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Emotional Distress, Bullying Victimization, and Protective Factors Among Transgender and Gender Diverse Adolescents in City, Suburban, Town and Rural Locations

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Abstract

Purpose—Understanding the root causes of the substantial disparities in risk and protective factors among transgender/gender diverse (TGD) adolescents is essential to the development and expansion of resources and supports for this vulnerable population. This study examines differences in emotional distress, bullying victimization, and protective factors among TGD high school students in city, suburban, town, and rural locations.

Methods—Data come from a statewide school-based survey conducted in Minnesota in 2016 (N=2168). Analysis of covariance models were used to predict the prevalence of multiple indicators of emotional distress, bullying victimization, and protective factors across the 4 location categories, with multiple adjustments.

Findings—Significant linear trends were observed for 2 emotional distress outcomes and 2 bullying victimization outcomes, with urban TGD students having the lowest rates and rural having the highest prevalences. Additional significant differences in emotional distress were noted, with unexpectedly high rates of depressive symptoms and suicidal ideation among suburban students.

Conclusions—Helping TGD adolescents in all types of locations identify resources and supportive professionals is critical to supporting this population.

Keywords

adolescence; bullying; mental health; social environment; transgender

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Risk and Protective Factors

A growing body of research has demonstrated that transgender and gender diverse (TGD) adolescents ages 14–25 have significantly higher rates of numerous risk behaviors and lower levels of protective factors than cisgender adolescents (ie, those whose gender identity and birth-assigned sex align).^{1–6} For example, our recent analysis of a large, school-based sample of Minnesota adolescents (N=81,885; n=2168 TGD students) found that almost two-thirds of TGD adolescents reported suicidal ideation, over 3 times higher than their cisgender counterparts.³ Bullying and peer harassment are often cited as contributors to emotional health disparities affecting lesbian, gay, bisexual, and queer/questioning (LGBQ) adolescents,^{7–9} and they may operate similarly for TGD adolescents. Rates of different types of bullying victimization have been shown to be 1.6 to 7.5 times higher among TGD than cisgender adolescents.³

Protective factors—characteristics of the individual, interpersonal relationships, and community^{10,11}—support young people and may buffer against poor health outcomes even in the face of risk.^{12–16} However, studies have found that lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ) adolescents report lower levels of critical protective factors, such as family and school support, than heterosexual adolescents.^{3,12,17} An outstanding question is whether levels of protection vary by the social ecologies or contexts within which vulnerable young people live, attend school, and spend free time.

TGD Adolescents in Diverse Locations

Two theoretical frameworks guide this research. Social Ecological Models emphasize multiple levels of influence on health, encompassing individual, school, and community factors, positing that individuals are part of a larger system that promotes (or even demands) certain actions and discourages (or prohibits) others.^{18–20} Location is a central feature cutting across these levels, with communities and schools characterized by the social norms, resources, policies, and public attitudes of the region, state, city, town, or neighborhood. In particular, the diversity of languages, racial and ethnic groups, economic classes, and modes of expression common in urban centers²¹ may engender greater comfort among young people with being “different.”

The Minority Stress Theory^{22,23} overlays well onto Social Ecological Models. It theorizes that individuals who identify with marginalized groups are subject to chronic social stressors, which can come from multiple sources and levels (eg, hate speech in interpersonal interactions, discriminatory policies or practices in organizations and community settings). As a result, marginalized individuals may internalize negative messages about their identities, experience a heightened awareness of stigma, or develop hypervigilance, which in turn negatively impacts health. The theory was originally conceptualized with regard to sexual orientation but has more recently been applied to gender identity.^{24,25} Location may be particularly relevant to the well-being of LGBTQ people, as differences in political views, religiosity, and other cultural factors depending on locale may contribute to a welcoming or hostile climate—and resulting stressors—for this group.^{26,27}

As described in the 2011 Institute of Medicine report on the health of LGBTQ people¹ and confirmed in more recent reviews,²⁸ the bulk of research on LGBTQ people has been conducted with samples from metropolitan areas (that is, built up urban areas and the economically connected surrounding territory, referred to here as cities and suburbs²⁹), due in part to the availability of clinics, events, and organizations through which recruitment is typically conducted. In our recent school-based study, we found similar proportions of students identifying as TGD in both metropolitan and non-metropolitan areas of Minnesota,³ suggesting the need for research addressing this population in a range of locations.

