HHS Public Access

Author manuscript

Pediatrics. Author manuscript; available in PMC 2020 September 01.

Published in final edited form as:

Pediatrics. 2019 November ; 144(5): . doi:10.1542/peds.2019-1183.

Suicidality Disparities Between Transgender and Cisgender Adolescents

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Abstract

BACKGROUND AND OBJECTIVES: Emerging evidence indicates transgender adolescents (TGAs) exhibit elevated rates of suicidal ideation and attempt compared with cisgender adolescents (CGAs). Less is known about risk among subgroups of TGAs because of limited measures of gender identity in previous studies. We examined disparities in suicidality across the full spectrum of suicidality between TGAs and CGAs and examined risk for suicidality within TGA subgroups.

METHODS: Adolescents aged 14 to 18 completed a cross-sectional online survey (N = 2020, including 1148 TGAs). Participants reported gender assigned at birth and current gender identity (categorized as cisgender males, cisgender females, transgender males, transgender females, nonbinary adolescents assigned female at birth, nonbinary adolescents assigned male at birth, and questioning gender identity). Lifetime suicidality (passive death wish, suicidal ideation, suicide plan, suicide attempt, and attempt requiring medical care) and nonsuicidal self-injury were assessed.

RESULTS: Aggregated into 1 group, TGAs had higher odds of all outcomes as compared with CGAs. Within TGA subgroups, transgender males and transgender females had higher odds of suicidal ideation and attempt than CGA groups.

CONCLUSIONS: In this study, we used comprehensive measures of gender assigned at birth and current gender identity within a large nationwide survey of adolescents in the United States to examine suicidality among TGAs and CGAs. TGAs had higher odds of all suicidality outcomes, and transgender males and transgender females had high risk for suicidal ideation and attempt. Authors of future adolescent suicidality research must assess both gender assigned at birth and current gender identity to accurately identify and categorize TGAs.

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Dr Thoma conceptualized and designed the study, collected data, analyzed the data, drafted the initial manuscript, and reviewed and revised the manuscript; Drs Salk and Choukas-Bradley conceptualized and designed the study, collected data, drafted the initial manuscript, and reviewed and revised the manuscript; Drs Goldstein, Levine, and Marshal contributed to the conceptualization and design of the study and critically reviewed the manuscript for important intellectual content; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

Suicide is the second leading cause of death among adolescents in the United States,[1] and adolescent suicide rates have increased over the past 2 decades.[2] It is indicated in emerging evidence that transgender adolescents (TGAs; adolescents whose true gender identity diverges from their gender assigned at birth) are at higher risk for suicidality when compared with cisgender adolescents (CGAs; adolescents whose gender identity is the same as their gender assigned at birth).[3–8] In initial studies, 34% of TGAs report experiencing suicidal ideation during the past year,[6] 61% report experiencing suicidal ideation during their lifetime,[5] and 30% to 51% of TGAs report at least 1 lifetime suicide attempt.[5,7] Furthermore, over half of TGAs report engaging in nonsuicidal self-injury (NSSI) during the past year.[5,9] Elevated rates of suicidality likely result from disproportionate amounts of psychosocial stress, including victimization experienced by TGAs,[5,10,11] and experiences of discrimination could be more prevalent among TGAs who have widely disclosed their gender identity to others.[12]

