41 (37,950.21) | $92,210.05  (32,672.92) | 92,273.59  (43,285.08) |
| **% African American** | 4%  (4.533) | 4.59%  (5.141) | 4.77%  (4.85) | 3.54%  (4.657) |
| **% Asian American** | 14.47%  (13.541) | 20.43%  (14.403) | 14.44%  (13.316) | 12.55% (  14.614) |
| **% Hispanic / Latino** | 35.08%  (21.257) | 25.56%  (14.978) | 38.69%  (20.488) | 37.98%  (25.568) |
| **% White** | 40.59%  (21.399) | 43.26%  (14.011) | 36.19%  (17.894) | 40.4%  (23.909) |

**Table 11**

TNB Specific Resources - by County Urban/Rural Classification

74

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Large Metropolitan County**  (MSA pop. > 2.5 mil) | **Mid Metropolitan County**  (MSA pop. < 2.5 mil) | **Micropolitan County**  (Micropolitan Statistical Area) | **Rural County** |
|  | n (%) | n (%) | n (%) | n (%) |
| **Youth Services**  (n = 149) | 70  (46.98%) | 72  (48.32%) | 4  (2.68%) | 3  (2.01%) |
| **Pediatric Gender Care**  (n = 31) | 25  (80.65%) | 6  (19.35%) | 0  (0%) | 0  (0%) |
| **Informed Consent HRT**  (n = 150) | 40  (26.67%) | 106  (70.67%) | 4  (2.67%) | 0  (0%) |

**Figure 8.**

A map of the state of california

Description automatically generatedLocations of Informed Consent Hormone Replacement Therapy Providers, California

**Figure 9.**

Locations of Pediatric Gender Clinics, California

**A map of the state of california

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**Figure 10.**

A map of the state of california

Description automatically generatedLocations of LGBTQ+ Youth Services, California

**Table 12.**

TNB Specific Resources by California Region

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Youth Services** | **Pediatric Gender Care** | **Informed Consent HRT** | **All Resources** |
| **Superior Region** | 2 | 0 | 4 | 6 |
| **North Coast** | 9 | 1 | 7 | 17 |
| **Sacramento Area** | 11 | 0 | 10 | 21 |
| **Bay Area** | 36 | 11 | 36 | 83 |
| **Central Coast** | 16 | 1 | 15 | 32 |
| **N. San Joaquin Valley** | 8 | 0 | 7 | 15 |
| **S. San Joaquin Valley** | 8 | 0 | 7 | 15 |
| **Los Angeles County** | 36 | 13 | 13 | 62 |
| **Inland Empire** | 11 | 1 | 21 | 33 |
| **Orange County** | 5 | 3 | 2 | 10 |
| **San Diego/Imperial** | 9 | 1 | 28 | 38 |

**Aim 3: Explore District-Level Health Outcomes by Climate**

Cities excluded from the sample (n = 69) were similar to those included within the study (Table 13). Excluded districts were often larger in size (i.e., Elk Grove Unified) and encompassed more cities within their coverage (i.e., San Mateo Union High School District). The most prominent difference between districts included and excluded within the study was percentage of students eligible for free and reduced-price meals (FRPM) as a proxy of household income; several school districts from affluent communities were excluded, such as San Ramon Valley Unified (5.2% FRPM eligible) and Acalanes Union High (6.7% FRPM eligible) in Contra Costa County and Palos Verdes Peninsula Unified (7.2% FRPM eligible) in Los Angeles County. For a list of excluded school districts, see Table 23 in the appendix.

Non-binary student social-emotional health outcome variables were consistent across included and excluded districts (Table 10), with slight variation between district outcomes of chronic sadness and hopelessness between included (71.83%) and excluded (74.96%) districts. Results from descriptive analysis were particularly distressing - across all districts and grade levels, rates of poor mental health outcomes among non-binary student populations were on average over 50%: chronic sadness and hopelessness (71.83%), social emotional distress (61.35%), and suicidality (51.26%). This average of over 50% is consistent across all grade levels, but mean indicators of mental health increase across grade levels - 66.69% of 7th grade school district samples reported high rates of chronic sadness/hopelessness in comparison to 72.52% within the 11th grade sample. Inversely, rates of positive social emotional health outcomes decrease on average from 7th grade to 11th grade. Average rate of reported optimism among non-binary students was 24.21% among the 7th grade sample in comparison to 23.97% of the 11th grade sample; average rate of satisfaction among the 7th grade sample was 43.78% in comparison to 37.04% within the 11th grade sample. Range of reported outcomes by school districts are wide but show distressing patterns among school district populations of non-binary youth. The lowest rate of reported chronic sadness and hopelessness is 1 in 3 students (Brea-Olinda Unified) and the highest rate is 100% of non-binary respondents (Shasta Union High School District). Suicidality similarly sees a wide spread of rates among school districts within the sample, from 13% (Alameda Unified; Baldwin Park Unified) to 88% (Lakeside Union Elementary) of student respondents within each school district reporting feelings of suicidal ideation.

**Table 13.**

Demographic Characteristic Comparison of California School District Sample

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **In Study** | | **Excluded From Study** | | **Total** | |
|  | n = 245 | | n = 69 | | n = 314 | |
| **District Characteristics** | mean (SD) | n | mean (SD) | n | mean (SD) | n |
| Total Enrollment | 17,979.02 (15,974.52) | 4,404,860 | 19,729.13  (15,517.71) | 1,361,310 | 18,363.6  (15,867.31) | 5,766,170 |
| African American | 4.22%  (4.708) | 234,249 | 4.59% (4.001) | 76,156 | 4.30% (4.558) | (310,405) |
| American Indian | 0.45%  (1.051) | 15,195 | 0.36% (0.341) | 5,195 | 0.43% (0.942) | (20,390) |
| Asian American | 11.98% (13.685) | 556,919 | 12.56% (11.850) | 178,838 | 12.11% (13.288) | (735,757) |
| Hispanic / Latino | 47.81% (23.626) | 2,091,499 | 45.42% (22.384) | 665,037 | 47.29% (23.344) | 2,756,536 |
| White | 26.45% (18.731) | 1,073,210 | 27.52% (18.556) | 301,411 | 26.68% (18.668) | 1,374,621 |
| Free and Reduced Price Meals | 49.94% (23.400) | 2,311,471 | 43.37% (24.710)​​ | 654,928 | 48.49% (23.810) | 2,966,399 |

**Figure 11.**

California School Districts by TNB Youth Community Climate Category

A map of the state of california

Description automatically generated

**Table 14.**

Social Emotional Health Outcome Comparison of California School District Sample

|  |  |  |  |
| --- | --- | --- | --- |
|  | **In Study** | **Excluded From Study** | **Total** |
|  | n = 245 | n = 69 | n = 314 |
| **Outcome Variables** | mean (SD) | mean (SD) | mean (SD) |
| Chronic Sadness / Hopelessness | 71.83% (11.715) | 74.96% (9.148) | 72.52% (11.263) |
| Social/Emotional Distress | 61.35% (9.488) | 63.19% (7.464) | 61.75% (9.103) |
| Suicidality | 51.26% (13.463) | 53.9% (12.796) | 51.84% (13.344) |
| Optimism | 24.21% (8.496) | 23.13% (7.542) | 23.97% (8.297) |
| Satisfaction | 40.71% (7.471) | 40.03% (6.664) | 40.56% (7.297) |