Several studies have begun addressing this research gap, finding substantial differences in needs and supports across communities. Research indicates that LGBTQ people in non-urban locations have high rates of a variety of risk behaviors compared to LGBTQ people in metropolitan areas and compared to heterosexual people in non-urban locations.^{28,30,31} More broadly, contributing factors of social climate, stigma, norms, and supportive resources differ across type of location, with greater hostility and fewer supports for LGBTQ people in non-metropolitan and rural locations.^{28,32–38} For example, in a national study of LGBTQ students' experiences in rural and small town schools, the Gay, Lesbian, & Straight Education Network found that LGBTQ students in rural schools were more likely than those in suburban and urban schools to hear negative comments about gender expression and sexual orientation; feel unsafe at school due to their sexual orientation, gender identity, or gender expression; and experience harassment and assault due to these characteristics.³⁷ Fewer resources were available in rural areas to help LGBTQ students navigate these threats, such as student support groups, supportive staff, and comprehensive anti-bullying policies.³⁷ Although there have been shifts in public sentiment and policy, moving towards greater acceptance and inclusion of LGBTQ people,^{39,40} many LGBTQ people still identify the negative social climate as the worst thing about living in their area, with this view being more common among younger respondents and those in smaller communities.^{35,36}

Limitations of Existing Research

The existing literature on LGBTQ people in different types of settings is limited in several ways. First, studies often include only adult samples.^{35,36,41–45} While LGBTQ adults identify certain benefits to living in smaller communities (eg, closeness to family, affordable housing, and in some cases, the local LGBTQ community),³⁶ these features may be less salient to young people. Adolescents are rarely able to make independent choices about where to reside or go to school; without this agency, they may experience the negative aspects of their location more acutely. Studies of adults may therefore not generalize to younger people.

Second, the few studies of LGBTQ adolescents that address rural or small town locations use LGBQ samples^{30,31} or samples that also include TGD adolescents, but they are not differentiated in analysis.^{34,37,46} Social attitudes towards and resources for TGD adolescents and LGBQ adolescents may differ, and the health, behaviors, and needs of these groups may also be different. The one existing study we are aware of focusing on TGD adolescents was conducted in one Midwestern state in the US and included participants from major metropolitan areas, small towns, and rural communities.³⁸ The authors found that

adolescents from non-metropolitan areas were more likely to report that their community was hostile compared to those from metropolitan areas.³⁸ Findings from this small study suggest disparities specific to TGD adolescents, but more research with large samples is needed.

Third, where comparisons are made, LGBTQ people in metropolitan areas (cities and suburbs) are combined. We were unable to identify any research with LGBTQ samples that distinguished between those in suburbs versus cities. On one hand, this combination makes sense; resources available in an urban center would be similarly available to those living in the surrounding suburbs. However, age may play a crucial role in access to services, as adolescents may not have access to a car or other transportation options to travel independently beyond their immediate residential area. Beyond accessing services, important differences exist more generally in population demographics (eg, income, race/ethnicity),^{47,48} political attitudes,⁴⁹ and other characteristics of urban and suburban locales, which may be relevant to the social climate and well-being of LGBTQ people.

Finally, existing research with TGD people relies almost exclusively on convenience samples recruited through LGBTQ organizations, Pride events, gender-related health clinics, or similar resources.^{1,4} This common limitation is particularly problematic when the subject of research is related to access to community resources (ie, organizations where recruitment is done) that are far more available in metropolitan areas than elsewhere.^{50,51} Heightened stigma in non-metropolitan areas may result in an even more select and non-representative group being connected to these resources (and thus available for research) compared to metropolitan areas, causing additional sampling bias. Research using samples with greater generalizability is critical to advancing understanding of these issues.

The Present Study

Understanding the root causes of the substantial disparities in risk and protective factors among TGD adolescents is essential to the development and expansion of resources and supports for this vulnerable population. Therefore, the present study uses data from a statewide school-based survey to examine emotional well-being, bullying victimization, and protective factors among TGD students attending schools in city, suburban, town, and rural locations. We hypothesize that: 1) rates of TGD bullying victimization experiences will be lowest in cities and will show an ordinal trend of increasing rates outside of cities (ie, higher in suburban, then town, then rural locations), 2) levels of protective factors for TGD students will be highest in city locations and show an ordinal trend of decreasing levels outside of cities, and 3) rates of TGD emotional distress will be lowest in cities and will show an ordinal trend of increasing rates outside of cities, even accounting for bullying victimization and protective factors.

