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Original article

## Mental Health Disparities Among Canadian Transgender Youth


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 A B S T R A C T

**Purpose:** This study documented the prevalence of mental health problems among transgender youth in Canada and made comparisons with population-based studies. This study also compared gender identity subgroups and age subgroups (14–18 and 19–25).

**Methods:** A nonprobability sample of 923 transgender youth from Canada completed an online survey. Participants were recruited through community organizations, health care settings, social media, and researchers' networks. Mental health measures were drawn from the British Columbia Adolescent Health Survey and the Canadian Community Health Survey.

**Results:** Transgender youth had a higher risk of reporting psychological distress, self-harm, major depressive episodes, and suicide. For example, 65% of transgender 14- to 18-year olds seriously considered suicide in the past year compared with 13% in the British Columbia Adolescent Health Survey, and only a quarter of participants reported their mental health was good or excellent. Transgender boys/men and nonbinary youth were most likely to report self-harm and overall mental health remained stable across age subgroups.

**Conclusions:** Although a notable minority of transgender youth did not report negative health outcomes, this study shows the mental health disparities faced by transgender youth in Canada are considerable.

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**IMPLICATIONS AND CONTRIBUTION**

This study found considerable mental health disparities across gender identity subgroups. These findings underscore the need for policies and laws protecting transgender people from discrimination, training for transgender competency for mental health-care providers, and further development of transgender-specific interventions to reduce mental health problems among transgender youth.

Transgender youth are those whose gender identity does not align with society's expectations for the sex that they were assigned at birth. Many transgender youth report discrimination, bullying, and violence as a result of their gender identity, and those who experience these are more likely to report mental health difficulties [1,2]. Increasingly, attention is being paid to the prevalence of these mental health difficulties in comparison to the general population.

**Conflicts of Interest:** The authors have no conflicts of interest to declare.

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A few studies have documented high rates of depression and anxiety symptoms, self-harm, and suicide among transgender youth [1–3]. An online Australian study of transgender 14- to 25-year olds found that 44% reported they had an anxiety disorder, 40% reported depression, and 38% reported suicidal thoughts [4]. A study of U.S. college students found that transgender students had markedly increased risk of depression, self-harm, suicidal ideation, and suicide attempts compared with cisgender students (those whose gender identity aligned with their gender assigned at birth) [5].

Two population-based adolescent health studies have asked participants if they were transgender. A study conducted with New Zealand high school students found 1.2% identified as transgender and a further 2.5% reported not being sure. Around

41% of transgender students reported significant depressive symptoms, 20% had attempted suicide in the past year, and 46% had self-injured in the past year. These rates were much higher than the cisgender youth in the sample [6]. Studies using nonpopulation-based clinical samples have also reported a high prevalence of mental health difficulties among transgender youth [7,8]. A recent study of 12- to 29-year-old transgender patients at a community health center found that they had more than three times the risk of depression or anxiety diagnosis, suicide ideation, or attempt and more than four times the risk of self-harm than cisgender patients [8].

Only two population-based adolescent health studies have asked youth if they were transgender, and in both, around 1% of their samples report that they were [6,9]. Given this prevalence, population-based studies would require a very large sample for there to be sufficient numbers of participants to make accurate comparisons between transgender and cisgender youth and comparisons across demographic groups within the sample of transgender youth. It is also unclear what the effect of false positive responses to a question about being transgender might have on the data. Only a small proportion of cisgender respondents would need to falsely report that they are transgender (perhaps due to misunderstanding the question or any other reasons) for this to have a marked effect on the findings. For this reason, larger nonprobability samples of transgender youth are useful in providing an accurate picture of the mental health status of transgender youth. The objective of our study was to use a large nonprobability sample of transgender youth to assess the prevalence of mental health concerns among transgender youth in Canada and make comparisons with population-based estimates. We also aimed to explore differences in the prevalence of mental health problems across gender identity subgroups. Consistent with previous studies, we hypothesize that transgender youth in Canada will experience significantly greater mental health problems than cisgender youth.