Much previous research on TGA suicidality has been conducted with small convenience or clinical samples of TGAs,[4,13–15] and existing secondary analyses of large adolescent health data sets in the United States have been limited by insufficient assessment of gender identity.[5–7] To identify TGAs accurately, researchers must use a 2-step method that assesses both gender assigned at birth and current gender identity.[16,17] Limited measures of gender identity may have hampered researchers' ability to accurately identify all TGAs in previous studies of suicidality. For example, Perez-Brumer et al[6] used a data set with only a single item assessing gender identity and sexual orientation, and youth were instructed to select all applicable responses: heterosexual (straight); gay, lesbian, or bisexual; transgender; and not sure. Single items that conflate gender identity and sexual orientation could lead to errors in identifying TGAs accurately.[18] Additionally, subgroup comparisons among TGAs are inhibited when suboptimal measures of gender identity are used. Subgroups of TGAs have distinct psychosocial experiences that could predict suicidality, making it important to characterize rates of suicidality within TGA subgroups. For example, transgender females report higher rates of physical and sexual assault during childhood and adolescence than other transgender individuals,[19] experiences that could confer additional risk for suicidality. Emerging evidence indicates TGAs assigned female at birth are at higher risk for suicidal ideation and attempt when compared with TGAs assigned male at birth,[5,7,14] but researchers have often been limited to comparing TGAs on the basis of gender assigned at birth without fully accounting for the diversity of current gender identities.[5] Many TGAs identify as nonbinary, genderqueer, or agender (ie, they do not strongly identify with either male or female identities), and only 1 previous study has examined suicidality among nonbinary TGAs separately.[7] Toomey et al[7] found that nonbinary TGAs had lower rates of suicide attempts than transgender males but higher rates than transgender females. Importantly, the data set used allowed adolescents to only endorse "do not identify as exclusively male or female" without including specific nonbinary gender identities when assessing current gender identity, potentially leading to miscategorization of some TGAs. Finally, no previous study has examined differences in suicidality separately among nonbinary TGAs assigned male or female at birth. Gender assigned at birth predicts suicidality among all adolescents,[20] and it is imperative to examine suicidality among TGA subgroups that have been subdivided by gender assigned at birth.

Furthermore, previous work has only included 1 or 2 suicidality outcomes, precluding examination of disparities between TGAs and CGAs across the full spectrum of suicidality, including passive death wish, planning a suicide attempt, and making a suicide attempt that required medical care. Examining these additional outcomes is vital because more severe suicidal ideation predicts future suicidal behavior,[21,22] which predicts greater lethality of attempt, which in turn predicts death by suicide.[23,24] Thus, to enhance risk assessment with this vulnerable population, it is critical to characterize disparities across the spectrum of suicidality.

In the current study, we used a large, nationwide survey of adolescents that was designed to examine suicidality disparities between TGAs and CGAs by using comprehensive measures of both gender assigned at birth and current gender identity. Our first aim was to compare rates of suicidality among TGAs, aggregated into 1 group, to those of CGAs in the United States. Second, given limitations in previous secondary data analyses with regard to measures of gender identity, we sought to document and compare rates of suicidality among TGA subgroups.

METHODS

Procedure

We conducted a cross-sectional online survey to recruit CGAs and TGAs from July to October 2018. Participants were recruited via advertisements on Facebook and Instagram, social media platforms used by the majority of adolescents.[25] TGAs are a hidden population, and our social media recruitment procedures reached a diverse sample of TGAs. Forty-one percent of TGAs in our sample had not disclosed their gender identity to their parents, and 6% indicated no one knew of their gender identity. Furthermore, data were collected anonymously and privately on participants' own devices; researchers recommend private collection of suicidality data to optimize self-report accuracy.[26,27] Two sets of advertisements targeted users ages 14 to 18 in the United States. One had additional targets to reach TGAs by using interest labels such as "Transgender," "Gender-specific and gender-neutral pronouns," "Genderqueer," and "Passing (gender)." Almost all TGAs entered the survey through the TGA-specific advertisement, and CGAs who entered through the TGA-specific advertisement were more likely to identify their sexual orientation as gay or lesbian rather than heterosexual. There were no other demographic differences among cisgender participants entering through the 2 different advertisement sets.

All participants provided assent (with a waiver of parental permission) before completing questionnaires hosted on a secure server. Participants had the opportunity to enter a drawing for a $50 gift card. All participants endorsing suicidality were provided mental health resources, including 24-hour suicide hotlines. The University of Pittsburgh's Human Research Protection Office approved this study.

Advertisements were served 377 469 times, and 8747 clicks were recorded (2.48% click-through rate). A total of 5642 participants assented and began the survey. Adolescents were screened out if they were outside the targeted age range. Additionally, recruitment of TGAs assigned male at birth was slower than other groups, so we adopted a screening procedure

during the last 4 weeks of recruitment to recruit only these participants. In total, 1997 participants were screened out of the survey.

Multiple steps were taken to ensure the quality of collected data. First, Internet Protocol addresses were used to identify potential duplicate cases, and cases with the same Internet Protocol address were reviewed by hand. Duplicates with the same demographic characteristics and height and/or weight were removed (n = 320). Second, outlier analysis indicated that no cases had evidence of values outside the expected range on height, weight, and variables reported as counts. Third, free-response text was reviewed, and 7 cases were removed that had inappropriate responses to survey questions. Finally, 3 items from the Minnesota Multiphasic Personality Inventory infrequency scale[28] were included to identify participants who had responded carelessly or randomly.[29] Sensitivity analyses indicated the overall pattern of results did not change in logistic regression models when participants with high scores on this scale were omitted from analysis, so all cases were retained.