**Table 15.**

School District Level Characteristics of Social-Emotional Health Variables by Grade.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **7th Grade**  (n = 95) | | **9th Grade**  (n = 78) | | **11th Grade**  (n = 72) | | **All Districts**  (n = 125) | |
|  | **Mean**  **(SD)** | **Range** | **Mean**  **(SD)** | **Range** | **Mean**  **(SD)** | **Range** | **Mean**  **(SD)** | **Range** |
| **Chronic Sadness / Hopelessness** | 66.69% (12.250) | 33 - 94 | 70.97% (10.427) | 43 - 100 | 75.58% (11.571) | 44 - 100 | 71.83% (11.715) | 33 - 100 |
| **Social/Emotional Distress** | 58.34% (9.786) | 33 - 82 | 62.53% (8.897) | 35 - 84 | 64.03% (8.706) | 42 - 82 | 61.35% (9.488) | 33 - 84 |
| **Suicidality** | 51.11% (13.498) | 21 - 88 | 50.51% (13.006) | 15 - 79 | 52.28% (14.019 | 13 - 82 | 51.26% (13.463) | 13 - 88 |
| **Optimism** | 27.01% (8.014) | 8 - 50 | 23.29% (8.201) | 0 - 44 | 21.50% (8.442) | 7 - 43 | 24.21% (8.496) | 0 - 50 |
| **Satisfaction** | 43.78% (6.278) | 27 - 60 | 40.36% (6.594) | 24 - 57 | 37.04%  (8.132) | 18 - 58 | 40.71% (7.471) | 18 - 60 |

Low-climate school districts repeatedly demonstrate poorer rates of social-emotional health outcomes than their high- and moderate-climate counterparts across all three grade levels (Table 16). Chronic sadness and hopelessness are higher in low-climate school districts than in high-climate districts: 73.91% to 66.17% in 7th grade sample, 67.42% to 79.56% in 9th grade sample, and 72.09% to 75.38% in the 11th grade sample, respectively. Suicidality also followed similar trends between low- and high-climate districts: 56.82% to 48.78% in 7th grade sample, 58.56% to 45.69% in 9th grade sample, and 56% to 47.96% in the 11th grade sample. Differences between average rates of social emotional health outcomes were more pronounced in 7th and 9th grade samples. However, all average rates of health outcomes were poorer in low-climate districts in comparison to high-climate districts. Examining differences between average rates of health outcomes by gender across community climate, all genders within low-climate districts report poorer social-emotional health outcomes in comparison to their counterparts in high-climate districts (Table 17). However, non-binary students exhibit larger disparities between climate categories. For example, the average rate of suicidality among low-climate districts is higher than high-climate districts for each grade; additionally, the gap between non-binary student rates of suicidality and rates for all respondents across gender were starker in low-climate school districts (Table 17).

**Table 16.**

Social-Emotional Health Outcome Variables by TNB Youth Community Climate.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **LOW**  mean (SD) | **MODERATE**  mean (SD) | **HIGH**  mean (SD) |
| **7th Grade** | *11 (11.58%)* | *61 (64.21%)* | *23 (24.21%)* |
| Chronic Sadness / Hopelessness | 73.91% (10.839) | 70.26% (12.325) | 66.17% (12.280) |
| Social/Emotional Distress | 59.09% (12.747) | 59.02% (9.367) | 56.17% (9.461) |
| Suicidality | 56.82% (17.971) | 50.95% (12.993) | 48.78% (12.218) |
| Optimism | 22.91% (5.909) | 26.95% (8.172) | 29.13% (7.956) |
| Satisfaction | 41.64% (5.259) | 43.71% (6.238) | 45% (6.769) |
| **9th Grade** | *9 (11.54%)* | *43 (55.12%)* | *26 (33.33%)* |
| Chronic Sadness / Hopelessness | 79.56% (12.063) | 71.33% (9.188) | 67.42% (10.327) |
| Social/Emotional Distress | 69.89% (10.265) | 63.67% (7.9033) | 58.12% (7.946) |
| Suicidality | 58.56% (12.167) | 51.74% (11.980) | 45.69% (13.508) |
| Optimism | 22.89% (10.937) | 22.58% (8.413) | 24.62% (6.871) |
| Satisfaction | 36.67% (5.788) | 39.67% (6.286) | 42.77% (6.713) |
| **11th Grade** | *8 (11.11%)* | *41 (56.94%)* | *23 (31.94%)* |
| Chronic Sadness / Hopelessness | 75.38% (7.763) | 77.59% (11.061) | 72.09% (13.045) |
| Social/Emotional Distress | 67% (8.751) | 65.15% (8.024) | 61% (9.386) |
| Suicidality | 56% (13.202) | 53.98% (13.022) | 47.96% (15.511) |
| Optimism | 18.5% (9.769) | 20.22% (7.995) | 24.83% (8.094) |
| Satisfaction | 38% (7.928) | 36.56% (8.003) | 37.57% (8.712) |

**Table 17.**

Average Rates of Health Outcomes Across Community Climate - Non-binary and Total Student Population Comparison

85

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Social Emotional Distress | | | Chronic Sadness/Hopelessness | | | Suicidal Ideation | | | Optimism | | | Life Satisfaction | | |
|  | LOW | MOD. | HIGH | LOW | MOD. | HIGH | LOW | MOD. | HIGH | LOW | MOD. | HIGH | LOW | MOD. | HIGH |
| 7th |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-binary | 59.1% | 59% | 56.2% | 73.9% | 70.3% | 66.2% | 56.8% | 51% | 48.8% | 22.9% | 27% | 29.1% | 41.6% | 43.7% | 45% |
| All Students | 27.5% | 27.1% | 26% | 33.7% | 33.8% | 31.1% | 16.8% | 16.2% | 15.5% | 50% | 51.1% | 52.7% | 65.8% | 66.2% | 67.2% |
| *Difference* | 31.6% | 31.9% | 30.2% | 40.2% | 36.5% | 35.1% | 40% | 34.8% | 33.3% | -27.1% | -24.1% | -23.6% | -24.2% | -22.5% | -22.2% |
| 9th |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-binary | 69.9% | 63.7% | 58.1% | 79.6% | 71.3% | 67.4% | 58.6% | 51.7% | 45.7% | 22.9% | 22.6% | 24.6% | 36.7% | 39.7% | 42.8% |
| All Students | 31.8% | 30.0% | 29.4% | 38.6% | 35.1% | 32.2% | 18.7% | 15.7% | 15.3% | 44.4% | 44.7% | 45.2% | 61.4% | 62.2% | 62.1% |
| *Difference* | 38.1% | 33.7% | 28.7% | 41.0% | 36.2% | 35.2% | 39.9% | 36.0% | 30.4% | -21.5% | -22.1% | -20.6% | -24.7% | -22.5% | -19.3% |
| 11th |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-binary | 67.0% | 65.1% | 61.0% | 75.4% | 77.6% | 72.1% | 56.0% | 54.0% | 48.0% | 18.5% | 20.2% | 24.8% | 38.0% | 36.6% | 37.6% |
| All Students | 36.4% | 34.9% | 35.1% | 43.1% | 40.7% | 38.0% | 18.4% | 16.6% | 16.0% | 40.5% | 40.6% | 40.3% | 59.1% | 58.3% | 58.3% |
| *Difference* | 30.6% | 30.2% | 25.9% | 32.3% | 36.9% | 34.1% | 37.6% | 37.4% | 32.0% | -22.0% | -20.4% | -15.5% | -21.1% | -21.7% | -20.7% |