## Methods

### Sampling

The Canadian Trans Youth Health Survey was available online in English and French, and participants were recruited through transgender and queer community organizations, distributing a call for participants through social media, and the study's research team, and network which included pediatric endocrinology clinics across Canada. Approval for this study was obtained from the University of British Columbia Behavioural Review Ethics Board. A more detailed description of the study methodology is available elsewhere [10].

### Survey and comparisons

There were two versions of the survey, one for 14- to 18-year-old participants which had health questions taken from the British Columbia Adolescent Health Survey (BCAHS) [9]. The 2013 BCAHS cohort was used for population comparisons to youth in grades 7–12 in British Columbia schools (ages 12–18). The 2013 BCAHS surveyed 29,832 youth in randomly selected classrooms across the province and grade range and data were weighted to ensure population estimates were based on a representative sample [11]. Participants who identified as transgender in the BCAHS survey (fewer than 1% of the sample) were excluded from

the present study. The other version of the survey, completed by 19- to 25-year olds, had health questions primarily taken from the Canadian Community Health Survey (CCHS) 2012 Mental Health component [12]. The 2012 survey had a sample of 25,113, with a response rate of 69%. Sample weighting was used for estimates of the general population in Canada and these estimates were used for comparisons in the present study.

### Participants

A nonprobability sample of 923 transgender 14- to 25-year olds living in Canada was recruited for this study. Participants were sampled across the breadth of Canadian province/territories in similar proportions to the general population. Most participants identified their ethnicity as white only (74%), and the most common ethnic minority groups were Indigenous (10%) and Asian (9%). Most participants also reported living in Canada their entire life (87%) and speaking English only at home (76%, with 14% speaking French at home). Our final sample included 839 transgender youth.

*Youth aged 14–18 years (n = 323).* The younger youth sample included 32 youth who identified as transgender girls/women (11%), 140 transgender boys/men (47%), and 128 (42%) nonbinary youth. A total of 23 youth aged 14–18 years did not answer this question and were excluded from our gender identity comparison analyses.

*Youth aged 19–25 years (n = 600).* The older youth sample included 107 youth who identified as transgender girls/women (20%), 216 transgender boys/men (40%), and 216 nonbinary youth (40%). A total of 61 youth who were 19–25 years old did not answer this question and were excluded from our gender identity comparison analyses.

### Measures

*Gender identity.* To categorize participants into gender identity subgroups, we used an item that asked: "When a person's sex and gender do not match, they might think of themselves as transgender. Sex is what a person is born. Gender is how a person feels. Which one response best describes you?" Response options were, "I am not transgender," "I am transgender and identify as a boy or man," "I am transgender and identify as a girl or woman," and "I am transgender and identify in some other way." We categorized participants into three subgroups based on this item: transgender girls/women, transgender boys/men, and nonbinary. We used the term nonbinary, to refer to this broad group of participants who did not identify as either boys/men or girls/women.

*Mental health. Emotional distress.* To measure emotional distress, 14- to 18-year-old participants were asked about levels of stress/strain/pressure and discouragement/hopelessness in the past month using a five-point response scale (see Table 1).

For 19- to 25-year-old youth, emotional distress was measured using several measures. First, the 10-item Kessler Psychological Distress Scale (K10) [13] was used. In addition, depressive symptomatology was measured among 19- to 25-year olds by asking if in the past year they "felt sad, blue, or depressed for 2 weeks or more in a row." Those who answered yes were given additional questions asking whether during those two weeks

**Table 1**

Comparisons of mental health outcomes for younger youth in school (ages 14–18) in the BCAHS and Canadian Trans Youth Health Survey