For the current analysis, 2020 participants who completed the survey through the suicidality questions were included. Compared to the full sample of 3318, these 2020 participants were older, more likely to identify as cisgender female or transgender male, and more likely to identify as bisexual or pansexual.

Measures

Gender Identity—Gender assigned at birth was assessed as male, female, or intersex. Intersex participants were excluded because of a low base rate (n = 11) and difficulty categorizing them as either male or female assigned at birth, a key component for the current study. Participants selected all gender identities that were applicable: “male,” “female,” “transgender,” “female-to-male transgender/FTM,” “male-to-female transgender/MTF,” “trans male/transmasculine,” “trans female/transfeminine,” “genderqueer,” “gender expansive,” “intersex,” “androgynous,” “nonbinary,” “two-spirited,” “third gender,” “agender,” “not sure,” and “other.” A 7-category gender identity variable was created, including cisgender male; cisgender female; transgender male (including participants who reported female gender assigned at birth and male, female-to-male transgender/FTM, and/or trans male or transmasculine identities); transgender female (including participants who reported male gender assigned at birth and female, male-to-female transgender/MTF, and/or trans female or transfeminine identities); nonbinary assigned female at birth; nonbinary assigned male at birth; and questioning gender identity (including participants who selected not sure and no other gender identities). Adolescents were categorized as nonbinary if they reported a genderqueer, gender expansive, intersex, androgynous, nonbinary, two-spirited, third gender, or agender gender identity and no binary gender identities. In other words, adolescents were not categorized as “nonbinary” if they selected any of the binary identities. This approach to categorization was supported by post hoc analyses examining group means of suicidality outcomes, which indicated that TGAs who selected a combination of binary and nonbinary identities were more similar to TGAs who selected only binary identities than to TGAs who selected only nonbinary identities. Questioning adolescents could not be divided by gender assigned at birth because of small cell sizes.

Suicidality—All suicidality items assessed lifetime ideation or behavior and were dichotomized (0 = none; 1 = any). Items were adapted from the Youth Risk Behavior Survey and the Columbia–Suicide Severity Rating Scale, which are both reliable and valid with adolescents.[30,31] Passive death wish was assessed with the question "Have you ever wished you were dead?" Suicidal ideation was assessed with "Have you ever seriously thought about killing yourself?" Planning a suicide attempt was assessed with "Have you ever made a plan about how you would kill yourself?" Suicide attempt was assessed with "In your lifetime, how many times have you actually tried to kill yourself?" Suicide attempt requiring medical care was assessed with "Did any suicide attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?" NSSI was assessed with "In your lifetime, have you ever done anything to purposefully hurt yourself without wanting to die (for example, cutting your skin or burning yourself)?"

Demographic Variables—Participants reported their age, race and/or ethnicity (coded as white, African American, Latinx, Asian American or Pacific Islander, mixed, and American Indian or other), and sexual orientation (coded as heterosexual; gay or lesbian; bisexual or pansexual; and queer, questioning, or other). Subjective social status (SSS) was measured with the McArthur Scale of Subjective Social Status, a measure of adolescents' perceptions of their family's social status as compared with all other families in American society, visualized by a 10-rung ladder.[32]

Participants

Table 1 includes descriptive demographic information for the full sample, for CGAs, for TGAs (including nonbinary and questioning adolescents), and for each gender identity subgroup. According to zip codes, participants lived in all 50 states as well as Washington, District of Columbia and Puerto Rico. CGAs were similar to nationally representative data with regard to race and/or ethnicity. Compared with CGAs, TGAs were more likely to report white race and/or ethnicity, minority sexual orientations, older age, and lower SSS.

Analysis

First, descriptive data for each suicidality outcome were examined for TGAs, CGAs, and each gender identity subgroup. Second, χ^2 tests, including pairwise comparisons between each gender identity subgroup on each suicidality outcome, were conducted for outcomes using SPSS version 25 (IBM SPSS Statistics, IBM Corporation). Bonferroni corrections were applied to significance levels to account for multiple comparisons (n = 21; $P < .002$). Third, multivariate logistic regression models were estimated to examine the odds of each outcome for TGAs (aggregated into 1 group) compared with CGAs while adjusting for gender assigned at birth, age, SSS, race and/or ethnicity, and sexual orientation. Finally, multivariate logistic regression models were estimated for each dichotomized suicidality outcome predicted by gender identity (coded as 7 subgroups) while controlling for covariates. Fewer than 2% of participants had missing data, and listwise deletion was used to account for missingness in all models.