Methods

Study Design, Setting, and Sample

As in our previous research,³ data for this analysis came from the 2016 Minnesota Student Survey (MSS), which is conducted triennially statewide by the Minnesota Departments of

Education, Health, Human Services, and Public Safety. Minnesota has a history of being relatively welcoming for LGBTQ people, with decades-old laws prohibiting discrimination in employment, housing, and public accommodation based on both sexual orientation and gender identity (since 1993); inclusive hate crimes protections (since 1989); and legal same-sex marriage that predates the Supreme Court's 2015 decision. However, the sociopolitical climate of the state is sharply divided along geographic lines, with generally progressive social attitudes in the major cities of Minneapolis and St. Paul and generally conservative attitudes in rural areas.⁴⁹

In each wave of the MSS, all school districts in the state are invited to participate, and students in 5th, 8th, 9th, and 11th grades in participating districts are eligible to complete surveys⁵² (grades were selected to range across early and middle adolescent age groups). The full MSS sample is evenly distributed by birth-assigned sex (49.5% female) and includes 68.3% white, non-Hispanic students, similar to the demographic profile of adolescents in the state. The gender identity question was only included at the high school level (grades 9 and 11), so the current analysis is restricted to these grades. Of all students enrolled in regular public schools in Minnesota in 2016, 71% of 9th graders and 61% of 11th graders provided data (N=81,885 students). In order to improve the validity of self-reported data, approximately 2% of surveys were discarded due to highly inconsistent responses or a response pattern suggesting exaggeration. The University of Minnesota's Institutional Review Board exempted this analysis from review due to use of existing anonymous data.

Data Collection, Survey and Measures

Surveys were completed during one class period via online or paper administration, at the discretion of participating districts. The MSS assesses a wide variety of characteristics, behaviors, and protective factors relevant to adolescent health. In 2016, a *gender identity* measure was added to the survey: "Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your gender identity?" (yes/no). Participants who marked "yes" to this item comprised the analytic sample (N=2,168, 2.7% of the total sample).

A *location* variable for each participating school was provided by the MSS administrators, using the National Center for Education Statistics' school locale codes for the street address of the school. Categories include city (ie, a principal city inside an urbanized area), suburb (ie, outside a principal city and inside an urbanized area), town (ie, inside an urban cluster that is separate from an urbanized area), and rural location (ie, census-defined rural territory that is separate from an urbanized area and/or urban cluster).⁵³

Four measures of *bullying victimization* by other students in the past 30 days were also included: physical ("pushed, shoved, slapped, hit, or kicked you when they weren't kidding around?" or "threatened to beat you up"), relational ("spread mean rumors or lies about you" or "excluded you from friends, other students, or activities"), and prejudice-based harassment ("bullied you for any of the following reasons: your gender [being male, female, transgender, etc.]; your gender expression [your style, dress, or the way you walk or talk]"). For each bullying item, 5 responses ranged from "never" to "every day;" each ordinal item was dichotomized at "once or twice" or more in the past 30 days versus none of that bullying type in the past 30 days, due to skewness in the original distributions and based on our

previous research indicating associations with adjustment problems even for infrequent bullying victimization.⁵⁴

Four *protective factors* were assessed. For each factor, survey items were averaged to create a scale score, with higher scores indicating higher levels of the factor. Internal developmental assets were measured using 14 items from the Search Institute (eg, “I express my feelings in proper ways”), and students responded on a 4-point scale ($\alpha=.90$).⁵⁵ Family connectedness included 4 items regarding ability to talk with a parent about problems and feeling cared for by parents and other adult relatives, each with 5 response options ($\alpha=.75$). Positive teacher relationships were measured with 6 items from the School Engagement Inventory (eg, “Overall, adults at my school treat students fairly”), each with 4 response options ranging from strongly disagree to strongly agree, and one additional item asking how much “teachers/other adults at school care about you” with 5 response options which were re-scaled to range 1–4 ($\alpha=.87$).⁵⁶ Feeling safe in the community was the average of 2 items regarding feeling safe going to/from school and feeling safe in one’s neighborhood (4 response options ranging from strongly disagree to strongly agree; $r=.62$).

Four measures of *emotional distress* were included. First, a 2-item depression screener assessed having “little interest or pleasure in doing things” and “feeling down, depressed or hopeless” in the last 2 weeks; 4 response options for each ranged from “not at all” (0) to “nearly every day” (3). Responses were summed, and the score was dichotomized at 3 or more points vs. fewer, as recommended by the developers.⁵⁷ Second, one item asked about non-suicidal self-directed violence in the past year (“purposely hurt or injure yourself without wanting to die, such as cutting, burning, or bruising yourself on purpose?”); responses were dichotomized as any vs. none due to extreme skewness in the distribution. Third and fourth, lifetime history of suicidal ideation and suicide attempts were measured with 2 items (“Have you ever [seriously considered attempting/actually attempted] suicide?”).

Several *covariates* were included in the analysis: birth-assigned sex (ie, “What is your biological sex;” male/female); grade level (9th/11th); race and ethnicity (2 items combined to create a 7-category variable: Hispanic; non-Hispanic American Indian, Asian, black, Pacific Islander, white, and multiple race; and receipt of free/reduced-price lunch (yes/no).