	BCAHS (2014)		Trans Youth Health Survey				Trans Youth Health Survey			
	In school		In BC schools <sup>a</sup>		Statistical test	Effect size	Entire sample			
	M (SD)/%	n	M (SD)/%	n			M (SD)/%	Statistical test	Effect size	
<b>Emotional Distress</b>										
Felt under stress/strain/pressure (past month)	2.87 (1.21)	51	3.90 (1.10)		$t(50) = 6.68^{**}$	$d = .85$	209	4.04 (1.07)	$t(208) = 15.81^{**}$	$d = .97$
Felt discouraged or hopeless (past month)	2.16 (1.32)	51	3.20 (1.39) <sup>b</sup>		$t(50) = 5.34^{**}$	$d = .79$	208	3.41 (1.32) <sup>b</sup>	$t(207) = 13.68^{**}$	$d = .95$
General mental health	3.15 (.84)	51	2.00 (.85)		$t(50) = 9.66^{**}$	$d = -1.37$	237	1.79 (.79)	$t(236) = 26.50^{**}$	$d = -1.62$
<b>Suicidality</b>										
Considered (past year)	13.0%	51	64.7%		$\chi^2(1) = 120.56^{**}$	RR = 4.98	199	65.2%	$\chi^2(1) = 472.56^{**}$	RR = 5.02
Times attempted (past year)	.11 (.47)	50	.46 (.76)		$t(49) = 3.25^{**}$	$d = .74$	199	.65 (1.00)	$t(198) = 7.62^{**}$	$d = 1.15$
At least one attempt (past year)	6.5%	50	32.0%		$\chi^2(1) = 48.89^{**}$	RR = 4.92	199	36.1%	$\chi^2(1) = 290.64^{**}$	RR = 5.55
<b>Self-harm</b>										
Number of times (past year)	.41 (1.03)	51	1.84 (1.35)		$t(50) = 7.56^{**}$	$d = 1.39$	231	1.87 (1.27)	$t(230) = 17.47^{**}$	$d = 1.42$
At least once in the past year	16.5%	51	71.2%		$\chi^2(1) = 104.41^{**}$	RR = 4.31	231	74.9%	$\chi^2(1) = 540.93^{**}$	RR = 4.54

\*\*  $p < .01$ .

BCAHS = British Columbia Adolescent Health Survey; M = mean; SD = standard deviation; RR = risk ratio.

<sup>a</sup> Participants separated to BC Schools for direct comparison to BCAHS data.<sup>b</sup> This question was slightly differently worded in the BCAHS, with the word “sad” added before the word “discouraged.”

they had experienced the eight further depression symptoms based on criteria in the Diagnostic and Statistical Manual [14] (psychomotor agitation/retardation was not assessed). To meet the criteria for major depressive episode, participants had to have reported at least five of these symptoms, with at least one of these symptoms being a depressed mood or anhedonia.

**Suicidality.** Suicidal ideation and suicide attempts were also asked using different questions for the two age groups (see Tables 1 and 2). For 14- to 18-year olds, youth were asked whether they considered suicidality in the past year, and if so, how many times. Older (19- to 25-year old) youth were asked whether they considered or attempted suicide in their lifetime and in the past year.

**Self-harm.** Self-harm in the past year was assessed among all participants by asking “during the past 12 months, how many times did you hurt or injure yourself on purpose without wanting to die? (for example, by cutting, burning, or bruising yourself on purpose)”

**General mental health.** All participants were also given a question asking, “in general, how would you describe your mental health?” with 1 (poor), 2 (fair), 3 (good), and 4 (excellent) as the response options. This question matched the BCAHS, but it was slightly different from the CCHS which asked “in general, would

you say your mental health is” with an additional “very good” response options. We combined the “very good” and “excellent” response options on the CCHS comparison data to be able to make comparisons between the two surveys.

### Analysis

All statistical tests were conducted using SPSS version 23. Mean scores on scales or items were compared with population mean scores (taken from BCAHS and CCHS) using one-sample  $t$ -tests with Cohen's  $d$  used to approximate effect size using standard deviation units of the general population. Frequencies for dichotomous items were compared with population frequencies as the expected proportion using chi-square goodness of fit tests. Differences for mean scores between gender identity subgroups (i.e., transgender boys/men, transgender girls/women, and gender nonbinary) were assessed using analyses of variance with post hoc Tukey comparisons.