RESULTS

Unadjusted Results

Percentages, along with 95% confidence intervals (CIs), of TGAs, CGAs (including rates for sexual minority and heterosexual CGAs), and participants in each gender identity subgroup endorsing each dichotomized suicidality outcome are presented in Table 2. Means and SEs were multiplied by 100 to transform to a percentage metric before calculating CIs. Within bivariate subgroup comparisons, each χ^2 omnibus test was significant (all P values <.001), indicating each suicidality outcome varied significantly across the 7 gender identity categories. Pairwise comparisons (see Table 2) indicated that transgender males, transgender females, and nonbinary adolescents assigned female at birth reported higher rates of suicidal ideation and suicide attempt as compared with either cisgender group. Transgender males and nonbinary adolescents assigned female at birth reported higher rates of passive death wish, planning a suicide attempt, and suicide attempt requiring medical care as compared with either cisgender group. Transgender males and nonbinary adolescents assigned female at birth reported higher rates of NSSI than CGAs and transgender females.

Adjusted Results

In the first set of adjusted logistic regression models, TGAs (aggregated into 1 group) had higher odds of lifetime passive death wish (odds ratio [OR] = 2.60), suicidal ideation (OR = 2.20), suicide plan (OR = 1.82), suicide attempt (OR = 1.65), attempt requiring medical care (OR = 2.01), and NSSI (OR = 2.88) when compared with CGAs. Results of adjusted logistic regression analyses examining odds of suicidality in gender identity subgroups as compared with the cisgender male reference group are presented in Table 3. After adjusting for all demographics, cisgender females, transgender males, and nonbinary adolescents assigned female at birth had higher odds of each suicidality outcome. Transgender females had higher odds of each outcome except for suicide attempt requiring medical care. Nonbinary adolescents assigned male at birth had higher odds of suicide attempt requiring medical care and NSSI. Adolescents questioning their gender identity had higher odds of all outcomes except for suicide attempt. Finally, we contrast coded gender identity to compare all gender identity groups to cisgender females and completed post hoc adjusted analyses examining suicidal ideation and attempts. These models indicated that transgender males and transgender females, but no other TGA subgroups, had higher odds of suicidal ideation and attempt when compared with cisgender females (see Table 4).

DISCUSSION

In this study, we used comprehensive measures of gender assigned at birth and current gender identity within a large nationwide survey of adolescents in the United States to examine suicidality among TGAs and CGAs. As in previous research,[3,5–8,13] TGAs had higher odds of experiencing suicidality compared with CGAs. This pattern of results was observed in both adjusted and unadjusted models for most outcomes. When aggregated into 1 group, TGAs had higher odds of reporting each outcome when compared with CGAs in adjusted models. Results document that TGAs have higher odds of engaging in suicidal

behavior requiring medical care, which could predispose them to additional future suicide attempts and increase their risk for death by suicide.

The current study advances our understanding of which subgroups of TGAs are at risk for suicidality. Transgender males and transgender females had higher rates of suicidal ideation and attempt than male and female CGAs in adjusted models, and nonbinary adolescents assigned female at birth had higher risk than male CGAs in adjusted models examining ideation and attempt. These results for transgender males and nonbinary adolescents assigned female at birth are consistent with previous findings indicating that TGAs assigned female at birth were at highest risk for suicidal ideation and attempt.[5,7,14] However, the results for transgender females diverge from previous results in which authors found relatively lower rates of suicidality among transgender females as compared with other TGAs.[5,7] Given that subsample sizes for TGAs assigned male at birth were small in the current study, findings among this subgroup must be interpreted with caution. Limited measures of gender identity may have led to inaccurate estimates of suicidality among transgender females in previous studies. Transgender females and nonbinary adolescents assigned male at birth have often been combined into 1 group when examining subgroup differences in suicidality among TGAs.[5] However, our results indicate transgender females have higher risk for suicidal ideation and attempt compared with CGAs, whereas nonbinary adolescents assigned male at birth do not. Thus, it is possible that estimates of suicidality that aggregate all TGAs assigned male at birth into 1 group underestimate rates of suicidality among transgender females. Our findings indicate comprehensive measurement of both gender assigned at birth and current gender identity is important to understand subgroup rates of suicidality among TGAs.