Data Analysis

Analysis of covariance (ANCOVA) models were used to predict the prevalence of each indicator of bullying victimization and the mean level of each protective factor across the 4 location categories, adjusting for demographic covariates. Similar models of emotional distress were further adjusted for a dichotomous indicator of experiences of any type of bullying victimization in the past 30 days and a summary score of all 4 protective factors. In large datasets, linear models have been shown to be valid for non-normal distributions; predicted means can therefore be interpreted as predicted probabilities of the dichotomous dependent variables.⁵⁸ Post-hoc tests contrasted estimates for each combination of location categories (between-category differences were noted with superscripts), and t-tests of trend were used to examine ordinal trends from city to rural locations. Finally, effect sizes were calculated using Cohen’s *d* statistic⁵⁹ as an indicator of practical significance. Interpretation

of effects as small ($d=0.2$), medium ($d=0.5$), and large ($d=0.8$) are based on Cohen's suggestions.⁵⁹ Prevalence and mean levels of each dependent variable are included in Figures 1–3 for cisgender students (overall) as a point of reference; this group is not included in tests of association. All analyses were conducted using SAS version 9.4 (SAS Institute Inc., Cary, North Carolina).

Results

Characteristics of the Sample

Within the sample of TGD students, 68.1% were assigned female at birth and 58.6% were in the 9th grade. White, non-Hispanic students comprised 58.7% of the TGD sample, and 38.8% received free/reduced-price lunch. TGD students from all across the state were included; 16.6% went to school in city settings, 44.8% in suburbs, 23.2% in towns, and 15.4% in rural locations. Table 1 shows additional details of the sample.

Emotional distress was common in this sample, with 61.3% reporting suicidal ideation and 31.0% having attempted suicide in their lifetime (Table 1). Bullying was also a common experience, with 25.1%–52.2% reporting different types of victimization in the past month. Mean levels of protective factors were at the medium-to-high level of each scale's range. For example, the average positive teacher relationships score was 2.74 on a scale of 1–4.

Associations Between Location and Bullying, Protective Factors, and Emotional Distress

Predicted probabilities of bullying victimization among TGD students in 4 location categories are shown in Figure 1. In 2 cases (physical bullying victimization and harassment regarding gender expression), significant linear trends were observed, ordered with distance from city locations (physical bullying: $t = 2.0$, $P = .045$; gender expression: $t = 2.3$, $P = .021$). For example, 41.4% of TGD students in city locations reported being harassed about their gender expression, while 50.6% of those in rural locations reported this experience, with suburban and town students at intermediate levels of 46.9% and 48.2%, respectively. Rates of relational bullying victimization and harassment regarding gender did not differ significantly across location categories. Effect sizes were small, ranging from .03 to .11.

As shown in Figure 2, predicted means of each protective factor were similar across all 4 school location categories. Post-hoc tests showed significant differences between some groups (eg, TGD students in towns reported significantly higher internal assets [2.59] than those in suburban [2.51, $P = .023$] or rural locations [2.46, $P = .003$]), but these differences were small, did not have a consistent pattern, and trend tests did not show the expected linear associations. Effect sizes for protective factors were also small (.07–.14).

Associations between location and emotional distress among TGD students, adjusting for bullying victimization and protective factors, are shown in Figure 3. Significant associations were evident for each indicator of emotional distress, but patterns differed somewhat across indicators, and differed in some cases from expected relationships. For non-suicidal self-directed violence and suicide attempts, TGD students in cities had the lowest rates and those in rural areas had the highest rates, with intermediate levels among suburban and town groups; these linear trends were significant (self-directed violence: $t = 2.5$, $P = .013$; suicide:

$t = 2.1, P = .036$). For depressive symptoms and suicidal ideation, omnibus tests indicated significant differences across location categories (depressive symptoms: $F = 4.4, P = .004$; suicidal ideation: $F = 3.1, P = .026$) but without a significant linear trend. TGD students attending schools in cities and towns had equivalent rates of these outcomes, but rates among suburban students were significantly higher. For example, among TGD students in cities, 51.0% reported depressive symptoms, but this rate was 60.3% among suburban TGD students. Effect sizes ranged from .10 to .17.

Discussion

This study used a large statewide survey of TGD adolescents to examine risk behaviors and protective factors in different types of locations. Findings were mixed regarding experiences of bullying victimization and emotional distress, with some evidence of a pattern of higher rates among students attending schools farther from city locations. Availability of supportive organizations and other resources, a more progressive sociopolitical climate, school programs such as gay/straight student organizations, and other features of urban settings may be protective against bullying behavior and consequent emotional distress. However, in other cases, suburban students stood out with unexpectedly high rates of emotional distress, and rates of some forms of bullying did not differ by location. Few differences by school location were evident for protective factors. Effect sizes for location type were small in all models. We note, however, that small differences have practical consequences for prevention and intervention activities when extrapolated to the whole population of adolescents.