### Results

Overall prevalence of mental health concerns are given for 14- to 18-year olds in Table 1 and for 19- to 25-year olds in Table 2. As hypothesized, mental health disparities are significantly higher for both transgender age groups, compared with

**Table 2**

Comparisons of mental health outcomes for 19- to 25-year olds in Canadian Community Health Survey and Canadian Trans Youth Health Survey

	CCHS (2012)		Canadian Trans Youth Health Survey (2014)			
	M (SD)/%	n	M (SD)/%	Statistical tests	Effect size	
General mental health <sup>a</sup>	3.57 (.68)	432	2.06 (.78)	$t(431) = 40.23^{**}$	$d = -2.22$	
K10 Kessler Psychological Distress	6.43 (5.58)	382	20.64 (9.44)	$t(381) = 29.42^{**}$	$d = 2.55$	
Sad for 2 or more weeks in past year	18.7%	387	70.8%	$\chi^2(1) = 687.56^{**}$	RR = 3.79	
Major depressive episode (past year)	7.8%	356	71.1%	$\chi^2(1) = 1972.67^{**}$	RR = 9.11	
Considered suicide (ever)	15.4%	336	74.4%	$\chi^2(1) = 893.37^{**}$	RR = 4.83	
Considered suicide (past year)	5.1%	340	40.0%	$\chi^2(1) = 848.45^{**}$	RR = 7.84	
Attempted suicide (ever)	3.4%	156	37.8%	$\chi^2(1) = 552.30^{**}$	RR = 11.12	
Attempted suicide (past year)	.7%	160	11.3%	$\chi^2(1) = 241.25^{**}$	RR = 16.14	

\*\*  $p < .01$ .

CCHS = Canadian Community Health Survey; RR = risk ratio; SD = standard deviation.

<sup>a</sup> Slightly different response options between studies for this question—see Methods section for details.

**Table 3**

Prevalence of mental health, disaggregated by gender identity for 14- to 18- year-old and 19- to 25-year-old transgender youth

Mental health variables	Transgender boys/ men (1)		Transgender girls/ women (2)		Nonbinary <sup>a</sup> (3)		Significance tests	Significance at $p < .05$
	n	M (SD)/%	n	M (SD)/%	n	M (SD)/%		
<b>14–18 year olds</b>								
General mental health	110	1.79 (.76)	25	1.92 (.86)	100	1.74 (.80)	$F(2, 234) = .54$	
Felt under stress/strain/pressure (past month)	92	2.97 (1.02)	21	2.57 (1.43)	94	3.24 (.98)	$F(2, 204) = 4.07^*$	3>2
Felt discouraged or hopeless (past month)	91	2.35 (1.29)	21	1.81 (1.47)	94	2.60 (1.28)	$F(2, 203) = 3.26^*$	3>2
Seriously considered suicide (past year)	90	68.9%	20	55.0%	93	64.5%	$\chi^2(2) = 1.47$	
Attempted suicide (past year)	90	44.2%	20	21.1%	94	34.4%	$\chi^2(2) = 4.22$	
Self-harm at least once in the past year	106	79.2%	24	50.0%	100	77.0%	$\chi^2(2) = 9.28^*$	2,3>2
<b>19- to 25-year olds</b>								
General mental health	167	2.16 (.80)	81	2.09 (.78)	162	1.91 (.71)	$F(2, 407) = 4.71^{**}$	1>3
K10 Kessler Psychological Distress	158	20.21 (10.34)	76	19.78 (8.94)	153	21.17 (8.42)	$F(2, 386) = .70$	
Felt sad for 2 or more weeks in past year	155	66.5%	76	71.1%	151	75.5%	$\chi^2(2) = 3.04$	
Major depressive episode (past year)	140	68.6%	70	68.3%	141	75.2%	$\chi^2(2) = 3.04$	
Seriously considered suicide (ever)	138	76.8%	65	66.2%	129	76.7%	$\chi^2(2) = 3.12$	
Seriously considered suicide (past year)	141	36.9%	68	46.2%	97	41.7%	$\chi^2(2) = .93$	
Attempted suicide (ever)	51	43.1%	33	21.2%	69	42.0%	$\chi^2(2) = 5.00$	
Attempted suicide (past year)	53	11.3%	34	8.8%	70	11.4%	$\chi^2(2) = .49$	
Self-harm at least once in the past year	150	48.0%	77	40.3%	150	60.7%	$\chi^2(2) = 9.78^{**}$	3>2

\* $p < .05$ ; \*\* $p < .01$ .