Although our sample is not nationally representative, participants came from every state, and CGAs were similar to representative data regarding race and/or ethnicity. However, rates of suicidality among both CGAs and TGAs appear higher in the current sample compared to other samples of adolescents,[7,33,34] and this could result from several factors. First, we collected suicidality data using a lifetime timeframe, making it difficult to compare to recent epidemiological estimates of adolescent suicidality in the United States, which all use a past-year timeframe.[34] Second, rates of suicidality among CGAs were likely inflated because of oversampling of females and lesbian, gay, and bisexual adolescents, who have well-documented elevations in suicidality.[20,35] Importantly, adjusted odds ratios (aORs) comparing TGA subgroups to male CGAs on suicide attempts were larger in the current study than those observed in the Toomey et al[7] study (range of 1.7–2.9 vs 1.0–1.5), so potentially higher rates of suicidality among CGAs did not suppress ORs in our data. Third, our data were collected through an anonymous, online survey completed on adolescents' own devices. This diverges from school-based surveys used in other large-scale studies of TGA suicidality in which adolescents complete questionnaires in classrooms shared with their peers.[5–7] Anonymous, private collection of suicidal ideation and NSSI self-reports approximately doubles endorsement of these items, leading to more accurate reports.[26,27] Finally, recent research indicates the amount of time adolescents use electronic media may be associated with suicidality,[36] possibly inflating rates of suicidality in each gender identity group given our social media recruitment strategy. However, the vast majority of adolescents now have a smartphone and use social media,[25] and both TGAs and CGAs were recruited

through the same social media platforms. Future nationally representative studies of adolescents in the United States should use measures of both gender assigned at birth and current gender identity to accurately identify TGAs and examine risk for suicidality among TGA subgroups.

Our sample is limited by the inclusion of more TGAs assigned female at birth than TGAs assigned male at birth. This is common within samples of TGAs,[37] and transgender females are older than transgender males in recent samples of transgender adults.[38] Thus, it is possible that many transgender individuals assigned male at birth do not identify as transgender and begin their transition until young adulthood, leading to smaller subsamples of transgender females in adolescent samples. Small cell sizes in the transgender female and nonbinary assigned male at birth groups may have led to imprecise estimates of suicidality in these groups, and subgroup comparisons involving these groups may have been underpowered. Despite this limitation, our results indicate transgender females are at high risk for suicidal ideation and attempt. Researchers should recruit adequate subsamples of TGAs assigned male at birth in future studies of suicidality. Additionally, the current study was limited by its cross-sectional design. In future work, researchers should examine how gender identity and suicidality are associated over time during adolescence. In this anonymous online study, we were unable to query imminent risk for suicide and were limited to assessing lifetime prevalence of suicidality, making it difficult to examine psychosocial predictors of suicidality.

TGA suicidality is likely predicted by minority stress experiences, including victimization targeting their stigmatized gender identity.[11,13,39,40] In future work, researchers should examine how psychosocial stressors contribute to both the onset of suicidal ideation as well as the transition from suicidal ideation to suicide attempt among TGAs.

CONCLUSIONS

TGAs are at high risk for suicidal ideation and behavior, and researchers should include comprehensive measures of gender assigned at birth and current gender identity to accurately characterize TGA subgroup differences in future suicidality studies. Our results indicate transgender males, transgender females, and nonbinary adolescents assigned female at birth are at especially high risk for suicidal ideation and attempt. TGAs should be prioritized in future research examining adolescent suicidality, including explicating mechanisms of suicidality among TGAs to inform future intervention and prevention strategies designed to reduce suicidality within this vulnerable population.

ACKNOWLEDGMENT

We acknowledge the contribution of Kathryn Fox, MA, who provided consultation during the editing process.

FUNDING: Funded by the University of Pittsburgh Central Research Development Fund through an award given to Drs Salk, Thoma, and Choukas-Bradley. Dr Thoma was supported by National Institute of Mental Health grant T32 MH018951, and the Drs Salk and Choukas-Bradley were supported by National Institute of Mental Health grant T32 MH018269.