**Summary of Results**

Principal Components Analysis was performed to create an index representing community climate for transgender and non-binary youth, comprised of eight indicators of climate: percentage of votes for Donald Trump in the 2020 election at the county level; representation of LGBTQ+ politicians; city-level LGBTQ+ Pride events, such as pride marches, picnics, or walks; official pride recognition at the city and county level, represented by proclamation of LGBTQ+ Pride Month and/or flag raising on government property; percentage of same sex households out of total households; and indicators of proximity to LGBTQ+ youth services, pediatric gender care locations, and informed consent hormone replacement therapy providers, defined as the average distance (mi.) of city block groups to nearest provider. This climate index was created using the first three principal components, representing 69.21% of total variance within the dataset. These three components represented community climate dimensions of structural stigma, existence of LGBTQ+ community, and societal support. Indicators specific to TNB youth community climate - youth services, proximity to pediatric gender care, and informed consent HRT - were strong contributors to the first three components, demonstrating some utility of the climate index to measure climate specific to the subset of TNB youth within the broader LGBTQ+ community climate. This is important, as inclusion of transgender populations within studies of LGBTQ+ community climate is scarce (e.g., Duncan et al., 2014; Hatzenbuehler et al., 2009; Oswald et al., 2010; Woodford et al., 2015) and transgender-specific community climate indicators are nearly non-existent and usually supplemented with indicators specific to LGB populations (Bränstrom & Pachankis, 2022; Perez-Brumer et al., 2015).

TNB Youth Community Climate Index scores were predicted, and 468 cities were categorized by climate score - the lowest quantile was defined as ‘Low,’ the highest quantile as ‘High,’ and the remaining center as ‘Moderate’ in climate. Characteristics of cities within climate categories were observed - low-climate cities were more likely to have a small population and lower median household income, reflective of their concentration in settings outside of major metropolitan areas. No cities reflecting poor community climate for TNB youth were located within metropolitan areas with a core larger than 2.5 million residents. Large metropolitan counties consisted of Los Angeles, Orange, Alameda, Contra Costa, Marin, San Mateo, and San Francisco Counties. The entirety of rural and majority of micropolitan communities were designated as low-climate. This reflects previous research on perceptions of community climate within rural settings, as rural settings often present more stressors in the environment such as anti-LGBTQ+ ideology (Paceley et al., 2017; Woodford et al., 2015) and lack of supportive resources (Paceley et al., 2017; Paceley et al., 2019). City size reflected consistent spread between climate categories - however, the majority of cities determined as having poor community climate (82.9%) were categorized as small towns with a population of less than 50,000.

Assessment of non-binary student social-emotional health outcomes at the school district level found a positive association between community climate and student health. School districts located within low-climate community settings reported, on average, higher rates of chronic sadness and hopelessness, social emotional distress, and suicidality and lower rates of student reported optimism and life satisfaction. This is especially true for outcomes of suicidality: across all samples by grade (7th, 9th, 11th), average rates of non-binary student suicidality were higher for districts with a low-climate community setting than districts within high-climate settings. For example, the average rate of non-binary students reporting feelings of suicidal ideation within communities indicated as having positive climate for TNB youth was 45.69%. In comparison, the average rate of feelings of suicidality for non-binary students in communities with poor TNB youth climate was 58.56%. These differences in health outcomes by community climate are more prominent for non-binary students than their binary male and female peers.

Overall, the results of this analysis have demonstrated that TNB youth community climate and structural stigma is not distributed evenly across the state of California. Communities that are low-climate are more likely to be low-income, smaller in size, (Table 7) and in the interior of the state in the San Joaquin Valley and inland Northern California (Figure 7). High-climate communities, inversely, are more likely to be high-income (Table 7) and in metropolitan coastal regions (Figure 6). TNB youth specific resources are concentrated in urban locales (Table 11). The next chapter discusses how these findings apply to current community climate literature and the broader field of transgender studies and assesses limitations and further application of the TNB Youth Community Climate Index.

**Chapter 5: Discussion**

The association between indicators of community climate and LGBTQ+ health has been established in previous research (Doyle & Molix, 2015; Hatzenbuehler, 2011; Lick et al., 2012; Perales & Todd, 2018), but the connection between transgender-specific indicators of community support and safety has never been explored as it relates to TNB youth health. While spatial distribution of medical resources for transgender populations is just beginning to be explored within the literature (Everhart et al., 2022; Weixel & Wildman, 2022), proximity to medical resources is underutilized as an indicator of structural transphobia. This chapter explores how the results of this study and the TNB Youth Community Climate Index connect to broader literature and theory on structural transphobia and health and how this may be used to further TNB youth health equity initiatives.

**Relation to Theory and Prior Research**

This study is situated within a broader field of transgender studies, centering structural transphobia in all its forms in understanding spatial disparities in TNB youth health. Within transgender studies, a common thread is that structural transphobia is not only pervasive in political institutions but in our medical and health system (MacKinnon, 2018; Suess et al., 2014). Medical institutions often enforce pathologized categories of transness (Suess et al., 2014) and present obstacles to transition - this is most notable in the original standards of care for transgender patients, WPATH, which required mental health evaluation and other criteria of readiness to determine eligibility for HRT or surgery (Coleman et al., 2022). While youth may not have access to HRT through these locations, they may serve as symbols of affirmation to TNB youth, as gender-affirming care is not distributed evenly across regions of the United States (Gridley et al., 2016; Weixel & Wildman, 2022) - or within California. While there are other potential indicators of structural transphobia missing from this community climate index - such as anti-transgender policy and ideology - proximity to medical services is appropriate given the importance of transition-related care to TNB mental health and wellbeing (Olsavsky et al., 2023) and the role that medical intervention plays within anti-transgender ideology (Elster, 2022). Literature on the spatial dimension of structural stigma often focuses on power within our political system (Bränström & Pachankis, 2021; Hatzenbuehler, 2014; Pachankis & Bränström, 2018; van der Star et al., 2021), neglecting to observe how stigma is present in medical institutions and how this varies across space. The inclusion of medical and health institutions in studies of structural stigma and health is crucial to studies with transgender populations; much like transgender studies diverges from queer studies to center trans experience (Stryker, 2004), new studies on community climate, structural transphobia, and health must create new measures and methods that center structural transphobia in all its forms.