Findings regarding emotional distress among TGD students in suburban settings were surprising: despite greater proximity to supports and resources in city settings, they showed higher rates of depressive symptoms and suicidal ideation than their peers in non-metropolitan towns, and statistically equivalent rates of all 4 indicators of emotional distress to those attending school in rural locations. Bullying is commonly viewed as a major cause of emotional health disparities among LGBQ adolescents⁷⁻⁹ and is presumed to be similarly harmful for TGD adolescents, yet victimization experiences were not elevated among suburban students in this sample, and models of emotional distress were adjusted for any bullying victimization. The contrast in patterns between emotional distress and bullying victimization raises questions about additional factors that may contribute to the emotional health disparities seen here, particularly in suburban settings. Two possible explanations deserve consideration. First, it may be that living in suburban locations challenges adolescent mental health regardless of gender identity. Although little research has examined this explicitly, some studies suggest that suburban adolescents may be at risk for poor emotional health outcomes due to very high academic goals, parental pressure to achieve, and expectations of perfectionism^{60,61} (which were not measured in the current study). A second possibility regards school climate and programs, access to supportive resources and systems, policies (eg, regarding bathroom access, sports teams), community levels of religiosity, homogeneity, and general sociocultural norms, which are additional interpersonal, community, and social characteristics that have been linked to well-being among LGBQ adolescents^{12,16,50,62-64} and should be investigated for TGD adolescents. These characteristics may interact in unique ways in suburban settings to create a more toxic social environment than would be expected based solely on proximity to relatively well-

resourced city environments. Further research is needed to replicate and explore these associations.

The absence of meaningful differences in protective factors across types of school locations may be a piece of good news for TGD adolescents, particularly outside of cities. Very similar rates of family connectedness and positive teacher relationships suggest that caring individuals exist to provide critical support to vulnerable students regardless of the social context or existence of formal resources in their communities. Advocates working on behalf of TGD adolescents may find it advantageous to build on protective factors that are already in place to explicitly address challenges stemming from the broader social climate. Supportive and caring teachers, for example, can intervene in the face of bullying, advocate for protective school policies and practices, support LGBT inclusive curricula and other programs (eg, gay/straight student organizations), provide visual indicators of support (eg, safe zone signs, rainbow flags, fliers of LGBT events), and act as liaisons to information and extracurricular resources.⁶⁵

Although several significant differences across school location were detected, it is worth noting that these are relatively subtle compared to the substantial disparities between TGD and cisgender adolescents.³ For example, over half of TGD participants attending schools in cities (51.0%) and towns (52.9%) screened positive for depression (the lowest rates across location types), yet only approximately 1 cisgender student in 5 (21.3%) reported this same outcome.³ Thus, although interventions aimed at strengthening supports and expanding resources for TGD adolescents in certain types of locations are warranted, concerted efforts towards eliminating disparities across gender identity are critical.

Strengths and Limitations

Several limitations in the study design should be noted. First, Minnesota has a policy of open enrollment, which permits students to attend school in a district where they do not reside.⁶⁶ Because the location variable was based on the school's address rather than the student's residence, results should be interpreted with this distinction in mind. Second, the survey item regarding gender identity included those who were "unsure" about their gender as well as those who identify as TGD. A response of unsure may represent a genuine developmental process for young people exploring their gender identity but also may reflect a lack of understanding of the question.⁶⁷ Importantly, numerous studies regarding LGBQ adolescents find that those who are unsure of their sexual orientation have rates of high-risk behaviors and victimization that are similar to those of lesbian, gay, and bisexual adolescents,^{6,68-71} but less is known about whether these assumptions translate to TGD adolescents. Third, the presence of student organizations (such as a Gay/Straight Alliance), LGBTQ youth-serving community organizations, and other supportive features of the social environment also differ across types of location and are negatively associated with harassment and emotional distress.^{15,16,38,50} However, these variables were not assessed in the present study. Similarly, because relatively few schools offer explicit protections for TGD students⁵⁰ and TGD students are subject to greater harassment and bullying than cisgender students,^{1,5} they are more likely to miss school on any given day, including the day of survey administration. Our findings suggest that some bullying victimization experiences are differentially related to

school location. Thus, our findings are conservative and may underestimate prevalence of these behaviors; missing cases of harassment and emotional distress would also bias results towards the null. Similarly, participation in the MSS at the school district level, parental consent, and/or student response may have been affected by a location's sociopolitical climate, which would introduce sampling bias that could not be accounted for in this analysis. Finally, as a self-report survey administered in school settings, responses may be subject to social desirability bias, in spite of the guarantee of anonymity for survey participants. A TGD identity may also be under-reported, which would similarly bias results towards the null.