ABBREVIATIONS

aOR	adjusted oddsratio
CGA	cisgender adolescent
CI	confidence interval
NSSI	nonsuicidal self-injury
OR	oddsratio
SSS	subjective social status
TGA	transgender adolescent

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WHAT'S KNOWN ON THIS SUBJECT:

Although initial evidence indicates transgender adolescents (TGAs) have high rates of suicidality, previous studies have been limited by insufficient measurement of gender identity. TGAs assigned female at birth could have higher rates of suicidality than TGAs assigned male at birth.

WHAT THIS STUDY ADDS:

Using comprehensive measures of gender assigned at birth and current gender identity to examine TGA suicidality, we indicate transgender males and transgender females have higher odds of suicidal ideation and attempt than their cisgender peers.

TABLE 1

Demographics Characteristics for Total Sample, CGAs, TGAs, and Gender Identity Subgroups

	Total Sample (*N* = 2020)	All Cisgender (*n* = 872)	All Transgender (*n* = 1148)	Cisgender Males (*n* = 218)	Cisgender Females (*n* = 654)	Transgender Males (*n* = 616)	Transgender Females (*n* = 63)	Nonbinary Assigned Female (*n* = 375)	Nonbinary Assigned Male (*n* = 43)	Questioning (*n* = 51)
Categorical variables, *n* (%)										
Race and/or ethnicity										
White	1328 (65.7)	545 (62.5)	783 (68.2)	134 (61.5)	411 (62.8)	419 (68.0)	46 (73.0)	265 (70.7)	24 (55.8)	29 (56.9)
African American	175 (8.7)	89 (10.2)	86 (7.5)	17 (7.8)	72 (11.0)	46 (7.5)	2 (3.2)	26 (6.9)	7 (16.3)	5 (9.8)
Latinx	182 (9.0)	90 (10.3)	92 (8.0)	22 (10.1)	68 (10.4)	53 (8.6)	4 (6.3)	24 (6.4)	4 (9.3)	7 (13.7)
Asian American or Pacific Islander	76 (3.8)	48 (5.5)	28 (2.4)	12 (5.5)	36 (5.5)	15 (2.4)	3 (4.8)	8 (2.1)	0 (0.0)	2 (3.9)
American Indian	24 (1.2)	8 (0.9)	16 (1.4)	2 (0.9)	6 (0.9)	5 (0.8)	2 (3.2)	7 (1.9)	0 (0.0)	2 (3.9)
Mixed	225 (1 1.1)	86 (9.9)	139 (12.1)	28 (12.8)	58 (8.9)	75 (12.2)	6 (9.5)	45 (12.0)	8 (18.6)	5 (9.8)
Other	9 (0.4)	5 (0.6)	4 (0.3)	2 (0.9)	3 (0.5)	3 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.0)
Sexual orientation										
Straight or heterosexual	416 (20.6)	381 (43.7)	35 (3.0)	118 (54.1)	263 (40.2)	28 (4.5)	2 (3.2)	1 (0.3)	1 (2.3)	3 (5.9)
Gay or lesbian	312 (15.4)	106 (12.2)	206 (17.9)	50 (22.9)	56 (8.6)	125 (20.3)	15 (23.8)	49 (13.1)	13 (30.2)	4 (7.8)
Bisexual or pansexual	875 (43.3)	310 (35.6)	565 (49.2)	46 (21.1)	264 (40.4)	291 (47.2)	34 (54.0)	193 (51.5)	15 (34.9)	32 (62.7)
Queer or other	385 (19.1)	55 (6.3)	330 (28.7)	3 (1.4)	52 (8.0)	163 (26.5)	10 (15.9)	132 (35.2)	14 (32.6)	11 (21.6)
Questioning	14 (0.7)	7 (0.8)	7 (0.6)	1 (0.5)	6 (0.9)	5 (0.8)	1 (1.6)	0 (0.0)	0 (0.0)	1 (2.0)
Continuous variables mean (SD)										
Age	15.9 (1.2)	15.9 (1.1)	16.0 (1.2)	16.0 (1.1)	15.8 (1.1)	16.0 (1.2)	16.2 (1.2)	15.9 (1.2)	16.2 (0.9)	15.6 (1.1)
SSS	5.7 (1.6)	6.0 (1.6)	5.4 (1.5)	6.0 (1.7)	6.0 (1.5)	5.4 (1.5)	5.1 (1.5)	5.6 (1.6)	5.4 (1.4)	5.2 (1.3)