The spatial distribution of gender affirming care itself is a form of structural stigma. Within California, pediatric gender clinics are almost wholly located within the largest metropolitan counties (Figure 9), creating obstacles to a crucial element of TNB youth health (Olsavsky et al., 2023). Access to informed consent HRT is poor in the more rural parts of the state (Table 10) - this could be a reflection of biases and attitudes towards gender affirming care, a hypothesis supported by the correlation between the two indicators of proximity to TNB medical care (pediatric gender clinics and informed consent HRT) and political ideology (percentage of votes for Donald Trump and city recognition of pride month) (Table 4). This is important to consider as gender affirming care, especially for youth, becomes more polarized (Elster, 2022). The impact of state legislation and policy on gender affirming care for minors is more than a question for access, as the political discourse itself impacts LGBTQ+ health (Frost & Fingerhut, 2016; Rostosky et al., 2009). Youth use symbols of LGBTQ+ support to navigate schools and communities safely (Wolowic et al., 2016), and presence of pediatric gender clinics may function in the same role, dually offering important medical services to TNB youth seeking gender affirming care and existing as a symbol of support (Paceley et al., 2017).

In addition, this study furthers concepts of how community support, a moderator of stressors’ impact on LGBTQ+ health (Hendricks & Testa, 2012; Meyer, 2003), varies over space. One dimension of the TNB Youth Community Climate Index is the existence of LGBTQ+ community. Identification and connection with the LGBTQ+ community is a protective factor (Meyer, 2003), and understanding how conditions are different between communities furthers how the minority stress model can connect environmental factors and LGBTQ+ health. Incorporated cities within California ranged from gay enclaves such as Palm Springs and West Hollywood to the 8.12% of cities that had no recorded same-sex couple led households according to the American Community Survey. In addition, 3 out of 4 cities did not have a pride event in 2022 (Table 3.2). Youth services are almost entirely within urbanized areas within the state (Table 11). “LGBTQ+ resources” form an important role in LGBTQ+ youth’s construction of perceptions of safety and support (Davis et al., 2009; Eisenberg et al., 2018; Paceley et al., 2019; Paceley et al., 2020a). The concept of what a resource is for LGBTQ+ youth is broad, and may encompass social groups such as youth programs, LGBTQ+ centers, or medical services (Eisenberg et al., 2018; Gower et al., 2019). Proximity to resources fulfills two roles for LGBTQ+ youth perceptions of climate - proximity to resources improves access to important services that benefit youth (Allen et al., 2012), and the existence and visibility of resources is a symbol of positive climate (Paceley et al., 2020a). Opportunities for connection are not evenly distributed within California, exacerbating existing health disparities among TNB youth.

This study furthers literature on structural stigma, incorporating aspects of stigma at the city and county level and moving past a framework that privileges cisgender experiences within studying LGBTQ+ community health. The foundations of LGBTQ+ structural stigma literature centers around the state level, examining the role of state-level policies such as same sex marriage recognition in determining LGB health (Bränström & Pachankis, 2021; Hatzenbuehler et al., 2010; Hatzenbuehler et al., 2012; Pachankis & Bränström, 2018; Perales & Todd, 2018). However, within a state like California with a favorable political climate for LGBTQ+ residents (MAP, 2023), examining political support at the unit of county and city is also important, as it shapes a more direct perception of community (Griffin et al., 2019).

While overall perceptions of rural spaces as hostile to TNB youth may be due in part to ‘metronormativity,’ the imagined role of cities as places for queer people to migrate to from outlying areas to seek improved climate (Weston, 1995), ideology and symbolism within the community also shape rural communities as spaces with poor community climate for TNB youth. Incorporated cities within rural and micropolitan counties were almost entirely designated as having poor community climate for TNB youth (Table 8). However, there are notable exceptions - Arcata, in micropolitan Humboldt County, has an excess of resources for TNB youth, including an LGBTQ+ Center, pride event, and three informed consent HRT clinics within the region. It is determined as a high-climate community. Similarly, most cities in the Coachella Valley in Riverside County are defined as high-climate communities, most likely as a result of the gay enclave within the region. Inversely, Fresno and Bakersfield are determined as moderate climate communities, the only cities within the 10 largest cities in the state with the distinction. These outliers demonstrate that while there are definite associations between climate and rurality, climate is more than just a function of community size.

Climate may be a more important indicator than community size in determining TNB mental health outcomes (Paceley et al., 2020). Non-binary students in school districts within low-climate communities reported poorer social emotional health outcomes than their counterparts in high-climate communities across all three grades (Table 16). These health outcomes were not as associated with TNB youth community climate and TNB-specific stressors for rates of health outcomes for all students (Table 17). Building from minority stress theory (Hendricks & Testa, 2014; Meyer, 2003), perceptions of threats and discrimination within the community setting are minority-specific proximal stressors and lead to poor mental health outcomes (Duncan et al., 2014; Hatzenbuehler, 2011; Paceley et al., 2020). Experiences of discrimination similarly predict poor health in TNB youth (Almeida et al., 2009; Jones. et al, 2016; Wilson et al., 2016). Minority stress theory also emphasizes the role of community connectedness and pride in gender identity as a protective factor (Hendricks & Testa, 2014), which may be facilitated in communities with access to spaces providing social support, such as youth programs (Eisenberg et al., 2018; Paceley et al., 2019) and visibility of LGBTQ+ adults in the community (Eisenberg et al., 2018).

**Strengths and Limitations**

Several limitations were present within the study. Cities included within the sample varied widely in population (1,031 to 1,215,978,552) and area size (227.5 acres to 502 sq. mi.), making it a difficult unit of observation to standardize indicators. It is likely that there is variance in large cities such as Los Angeles and San Diego between sections of the cities, as same sex households and LGBTQ+ resources were spatially concentrated within cities. However, the inclusion of city-level variables such as pride recognition and political representation made analysis outside of the place unit challenging.

All data used to construct the TNB Youth Community Climate Index were publicly available or collected using search engines. Examination of non-binary youth health outcomes was restricted to the school district level, reducing the sample size. Trans health and population data faces significant barriers to collection (Labuski & Keo-Meier, 2015; Schilt & Bratter, 2015), and few representative samples of transgender population health are available - especially at a scale smaller than the U.S. state. Because of this, accurate estimates of transgender population were not available at the city or county level and the percentage of same sex households was used as a proxy. In addition, data collection on services for transgender adults and youth may not be comprehensive, as vulnerability of trans individuals may result in undercounting services that are located in hostile communities and not advertised (Schilt & Bratter, 2015; Rohrer, 2015). This is especially true of locations of sites offering any gender-affirming care. Locations of pediatric gender clinics were taken from the Human Rights Commission’s map of pediatric gender clinics but were supplemented with additional locations from crowdsourced databases or search engine review. Addresses and information for doctors offering pediatric gender care are often made public by anti-trans hate groups, putting them into vulnerable positions. In addition, data collection relied on use of search engines and social media, which may have excluded events, health services, and youth programs not advertised online. Lack of disclosure of these TNB youth resources online may be a result of safety concerns and may unintentionally undercount youth services in less affirming communities. However, as echoed by Gower and colleagues (2019), search engines and social media are tools used by TNB youth themselves to locate community resources; what is publicly available may still be an accurate indicator of the presence of how the visibility of LGBTQ+ youth supports shapes perceptions of community climate.