In addition, several features of this study strengthen its contribution to the existing literature. First, the statewide, school-based sampling strategy generated an adequate number of participants in different types of locations. Recruitment was unrelated to access to or involvement with LGBTQ services and included those who had publicly disclosed their TGD status as well as those who had not. Findings are therefore expected to have greater generalizability than many studies using convenience samples recruited through LGBTQ support organizations, websites, or clinics.¹ Second, the use of varied language within the gender identity measure (eg, genderqueer) captured a diverse group of young people who self-identify with a variety of gender-related terms, which is an advance over many previous studies with more limited language.

Conclusions

Helping TGD adolescents in all types of locations identify key resources and professionals who are well-informed on gender identity issues is critical to supporting this population. Because most young people are in schools, increasing the competence of teachers, administrators, and support personnel (eg, counselors, social workers, nurses) would be a good starting point. In addition to being accessible, these staff typically attend professional development where education, training, and protocols can be disseminated (eg, regarding prejudice-based bullying, appropriate referrals to outside mental or physical health care, or facilitation of a peer support group), strengthening their capacity as allies by advocating for students throughout the school and educating other adults in the building. Outside of schools, certain resources may be particularly beneficial in non-metropolitan areas, in order to increase access to services among TGD adolescents in rural or small town areas. Examples include a crisis hotline focusing on gender-related issues (www.translifeline.org), online LGBTQ peer support (www.glnh.org), and organized busing to Pride events in larger areas. For their part, existing national LGBTQ support resources may need to re-evaluate their services with a small town or rural lens to ensure they are familiar with factors important in smaller communities and that their offerings are promoted in ways that reach adolescents in these areas.

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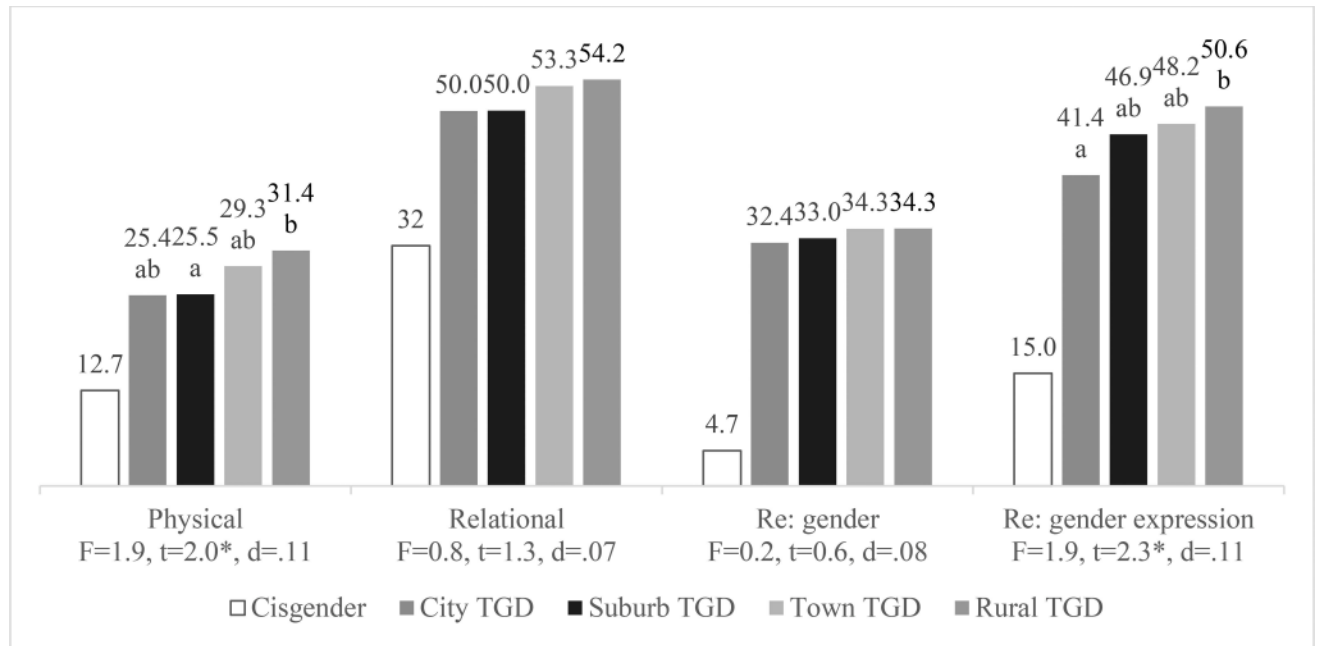


Figure 1. Predicted Probabilities of Bullying Victimization Among TGD Students, by Location

Notes: * $P < .05$

ab: Within sections, predicted probabilities that share a letter are statistically equivalent ($P > .05$). Models adjust for assigned sex, grade in school, race/ethnicity and free/reduced-price lunch status among TGD students. Overall prevalence of bullying victimization for cisgender students is shown for reference only.