TABLE 2

Lifetime Prevalence of Suicidality Outcomes Within Gender Identity Groups, Including Unadjusted Pairwise Comparisons Between Gender Identity Subgroups

Suicidality Outcome	All Cisgender	Cisgender Sexual Minority	Cisgender Heterosexual	All Transgender	Cisgender Males	Cisgender Females	Transgender Males	Transgender Females	Nonbinary Assigned Female	Nonbinary Assigned Male	Questioning
Passive death wish	77.0	84.7	68.2	94.3	61.9	82.1	96.4	93.7	92.3	86.0	92.2
95% CI	74.2–79.8	81.5–87.9	63.5–72.9	93.0–95.6	55.4–68.4	79.2–85.0	94.9–97.9	87.6–99.8	89.6–95.0	75.5–96.5	84.7–99.7
Significance[a]	—	—	—	—	A	B	C	B, C, D	C, D	B, D	B, C, D
Suicidal ideation	60.4	70.4	48.2	84.8	46.5	65.0	88.6	90.5	79.2	72.1	82.4
95% CI	57.1–63.7	66.3–74.5	43.2–53.2	82.7–86.9	39.8–53.2	61.3–68.7	86.1–91.1	83.2–97.8	75.1–83.3	58.5–85.7	71.8–93.0
Significance[a]	—	—	—	—	A	B	C	C, D	D	B, D	B, C, D
Planning attempt	49.8	57.6	40.7	72.5	37.6	53.8	75.6	73.0	69.6	48.8	72.5
95% CI	46.5–53.1	53.2–62.0	35.8–45.6	70.0–75.1	31.2–44.0	50.0–57.6	72.2–79.0	62.0–84.0	64.9–74.3	33.7–63.9	60.1–84.9
Significance[a]	—	—	—	—	A	B	C	B, C, D	C, D	A, B, D	B, C, D
Suicide attempt	31.4	37.9	23.4	50.3	24.3	33.8	54.5	57.1	44.3	44.2	41.2
95% CI	28.3–34.5	33.6–42.2	19.1–27.7	47.4–53.2	18.6–30.0	30.2–37.4	50.6–58.4	44.8–69.4	39.3–49.3	29.2–59.2	27.6–54.8
Significance[a]	—	—	—	—	A	A	B	B, C	C	A, B, C	A, B, C
Attempt requiring medical care	5.6	7.5	3.2	13.2	1.4	7.0	15.4	6.3	10.9	14.0	9.8
95% CI	4.1–7.1	5.2—9.8	1.4–5.0	11.2–15.2	0.0–2.9	5.0–9.0	12.5–18.3	0.2–12.4	7.7–14.1	3.5–24.5	1.6–18.0
Significance[a]	—	—	—	—	A	B	C	A, B, C	B, C	B, C	B, C
NSSI	59.1	68.5	47.8	86.9	38.9	65.9	89.4	73.0	87.6	76.7	76.5
95% CI	55.8–62.4	64.3–72.7	42.8–52.8	84.9–88.9	32.4–45.4	62.2–70.0	87.0–91.8	62.0–84.0	84.2–91.0	63.9–89.5	64.7–88.3
Significance[a]	—	—	—	—	A	B	C	B	C	B, C	B, C

—, not applicable.

[a]Each letter denotes gender identity subgroups that do not differ significantly from each other at the 0.002 level within unadjusted pairwise comparisons for each outcome.

TABLE 3

aORs and 95% CIs for Each Lifetime Suicidality Outcome for Gender Identity Subgroups and Covariates