Climate indices often use policy as an indicator of structural stigma - this was impractical within the setting of California, as most protections for transgender residents are covered at the state level (MAP, 2023b), making city-level data on TNB policy obsolete. Due to time constraints, indicators of community climate that were more challenging to locate were excluded, including indicators of TNB specific youth services and community events. Additional indicators of structural stigma specific to transgender populations, especially that reflect policy and political ideology, would improve the index, especially in light of current political attacks on TNB youth (MAP, 2023a). New indicators specific to TNB youth wellbeing - such as GSAs within school districts, gender inclusive bathroom policies within school districts, Trans Day of Remembrance events, and locations of anti-transgender political attacks - were not included in this study but have promise for future research on TNB youth community climate.

Use of public data is also a strength of this climate index - analysis can be recreated with American Community Census data, public databases of LGBTQ+ political representatives and resources, and data collection through search engine review. In addition, this is one of the first attempts to measure structural stigma for transgender populations quantitatively, as most studies of community climate are qualitative in nature (Goffnett et al., 2022; Paceley et al., 2020a; Paceley et al., 2023), focus on LGB populations exclusively (Doyle & Molix, 2015; Duncan et al., 2014; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010; Hatzenbuehler, 2011; Hatzenbuehler et al., 2011; Hatzenbuehler et al., 2012; Oswald et al., 2010; Perales & Todd, 2018; Puckett et al., 2017; Woodford et al., 2015), or do not include climate measures specific to transgender individuals (Gower et al., 2019; Perez-Brumer et al., 2015).

**Implications for Community Development**

The TNB Youth Community Climate Index is not a score to improve indicators like other indices - it would be a difficult task to shift percentage of votes for trans-discriminatory Presidential candidates or increase the proportion of same sex households - but is a tool to identify the conditions that TNB youth develop in and how their health might be impacted. For community development at the municipal level, this measure of community climate gives an idea of where to invest in youth programs and health services for TNB youth. Cities categorized as low-climate were concentrated within the interior of the state (Figure 7) and were on average smaller in population (Table 7) and outside of major metropolitan areas (Table 8). A stark majority (88.89%) of cities within rural or micropolitan areas were classified as having a poor climate for TNB youth. As youth residing within communities with low climate may face poorer mental health outcomes than their counterparts in positive climate communities, identifying cities or clusters of cities with poor climate scores would be an appropriate location to invest in youth programs, mental health resources, and medical services for TNB youth. Additionally, this study sheds new light on the importance of the community setting in shaping youth perceptions of safety and support - this index intentionally highlights the role of city and county government and its affirmation of LGBTQ+ residents as an indicator of structural stigma. The symbolic role of public support should not be understated, and discourse on LGBTQ+ rights - such as those in Orange County (Cormaci & Nguyen, 2023) or Delano (Doneghan, 2023) - has an impact on TNB youth wellbeing (Paceley et al., 2020a).

For school district administrators, this index has application towards understanding how conditions outside of the school and household setting shape TNB youth mental health. Rates of suicidality for TNB youth are higher than their cisgender peers (The Trevor Project, 2022) and attention to how the school setting can offset the impacts of perceptions of community safety and support could make a difference (Gower et al., 2018b; McPherson et al., 2023). At the state level, this study has ramifications for understanding how the legislation and policy that shapes TNB youth lives goes beyond just physical access to gender affirming care; the political discourse itself shapes perceptions of safety and support (Paceley et al., 2020a). We don’t know the long-term impacts of pediatric gender care bans in states like Florida and Arkansas, but we do know that youth concepts of community climate are just as important as the discrimination they face in predicting mental health outcomes (Barefoot et al., 2015; Cohn & Leake, 2012; Goldbach et al., 2023; Hatzenbuehler et al., 2012; Perales & Todd, 2018). Because of this, state policy is an important factor in exacerbating existing TNB youth health disparities. Just as access to care is one piece of structural stigma for transgender populations at the state level, disparities in access to care within states is impactful as well - the San Joaquin Valley and Superior Region of California are more vulnerable (Figure 7), in part due to their lack of proximity to gender affirming care for TNB youth (Figure 9). Understanding where TNB youth are more vulnerable is important to inform where investments are made to improve TNB youth health, as data on TNB youth health outcomes are difficult to access (Labuski & Keo-Meier, 2015; Schilt & Bratter, 2015).

**Conclusion**

Understanding how community climate predicts health outcomes for TNB youth is more important now than ever before. Within the last few years, a significant number of states have effectively banned sports activities and safe bathroom usage for TNB students (MAP, 2023). The state of legislation and policy around pediatric gender care has been more dire, and an estimated 146,300 transgender youth may lose access to care due to the recent legislation or executive actions (Redfield et al., 2023). This has effectively created a geography of transgender youth wellbeing. The process of medical transition itself has a spatial component, as pediatric gender clinics are concentrated in certain regions of the United States, leaving transgender youth within regions such as the South and Midwest (Weixel & Wildman, 2022) at a disadvantage. In a political environment that seems to increase the divide between opportunities for TNB youth to live successful, healthy lives across regions of the United States, developing new tools and approaches to measure structural stigma and community support is imperative. There is limited understanding in spatial disparities of transgender populations in the United States, but as new data become available, so does new understanding of the role of community setting in shaping TNB health.