SD = standard deviation.

<sup>a</sup> Participants who responded as “transgender and identify in some other way,” rather than as boys/men or girls/women.

the general population-based estimates found in the BCAHS and CCHS data. In some cases, transgender youth reported positive health experiences; for example, a quarter of our sample reported good or excellent mental health.

For 14- to 18-year olds, these disparities held across transgender participants who were in BC schools (the equivalent sample to participants in the BCAHS) and the sample as a whole. Effect sizes for continuous variables were generally around 1 standard deviation difference between transgender 14- to 18-year olds and British Columbia cisgender high school students the same ages; transgender 14- to 18-year olds had around fivefold increased risk for dichotomous mental health outcomes. Transgender 14- to 18-year olds had five times the risk of suicidal thoughts, with almost two thirds having seriously considered suicide in the past year. Three quarters of 14- to 18-year olds reported self-harming in the past year, compared with fewer than one in five students in the BCAHS.

Transgender 19- to 25-year-old participants scored an average of more than two standard deviations differently from estimates of 19–25 cisgender year olds in the general population from the CCHS on the general mental health item and the K10 Kessler Psychological Distress measure. Risk ratios for dichotomous mental health outcomes varied from less than four times increased risk of feeling sad for two or more weeks in the past year to more than 16 times increased risk of attempting suicide in the past year. Transgender 19- to 25-year olds had almost eight times the risk of serious suicidal thoughts.

Comparisons between transgender boys/men, transgender girls/women, and nonbinary youth are given in Table 3. For most mental health outcomes, there were no significant differences between these three groups except for nonbinary youth tending to report lower levels of overall mental health and higher incidence of self-harm in the past year. Fourteen- to 18-year-old boys/men also reported higher incidence of self-harm than girls/women. Finally, nonbinary 14- to 18-year olds also tended to report higher levels of stress and sadness in the past month than girls/women.

## Discussion

### Population-based comparisons

Our findings reveal substantial mental health disparities for Canadian transgender youth when data are compared with age-equivalent large-scale population surveys of cisgender youth. Compared with the BCAHS, we found same-aged transgender youth faced significant health disparities across all measures, with very large effect sizes.

These results show that the mental health disparities are considerable; more extreme than the disparities faced by lesbian, gay, and bisexual youth in Canada [15]. These disparities were also higher than those reported in recent studies of transgender youth, suggesting that transgender youth captured in community-based samples may be more at risk of mental health problems than those in school-based surveys [6] and recruited from community health centers [8].

These findings extend our knowledge of the extent of mental health disparities faced by transgender youth by using large-scale representative population comparisons, and a large sample allowed comparisons across different gender identities. While most of these findings are concerning and suggest significant risks for mental health problems among transgender youth, it is important to note that not every transgender youth is similarly distressed. Around a quarter of the transgender youth in our study reported that their overall mental health was good or excellent.

### Gender identity comparisons—key differences and similarities

While the overall percentages across all the disaggregated subgroups were generally similar across mental health outcomes and higher than the age-equivalent general Canadian data, we observed some notable patterns and differences between gender identity subgroups.

The mental health outcome variable with the most difference between subgroups was self-harm, with almost three quarters of 14- to 18-year-old transgender boys/men and nonbinary youth reporting that they had self-harmed at least once in the past year, compared with half of the transgender girls/women (see Table 3). Self-harm rates for the 19- to 25-year-old youth were also highest for the nonbinary subgroup compared with transgender boys/men and girls/women. These findings were concordant with a recent studies of transgender youth which found higher rates of self-harm among boys/men than girls/women [8,16,17] and genderqueer and other nonbinary transgender adults having among the highest rates of self-harm [18]. The similar rates of self-harm between the nonbinary group and transgender boys/men may be because most of the nonbinary youth reported they were assigned female at birth. It seems unlikely that these two subgroups reported higher rates of self-harm because they considered chest binding and using needles for hormones as self-harm [18] because the self-harm question in this study gives specific examples of self-harm (cutting, burning, and bruising). The prevalence of self-harm for these groups also drops considerably for the 19–25 age group, despite there being no reason to expect that this group would be less likely to use needles or chest binding. Interestingly, recent research on cisgender 18- to 24-year-old men and women has found that there was a positive correlation between adherence to masculine norms (i.e., dominance, emotional control, and antifemininity) and propensity for self-harm [19]. Future qualitative research could uncover the reasons for the higher rates of self-harming among these subgroups.