TGD = transgender and gender diverse

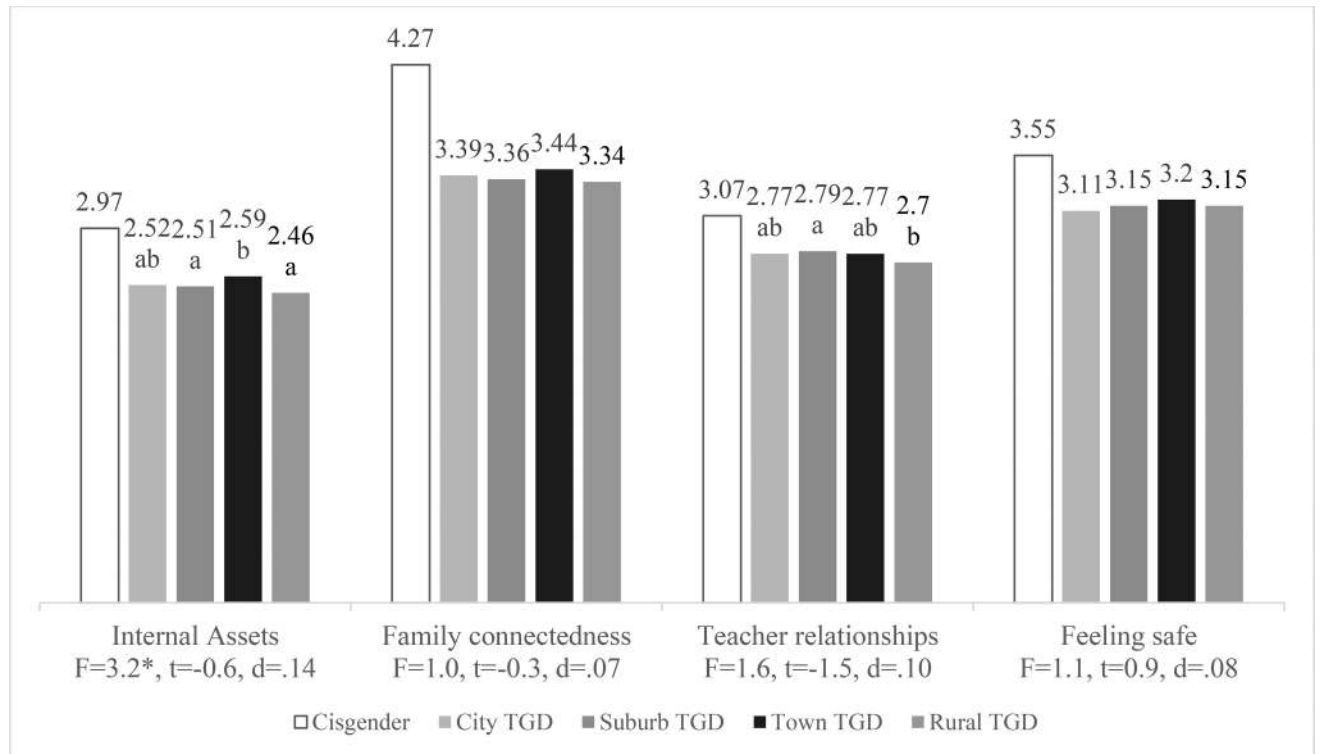


Figure 2. Protective Factors Among TGD Students, by Location

Notes: * $P < .05$

ab: Within sections, predicted probabilities that share a letter are statistically equivalent ($P > .05$). Models adjust for biological sex, grade in school, race/ethnicity and free/reduced-price lunch status among TGD students. Overall mean levels of protective factors for cisgender students are shown for reference only.