**Appendix**

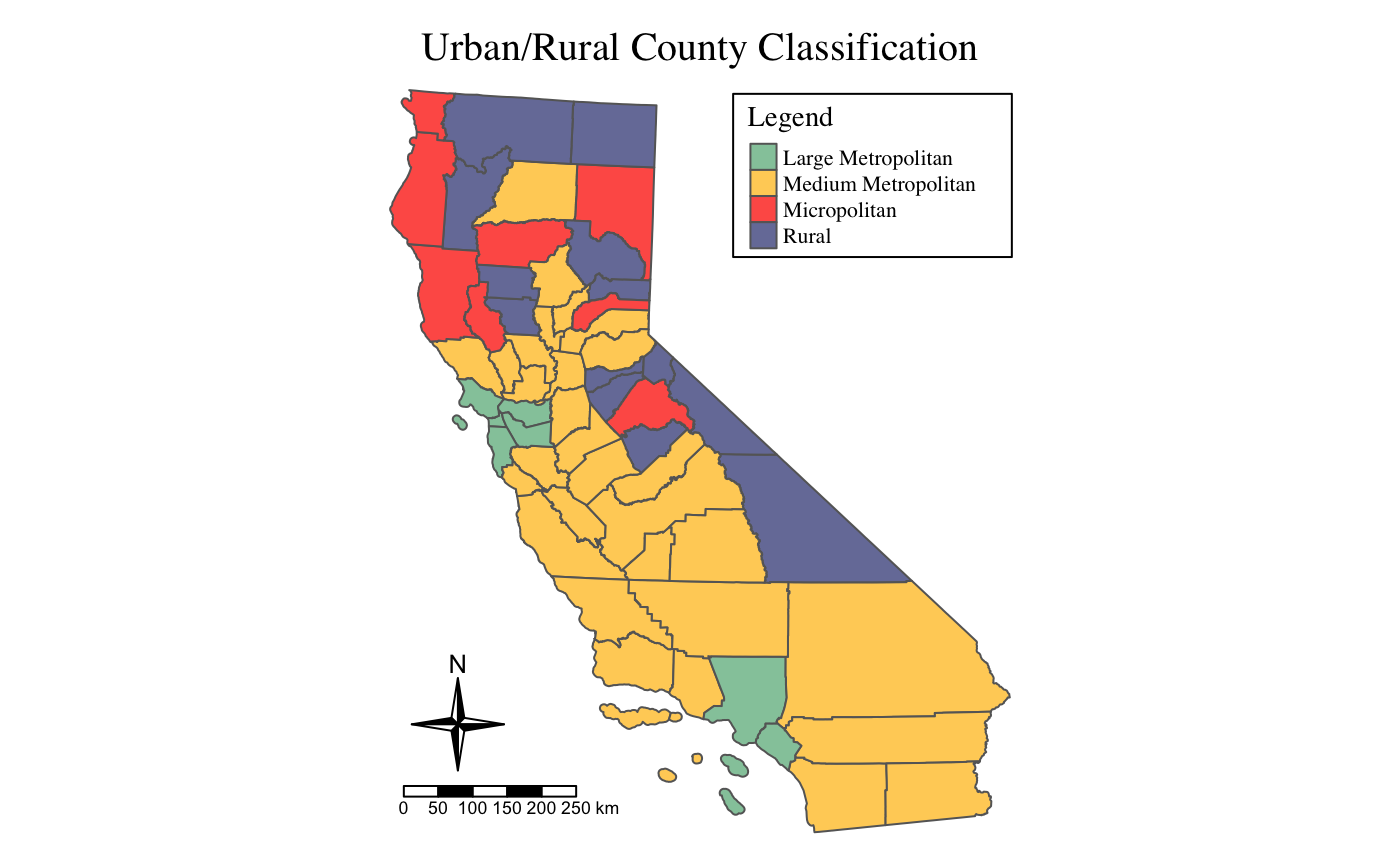
**Table 18.**

Existing Community Climate Indicators and Indices

|  |  |  |  |
| --- | --- | --- | --- |
| **Community Climate Indicators** | **Indicators** | **Population** | **Age** |
| Doyle & Molix, 2015 | State-level policies: coded from 0 (most protective) to 4 (most discriminatory) using HRC criteria.  Political ideology: % of state residents describing their political views as conservative (Gallup poll).  Religious ideology: % of state residents who value religion / regularly attend religious services (Gallup poll). | LGB | Adults |
| Duncan et al., 2014 | Geocoded locations of LGBTQ+ hate crime incidents (Boston Police Department) | LGB | Youth |
| Gower et al., 2019 | Population characteristics (American Community Survey)  Same sex households (American Community Survey)  LGBTQ Youth-Serving Organizations: scored 1-9 for organization characteristics and summed within each community buffer (search engine)  Community Resources: pride events, transgender day of remembrance, anti-LGBTQ bullying day, or PFLAG meeting. Presence of each within the community is assigned a score of 1. (Search engine)  Election Data: % voting for LGBTQ-inclusive major party, % voting “no” to restrict marriage to one man/one woman (Minnesota state data)  Alcohol sales (2016 Esri Retail MarketPlace) | LGBTQ+ | Youth |
| Hatzenbuehler et al., 2009 | State-level Policies: Dichotomous variable of states with LGBTQ+ hate crime laws and/or state policies banning employment discrimination by sexual orientation (NESARC). | LGB | Adults |
| Hatzenbuehler et al., 2010 | State-level Policies: Dichotomous variable of U.S. states with Constitution amendments defining marriage as between a man and a woman. | LGB | Adults |
| Hatzenbuehler, 2011 | Proportion of same sex households (US Census)  Proportion of registered Democrats (Oregon Secretary of State Election Division)  Proportion of schools with gay-straight alliances (GLSEN)  Proportion of schools with LBTQ+ specific anti-bullying policies (Oregon Dept. Of Education) | LGB | Youth |
| Hatzenbuehler et al., 2011 | Proportion of same sex households (US Census)  Proportion of schools with gay-straight alliances (GLSEN)  Proportion of schools with LBTQ+ specific anti-bullying and anti-discrimination policies (Oregon Dept. Of Education) | LGB | Youth |
| Hatzenbuehler et al., 2012 | Religious Climate: 5-level variable of denomination's position toward homosexuality (Glenmary Research Center) | LGB | Youth |
| Lick et al., 2012 | Proportion of same-sex households (US Census)  Election Data: dichotomous variable of majority Democrat (0) or majority Republican (1) in 2008 Presidential election.  State-level policies: coded from 0 (most protective) to 4 (most discriminatory) using HRC criteria. | Family Members of LGB | Adults |
| Oswald et. al, 2010 | Proportion of same sex households (US Census)  Human rights ordinances: presence of sexual orientation as a protected class in municipal code.  LGBTQ+ serving organizations: number of businesses or organizations within each city.  Religious Climate: denomination's position toward homosexuality; sum of adherents in denomination divided by county's total population (Religious Congregations and Membership in the United States data)  Election Data: proportion of the county vote that was for Gore or Nader.  Creative Economic Share/Bohemian Economic Share: “proportion of knowledge-based occupations,” (US Census). | LGB | Adults |
| Oswald et al., 2018 | Proportion of same sex households (US Census)  Human rights ordinances: presence of sexual orientation as a protected class in municipal code.  LGBTQ+ serving organizations: number of businesses or organizations within each city.  Religious Climate: denomination's position toward homosexuality; sum of adherents in denomination divided by county's total population (Religious Congregations and Membership in the United States data)  Election Data: proportion of the county vote that was for Gore or Nader.  Creative Economic Share/Bohemian Economic Share: “proportion of knowledge-based occupations,” (US Census). | LGB | Adults |
| Paceley et al., 2020 | Community Size: National Center for Health Statistics Urban-Rural Classification Scheme for Counties. | LGBTQ+ | Youth |
| Perales & Todd, 2018 | Ideology: % of population in approval of same sex marriage (Australian Marriage Law Postal Survey). | LGB | Adolescent/Adult (ages 15+) |
| Puckett et al., 2017 | Self-Reported Indicators of Climate: LGBTQ+ community organizations/spaces/groups, visibility of LGBTQ+ residents, religious climate, nondiscrimination laws/policies… dichotomous variable for each measure. | LGB women | Adults |
| Woodford et al., 2015 | State-level policies: legal same-sex marriage - dichotomous variable, anti-discrimination employment protections -  Three item variable representing protections not including sexual orientation or gender identity/expression (0), protections inclusive of sexual orientation only (1), protections inclusive of both sexual orientation and gender identity/expression (2). | LGB | Emerging Adults (ages 18-25) |