Variable	Passive Death Wish aOR (95% CI)	Suicidal Ideation aOR (95% CI)	Planning Attempt aOR (95% CI)	Suicidal Attempt aOR (95% CI)	Attempt Requiring Medical Care aOR (95% CI)	NSSI aOR (95% CI)
Gender identity (cisgender male reference)						
Cisgender female	2.53 (1.76–3.64) *	2.04 (1.46–2.84) *	1.90 (1.37–2.64) *	1.49 (1.03–2.15) *	5.85 (1.79–19.16) *	3.02 (2.16–4.23) *
Transgender male	9.39 (5.41–16.27) *	5.64 (3.77–8.42) *	3.82 (2.66–5.50) *	2.72 (1.86–3.99) *	12.12 (3.70–39.66) *	9.65 (6.41–14.54) *
Transgender female	4.52 (1.53–13.32) *	6.30 (2.54–15.58) *	2.98 (1.56–5.68) *	2.90 (1.56–5.40) *	3.91 (0.83–18.40)	2.73 (1.42–5.23) *
Nonbinary assigned female	4.06 (2.37–6.96) *	2.77 (1.83–4.19) *	2.82 (1.90–4.17) *	1.84 (1.22–2.78) *	8.59 (2.55–28.97) *	8.22 (5.21–12.99) *
Nonbinary assigned male	2.11 (0.82–5.43)	1.76 (0.83–3.73)	1.09 (0.55–2.15)	1.75 (0.86–3.54)	10.13 (2.36–43.51) *	3.79 (1.73–8.31) *
Questioning gender	3.68 (1.23–10.98) *	3.33 (1.50–7.39) *	3.23 (1.61–6.49) *	1.48 (0.76–2.90)	7.59 (1.70–33.83) *	3.64 (1.75–7.57) *
Race and/or ethnicity (white reference)						
African American	1.27 (0.73–2.21)	1.23 (0.82–1.83)	1.12 (0.79–1.58)	1.41 (1.10–1.97) *	1.05 (0.61–1.81)	0.83 (0.56–1.23)
Latinx	1.26 (0.73–2.17)	1.04 (0.70–1.54)	1.31 (0.92–1.86)	1.51 (1.09–2.11) *	1.57 (0.98–2.52)	0.99 (0.66–1.48)
Asian American or Pacific Islander	0.74 (0.40–1.39)	0.99 (0.58–1.69)	1.04 (0.64–1.70)	1.28 (0.78–2.10)	1.14 (0.47–2.73)	0.46 (0.28–0.77) *
American Indian or other	1.74 (0.39–7.77)	1.25 (0.48–3.22)	2.04 (0.85–4.90)	2.61 (1.22–5.59) *	1.68 (0.61–4.59)	1.59 (0.57–4.42)
Mixed	0.87 (0.55–1.38)	1.28 (0.88–1.86)	1.18 (0.86–1.61)	1.01 (0.74–1.36)	1.03 (0.63–1.68)	0.91 (0.63–1.32)
Sexual orientation (straight reference)						
Gay or lesbian	1.72 (1.1 1–2.67) *	2.37 (1.64–3.44) *	1.90 (1.35–2.66) *	1.57 (1.1 1–2.23) *	1.71 (0.92–3.17)	2.03 (1.39–2.97) *
Bisexual or pansexual	3.24 (2.22–4.74) *	2.51 (1.88–3.37) *	1.81 (1.38–2.38) *	1.76 (1.32–2.36) *	1.34 (0.77–2.31)	2.18 (1.63–2.93) *
Queer, other, or questioning	1.92 (1.17–3.14) *	1.91 (1.32–2.77) *	1.64 (1.17–2.30) *	1.55 (1.10–2.20) *	0.97 (0.52–1.83)	1.41 (0.97–2.07)
Age	1.13 (1.00–1.29)	1.08 (0.98–1.19)	1.14 (1.04–1.23) *	1.14 (1.05–1.24) *	1.26 (1.10–1.43) *	1.06 (0.96–1.17)
SSS	0.81 (0.74–0.90) *	0.84 (0.78–0.90)	0.89 (0.84–0.95) *	0.83 (0.78–0.88) *	0.90 (0.81–0.99) *	0.89 (0.82–0.96) *

* $P < .05$.

TABLE 4

aORs and 95% CIs for Suicidal Ideation and Suicide Attempt for Gender Identity in Post Hoc Contrast Coded Models With Cisgender Females as Reference Group

Variable	Suicidal Ideation aOR 95% CI	Suicide Attempt aOR 95% CI
Gender identity (cisgender female reference)		
Cisgender male	0.49 (0.35–0.68) *	0.67 (0.47–0.97) *
Transgender male	2.77 (2.00–3.83) *	1.83 (1.42–2.37) *
Transgender female	3.09 (1.29–7.42) *	1.95 (1.12–3.39) *
Nonbinary assigned female	1.36 (0.97–1.91)	1.24 (0.92–1.66)
Nonbinary assigned male	0.86 (0.42–1.76)	1.18 (0.62–2.25)
Questioning gender	1.64 (0.77–3.49)	1.00 (0.54–1.82)

Models adjusted for race and/or ethnicity, sexual orientation, age, and SSS, and these covariates are reported in Table 3.

* $P < .05$.