TGD = transgender and gender diverse

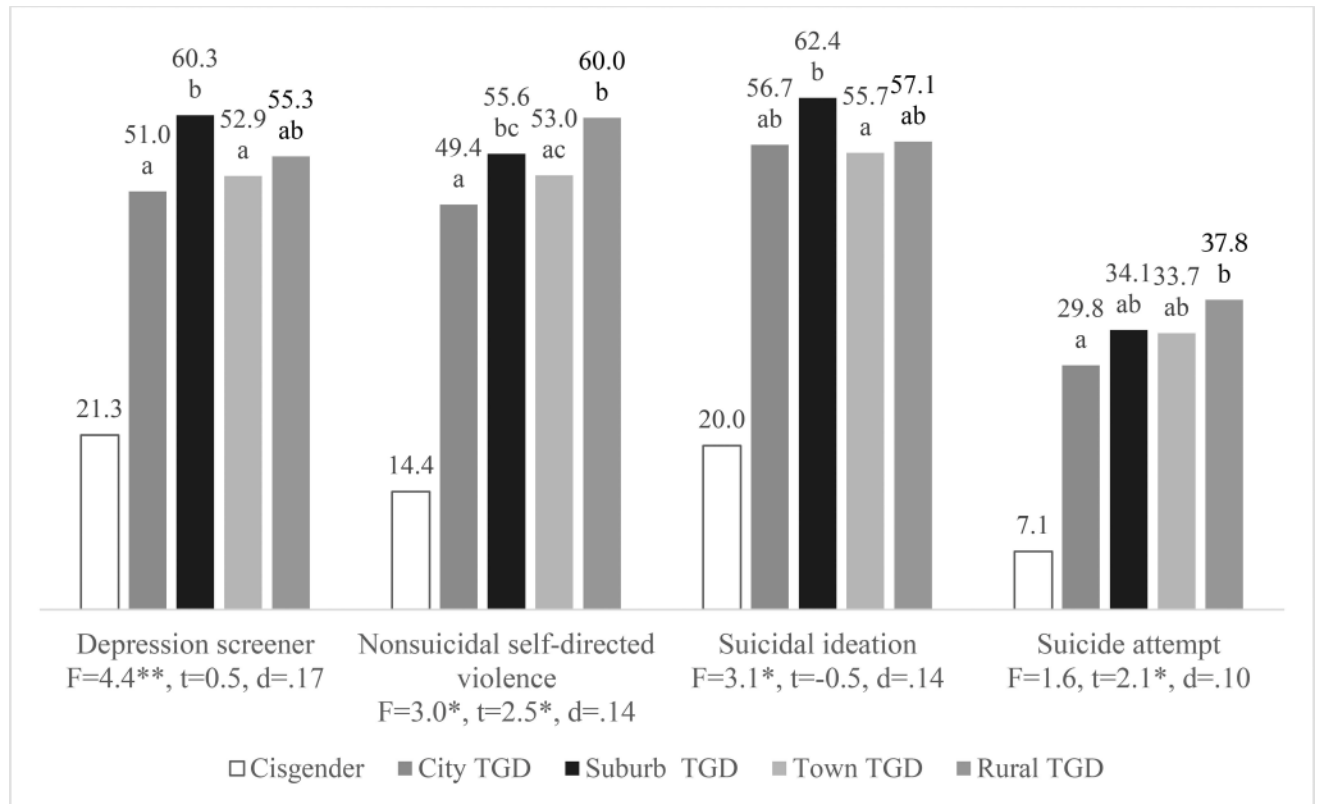


Figure 3. Predicted Probabilities of Emotional Distress Among TGD Students, by Location

Notes: * $P < .05$; ** $P < .01$

abc: Within sections, predicted probabilities that share a letter are statistically equivalent ($P > .05$). Models adjust for assigned sex, grade in school, race/ethnicity, free/reduced-price lunch status, any bullying victimization (past 30 days), and protective factors summary score, among TGD students only. Overall prevalence levels of emotional distress for cisgender students are shown for reference only.

TGD = transgender and gender diverse

Table 1Characteristics of TGD Students; Minnesota Student Survey (N=2,168)^a

	n	%
Demographics		
School location		
City	360	16.6
Suburb	972	44.8
Town	503	23.2
Rural	333	15.4
Birth-assigned sex		
Male	684	32.0
Female	1457	68.1
Grade		
9	1271	58.6
11	897	41.4
Race/ethnicity		
American Indian NH	44	2.1
Asian NH	181	8.5
Black/African American NH	140	6.5
HPI only NH	11	0.5
White only NH	1257	58.7
Multiple NH	252	11.8
Hispanic	255	11.9
Free/reduced lunch		
Yes	834	38.8
No	1,315	61.2
Bullying victimization (past month)		
Physical	526	25.1
Relational	1091	52.2
Regarding gender	737	35.3
Regarding gender expression	979	46.9
Any bullying victimization	1415	67.1
Emotional distress		
Depressed (past 2 weeks)	1155	57.9
Non-suicidal self-directed violence (past year)	1076	54.8
Suicidal ideation (lifetime)	1202	61.3
Suicide attempt (lifetime)	609	31.0
Protective factors		
Internal assets (1–4)	2.56	0.61

	n	%
Family connectedness (1–5)	3.53	0.96
Positive teacher relationships (1–4)	2.74	0.61
Feeling safe (1–4)	3.19	0.66
Summary score (1–17)	11.73	2.48

^aTotals do not sum to 2,168 for assigned sex, race/ethnicity, and free/reduced lunch due to missing data.

TGD = transgender and gender diverse

NH = non-Hispanic

HPI = Hawaiian/Pacific Islander

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