**Figure 12.**

Urban/Rural Classification - by California County



**Table 19.**

Urban/Rural Classification - by California County

|  |  |
| --- | --- |
| **Classification** | **Counties** |
| Large Metropolitan  (Urban Core 2.5 million+) | Alameda, Contra Costa, Los Angeles, Marin, Orange, San Francisco, San Mateo |
| Metropolitan  (Urban Core 50,000 - 2.5 million) | Butte, El Dorado, Fresno, Imperial, Kern, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Sutter, Tulare, Ventura, Yolo, Yuba |
| Micropolitan  (Urban Core 10,000 - 50,000) | Del Norte, Humboldt, Lake, Lassen, Mendocino, Nevada, Tehama, Tuolumne |
| Rural  (No Urban Core) | Alpine, Amador, Calaveras, Colusa, Glenn, Inyo, Mariposa, Modoc, Mono, Plumas, Sierra, Siskiyou, Trinity |

**Table 20.**

California Region - by County

|  |  |
| --- | --- |
| **Classification** | **Counties** |
| Superior Region | Butte, Colusa, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama |
| North Coast | Del Norte, Humboldt, Lake, Mendocino, Napa, Sonoma, Trinity |
| Sacramento Area | El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, Yuba |
| Bay Area | Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano |
| Central Coast | Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura |
| N. San Joaquin Valley | Alpine, Amador, Calaveras, Madera, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tuolumne |
| S. San Joaquin Valley | Fresno, Inyo, Kern, Kings, Tulare |
| Los Angeles County | Los Angeles |
| Inland Empire | Riverside, San Bernardino |
| Orange County | Orange |
| San Diego/Imperial | Imperial, San Diego |

**Table 21.**

CHKS Social-Emotional Health Survey Items

|  |  |
| --- | --- |
| Chronic Sadness/ Hopelessness | During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more that you stopped doing some usual activities?  Yes/No |
| Suicidality | During the past 12 months, did you ever seriously consider attempting suicide?  Yes/No |
| Social-Emotional Distress | Over the past 30 days, how true do you feel these statements are about you?  Statements:   * “I had a hard time relaxing.” * “I felt sad and down.” * “I was easily irritated.” * “It was hard for me to cope and I thought I would panic.” * “It was hard for me to get excited about anything.”  1. Not At All True 2. A Little True 3. Pretty Much True 4. Very Much True |
| Optimism | Please tell us how true each statement is of you.   * “Each day I look forward to having a lot of fun.” * “I usually expect to have a good day.” * “Overall, I expect more good things to happen to me than bad things.”  1. Not At All True 2. A Little True 3. Pretty Much True 4. Very Much True |
| Satisfaction | I would describe my satisfaction with...   * my family life as… * my friendships as... * my school experience as... * myself as... * where I live as...  1. Very Dissatisfied 2. Dissatisfied 3. A Little Dissatisfied 4. A Little Satisfied 5. Satisfied 6. Very Satisfied |