The other main difference observed between gender identity subgroups was that nonbinary youth consistently reported worse mental health on average across the mental health outcomes we measured. This could be due to added stigma experienced by this group for not conforming to Canadian society's (or Western society's) binary gender expectations. Put another way, there may added difficulties in having a nonbinary gender identity in a very binary world, which leads to greater psychological distress [20]. This group is likely to be less understood and acknowledged than transgender youth whose gender identity fits into the man/woman binary, and this may mean nonbinary youth are less likely to have social support.

#### *Age comparisons*

Our findings revealed some noteworthy age group differences. First, the prevalence self-harm decreased from the 14–18 to 19–25 age groups; this is consistent with observations among the wider population [21]. Similarly, there was a decreasing trend for suicidal ideation and attempts across the age groups, but this improvement was seen mostly in the transgender boys/men (see Table 3). These results are in contrast to those based on a general population of youth which indicate declining rates of suicidality. For instance, one longitudinal panel study found that past-year suicide ideation peaked at 15 years old before steadily declining for girls but steadily increased for boys before peaking at 19 years of age. However, the same study found that rates of suicide attempt peaked at age 16 before steadily declining into adulthood. To understand these differences in more detail, longitudinal panel data need to be collected on transgender youth into adulthood [22]. On the other mental health outcome

that was measured among both age groups, general mental health, there was little difference between the two age groups. This finding suggests that life does not “get better” after high school for far too many transgender youth—as has been advertised in the international It Gets Better Project for lesbian, gay, bisexual, transgender, and queer youth [23]. Despite being well intentioned, telling young people that life gets better in adulthood may be misguided, especially, as our results show, for mental health problems. Instead, society needs to make things better for transgender youth.

#### *Limitations*

While cross-sectional observational studies like these provide sound evidence for detailing health inequalities, they are inadequate in their explanatory capabilities and cannot explain why such health discrepancies occur [24]. This study also used a nonprobability sample, with comparisons made to population estimates from robust probability sampling methodologies. Nevertheless, because questions about gender identity are yet to become standard on these large-scale surveys, and if the proportion of youth who identify as transgender is around 1%, [6] then these population-based studies would need to be very large or specifically target the transgender population to be able to obtain a sample as large as we were able to achieve in this study to allow comparisons between subgroups. If anything, transgender youth that we were not able to reach in this study—including those who are not employed or in school—are likely to be the groups that are more vulnerable to mental health problems, meaning these results may well be underestimates of the mental health disparities faced by transgender youth. Finally, the disaggregated results concerning 14- to 18-year-old transgender girls/women should be interpreted with caution as there were considerably less respondents in this demographic ( $n = 25$ ), compared with 14- to 18-year-old transgender boys/men ( $n = 110$ ).

#### *Policy implications*

These results point to a clear need to reduce the stigma, prejudice, and discrimination related to being transgender in these youth's environments and to improve the supports for families, community groups who work with transgender youth, schools and universities, and health care providers. Human rights protections based on gender identity could be useful for reducing this discrimination.

The high levels of mental health concerns reported by transgender participants in this study indicate a clear need for appropriate mental health care for this population. To achieve this, we suggest training for mental health care providers to go beyond providing care that is “transgender friendly” to providing care that is “transgender competent” and recognizes the unique issues faced by this group. Providing transgender competent care would include adequate training for mental healthcare providers to reduce biases or prejudices they may have toward transgender youth. This could include appropriate terminology and language to be used among transgender youth as well as the various challenges many transgender youth face. Finally, national mental health policies should include a focus on transgender youth as a population at extreme risk and develop strategies to promote positive mental health and reduce the mental health disparities for transgender youth.



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