**Table 22.**

School District Sample - Included in Study

|  |  |  |
| --- | --- | --- |
| **Name** | **Climate** | **Grades** |
| Arvin Union School District | LOW | 7th |
| Brawley Elementary School District | LOW | 7th |
| Del Norte County Unified | LOW | 7th |
| Dinuba Unified School District | LOW | 7th |
| Imperial Unified School District | LOW | 9th |
| Lake Elsinore Unified School District | LOW | 7th, 9th, 11th |
| Lakeside Union Elementary School District | LOW | 7th |
| Los Banos Unified School District | LOW | 7th, 9th, 11th |
| Oakdale Joint Unified School District | LOW | 7th |
| Placer Union High School District | LOW | 9th, 11th |
| Porterville Unified School District | LOW | 7th, 9th, 11th |
| Rocklin Unified School District | LOW | 7th, 9th, 11th |
| Shasta Union High School District | LOW | 9th, 11th |
| Sierra Sands Unified School District | LOW | 11th |
| Tulare Joint Union High School District | LOW | 9th, 11th |
| Western Placer Unified School District | LOW | 7th, 9th |
| Abc Unified School District | MODERATE | 7th, 9th, 11th |
| Alvord Unified School District | MODERATE | 7th, 9th, 11th |
| Anaheim Union High School District | MODERATE | 7th, 9th, 11th |
| Antioch Unified School District | MODERATE | 7th, 9th |
| Arcadia Unified School District | MODERATE | 9th |
| Atascadero Unified School District | MODERATE | 7th |
| Bakersfield City School District | MODERATE | 7th |
| Baldwin Park Unified School District | MODERATE | 7th, 9th, 11th |
| Beaumont Unified School District | MODERATE | 7th |
| Brea-Olinda Unified School District | MODERATE | 7th |
| Cajon Valley Union School District | MODERATE | 7th |
| Capistrano Unified School District | MODERATE | 7th, 9th, 11th |
| Centinela Valley Union High School District | MODERATE | 9th, 11th |
| Central Unified School District | MODERATE | 9th, 11th |
| Ceres Unified School District | MODERATE | 7th, 9th, 11th |
| Chino Valley Unified School District | MODERATE | 7th, 9th, 11th |
| Conejo Valley Unified School District | MODERATE | 7th |
| East Whittier City Elementary School District | MODERATE | 7th |
| El Rancho Unified School District | MODERATE | 7th, 9th |
| Escondido Union High School District | MODERATE | 9th, 11th |
| Escondido Union School District | MODERATE | 7th |
| Fairfield-Suisun Unified School District | MODERATE | 7th, 9th, 11th |
| Folsom-Cordova Unified School District | MODERATE | 7th, 9th, 11th |
| Fountain Valley Elementary School District | MODERATE | 7th |
| Fullerton Elementary School District | MODERATE | 7th |
| Glendora Unified School District | MODERATE | 11th |
| Greenfield Union School District | MODERATE | 7th |
| Grossmont Union High School District | MODERATE | 9th, 11th |
| Hemet Unified School District | MODERATE | 7th, 9th, 11th |
| Hueneme Elementary School District | MODERATE | 7th |
| Huntington Beach City Elementary School District | MODERATE | 7th, 9th, 11th |
| Irvine Unified School District | MODERATE | 7th, 9th, 11th |
| Lawndale Elementary School District | MODERATE | 7th |
| Lodi Unified School District | MODERATE | 7th, 9th, 11th |
| Los Alamitos Unified School District | MODERATE | 7th, 9th |
| Los Gatos Union Elementary School District | MODERATE | 9th, 11th |
| Lucia Mar Unified School District | MODERATE | 7th, 9th, 11th |
| Manteca Unified School District | MODERATE | 7th, 9th, 11th |
| Merced City Elementary School District | MODERATE | 7th |
| Newport-Mesa Unified School District | MODERATE | 7th, 9th, 11th |
| Norwalk-La Mirada Unified School District | MODERATE | 7th, 9th, 11th |
| Oakley Union Elementary School District | MODERATE | 7th |
| Ocean View School District | MODERATE | 7th |
| Oceanside Unified School District | MODERATE | 7th, 9th, 11th |
| Ontario-Montclair School District | MODERATE | 7th |
| Oxnard Union High School District | MODERATE | 9th, 11th |
| Palmdale Elementary School District | MODERATE | 7th |
| Paso Robles Joint Unified School District | MODERATE | 7th |
| Pleasant Valley School District | MODERATE | 7th |
| Pleasanton Unified School District | MODERATE | 7th, 9th, 11th |
| Pomona Unified School District | MODERATE | 7th, 9th, 11th |
| Redondo Beach Unified School District | MODERATE | 7th |
| Rio Elementary School District | MODERATE | 7th |
| Riverside Unified School District | MODERATE | 7th, 9th, 11th |
| Rosedale Union Elementary School District | MODERATE | 7th |
| Roseville Joint Union High School District | MODERATE | 9th, 11th |
| Saddleback Valley Unified School District | MODERATE | 7th, 9th, 11th |
| San Benito High School District | MODERATE | 11th |
| San Juan Unified School District | MODERATE | 7th, 9th, 11th |
| San Luis Coastal Unified School District | MODERATE | 9th |
| Santa Maria-Bonita School District | MODERATE | 7th |
| Simi Valley Unified School District | MODERATE | 7th, 9th, 11th |
| Torrance Unified School District | MODERATE | 7th, 9th, 11th |
| Tracy Joint Unified School District | MODERATE | 7th, 9th, 11th |
| Turlock Unified School District | MODERATE | 7th, 9th, 11th |
| Vacaville Unified School District | MODERATE | 7th, 9th, 11th |
| Vallejo City Unified School District | MODERATE | 7th, 11th |
| Ventura Unified School District | MODERATE | 7th, 9th, 11th |
| Visalia Unified School District | MODERATE | 9th, 11th |
| Washington Unified School District | MODERATE | 7th |
| Weaver Union School District | MODERATE | 7th |
| Westminster Elementary School District | MODERATE | 7th |
| Westside Union Elementary School District | MODERATE | 7th |
| Woodland Joint Unified School District | MODERATE | 9th, 11th |
| Alameda Unified School District | HIGH | 7th, 9th, 11th |
| Alhambra Unified School District | HIGH | 7th, 9th, 11th |
| Berkeley Unified School District | HIGH | 7th, 9th, 11th |
| Brentwood Union Elementary School District | HIGH | 7th |
| Carlsbad Unified School District | HIGH | 7th, 9th, 11th |
| Culver City Unified School District | HIGH | 9th |
| Downey Unified School District | HIGH | 7th, 9th |
| Dublin Unified School District | HIGH | 7th, 9th, 11th |
| East Side Union High School District | HIGH | 9th, 11th |
| El Dorado Union High School District | HIGH | 9th, 11th |
| El Monte City School District | HIGH | 7th |
| Franklin-Mckinley Elementary School District | HIGH | 7th |
| Hayward Unified School District | HIGH | 7th, 9th, 11th |
| Jefferson Union High School District | HIGH | 9th, 11th |
| La Mesa-Spring Valley School District | HIGH | 7th |
| Livermore Valley Joint Unified School District | HIGH | 7th, 9th, 11th |
| Manhattan Beach Unified School District | HIGH | 11th |
| Milpitas Unified School District | HIGH | 9th, 11th |
| Mt. Diablo Unified School District | HIGH | 7th, 9th, 11th |
| Northern Humboldt Union High School District | HIGH | 9th, 11th |
| Novato Unified School District | HIGH | 9th |
| Oak Grove Elementary School District | HIGH | 7th |
| Oakland Unified School District | HIGH | 7th, 9th, 11th |
| Palo Alto Unified School District | HIGH | 7th, 9th, 11th |
| Petaluma Joint Union High School District | HIGH | 7th, 9th, 11th |
| San Diego Unified School District | HIGH | 7th, 9th, 11th |
| San Dieguito Union High School District | HIGH | 9th, 11th |
| San Francisco Unified School District | HIGH | 7th, 9th, 11th |
| San Leandro Unified School District | HIGH | 7th |
| San Rafael City Elementary School District | HIGH | 7th |
| Santa Clara Unified School District | HIGH | 7th, 9th, 11th |
| Sequoia Union High School District | HIGH | 9th, 11th |
| South Pasadena Unified School District | HIGH | 9th |
| Twin Rivers Unified School District | HIGH | 7th, 9th, 11th |

**Table 23.**

School District Sample - Excluded From Study

|  |  |  |
| --- | --- | --- |
| **Name** | **Reason for Exclusion** | **Grades** |
| Acalanes Union High School District | Mixed Climate | 9th, 11th |
| Bellflower Unified School District | Mixed Climate | 7th, 11th |
| Castro Valley Unified School District | CDP | 7th, 9th, 11th |
| Corona-Norco Unified School District | Mixed Climate | 7th, 9th, 11th |
| Desert Sands Unified School District | Mixed Climate | 7th, 9th, 11th |
| Elk Grove Unified School District | Mixed Climate | 7th, 9th, 11th |
| Kern High School District | Mixed Climate | 9th, 11th |
| Lammersville Joint Unified School District | CDP | 7th |
| Liberty Union High School District | Mixed Climate | 9th, 11th |
| Merced Union High School District | Mixed Climate | 9th, 11th |
| Mountain View-Los Altos Union High School District | Mixed Climate | 9th, 11th |
| Napa Valley Unified School District | Mixed Climate | 7th, 9th, 11th |
| Nevada Joint Union High School District | Mixed Climate | 9th |
| Palos Verdes Peninsula Unified School District | Mixed Climate | 7th, 9th, 11th |
| Paramount Unified School District | Mixed Climate | 7th, 9th |
| Pasadena Unified School District | Mixed Climate | 7th, 9th |
| Rescue Union Elementary School District | CDP | 7th |
| Rowland Unified School District | CDP | 7th, 9th, 11th |
| San Lorenzo Unified School District | CDP | 7th, 9th, 11th |
| San Marcos Unified School District | Mixed Climate | 7th, 9th, 11th |
| San Mateo Union High School District | Mixed Climate | 9th, 11th |
| San Mateo-Foster City School District | Mixed Climate | 7th |
| San Ramon Valley Unified School District | Mixed Climate | 7th, 9th, 11th |
| Santa Barbara Unified School District | Mixed Climate | 7th, 9th, 11th |
| Santa Monica-Malibu Unified School District | Mixed Climate | 9th, 11th |
| Sweetwater Union High School District | Mixed Climate | 7th, 9th, 11th |
| Tamalpais Union High School District | Mixed Climate | 9th, 11th |
| Val Verde Unified School District | Mixed Climate | 7th |
| West Contra Costa Unified School District | Mixed Climate | 7th, 9th, 11th |
| Yucaipa-Calimesa Joint Unified School District | Mixed Climate | 7th, 9th, 11th |

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