

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Supplemental Measures Descriptions

Variable	Measurement	Time Frame	Data Source
Sociodemographics			
Age	Age in years	Current	Youth interview
Ethnoracial category	Coded from youth report of immigration background, Indigenous identity, and ethnoracial background into 3 mutually exclusive categories: Indigenous; non-Indigenous visible minority (based on Statistics Canada definition), non-Indigenous white	Current	Youth interview
Immigration background	Survey items asking if an immigrant to Canada, and if parent(s) are immigrant(s)	Life course	Youth interview
Living environment	Multiple choice question asking if they live in a city, suburb, or rural area	Current	Youth interview
Province or territory	Coded from first letter of youth's postal code	Current	Clinic records
Gender			
Gender identity category	Survey item asking to select one of: "male/primarily a boy," "female/primarily a girl," or "non-binary or something other than male or female"	Current	Youth interview
Gender identity	Self-reported verbatim as text	Current	Youth interview
Age realized gender issues	Self-reported age realized gender was different from what others were calling them	Life course	Youth interview
Time since first aware of gender	Subtracted age realized gender issues from age at enrolment clinic visit	Life course	Youth interview
Youth living in identified gender	Survey item asking if they live in their identified gender "all of the time," "some of the time," or "none of the time"	Current	Youth interview
Age started living in identified gender	Self-reported age started living in their gender either all of the time or some of the time	Life course	Youth interview
Legal changes to name and/or gender marker	Two items asking if legally changed their name and their birth certificate gender marker, with response options of "yes," "no," or "it's in process"	Life course	Youth interview
Discussed gender, prior to clinic	Checklist of types of professional and support persons the youth or family met with to discuss the youth's gender	Life course	Parent survey
Growth Parameters			
Z-scores for weight-, height- and BMI-for-age	Z-scores were calculated from height and weight measures for all participants using both male and female growth curves to reflect assigned and identified gender, using WHO Growth Charts for Canada, 2014 revision; ¹ Z-scores represent number of standard deviations from mean in comparison with youth of a specific age and sex	Current	Clinic records

Variable	Measurement	Time Frame	Data Source
Physical and Mental Health			
Overall physical and mental health	Two items from the Canadian Community Health Survey (CCHS) ² asking youth to rate their general physical health and their general mental health on a 5-point response scale from “poor” to “excellent”	Past 3 months	Youth interview
Depression	5-item Modified Depression Scale, dichotomized to code probable depression for participants reporting a frequency of “often” or “always” to 4 or 5 items ³	Past 30 days	Youth interview
Anxiety	5-item Overall Anxiety Severity and Impairment Score (OASIS), ⁴ with a cut-point of ≥ 8 used for probable anxiety disorder. ⁵	Past week	Youth interview
Self-harm	Five “yes/no” items on intentional harm or injury: 2 items on direct (e.g., cutting, burning) or indirect (e.g. preventing wounds from healing) skin injury, 2 on injury to breasts or genitals, and 1 for other self-injury	Past 12 months	Youth interview
Smoking	Self-reported, sometimes or daily smoking tobacco	Current	Youth interview
Vaping	Self-reported, sometimes or daily vaping	Current	Youth interview
Binge drinking	Self-reported, weekly or more often binge drinking of 5+ alcoholic drinks per occasion	Past 12 months	Youth interview
Marijuana use	Self-reported, any past-year use	Past 12 months	Youth interview
Other drug use	Self-reported, including non-prescribed prescription medications, any past-year use	Past 12 months	Youth interview
Suicidal ideation and attempts	CCHS ² items asking if ever seriously considered and if attempted to commit suicide or take their own life, with follow-up asking if occurred in the last 12 months	Lifetime; past 12 months	Youth interview
Physical and/or mental health diagnoses	Report of any pre-existing or current physical or mental health diagnoses	Current	Clinic records
Social Context			
School situation	Two survey items, one on whether in public school, private school, home-school, or not enrolled in school, and one on whether they are enrolled in a religious school	Current	Youth interview
Living situation	Survey item asking youth to indicate living with one of: birth/adoptive/stepparents, foster family, group home, other relatives, with friends, by themselves	Current	Youth interview
Had to move	“Yes/no” item asking if ever needed to move out of a home because others had issues with their gender	Life course	Youth interview

Variable	Measurement	Time Frame	Data Source
Avoidance of group spaces	Summed from a checklist of types of spaces that youth had avoided for “fear of being harassed, read as trans, or being outed”, e.g. transit or travelling, stores and restaurants, community centers, events, schools, locker rooms, washrooms, outdoor spaces, religious institutions, private homes	Life course	Youth interview
Food insecurity	1 item adapted from the CCHS ² on availability of food eaten in the household: “always enough to eat,” “sometimes not enough to eat,” or “often not enough to eat”	Past 12 months	Youth interview
Low-income measure	Poverty was calculated as above or below the Statistics Canada Low-Income Measure Before Taxes (LIM) ⁶ based on before-tax household income (mid-point of each \$10,000 range) and the number of people supported on that income; missing for youth without a parent participant or not living at least part-time with the parent participant	Past 12 months	Parent survey
Deprivation	5 items capturing frequency of access to 5 essential resources: school supplies; internet (at home or school); season-appropriate clothing; clothing essentials (like socks and underwear); and reliable transportation (either care or transit); coded to indicate number of resources to which the youth always had access	Past 12 months	Youth interview
Parental support for youth’s gender identity/expression	Survey items asked how supportive each of up to 4 separate parent figures (biological, step, foster, other) was of their gender identity/expression, with a 4-point response scale from not at all to very supportive; coded into 3 categories of all parents “very supportive”, mixed/moderate support, and all parents “not at all” or “not very” supportive	Current	Youth interview
External stressors on the family	Summed from the Stressors on Families of Trans Youth Checklist (SFTYC) ⁷ capturing 16 types of trans-specific family stressors, e.g., child welfare investigation, other family not speaking to your family, or having to defend right to participate in activities, because of reactions to the youth’s gender	Life course	Youth interview
Sources of support	Checklist of types of people who provided support (not specific to gender support), e.g. types of parent(s), family members, friends, people from school, health care providers, communities	Current	Youth interview
Clinical Visit Outcome			
Medication prescription	Extracted if a medication was prescribed or not (yes/no), and the medications prescribed	Current	Clinic records
Reason for no prescription	Youth, parent and provider reasons for no prescription were extracted as text	Current	Clinic records

eMethods. Sample Weighting Methods

Trans Youth CAN! Study Survey Weights

Weighting is based on youth participants (n=174) recruited at 10 medical clinics in Canada. Recruitment starts were staggered across clinics but data collection was completed on the same date, creating different lengths of recruitment time for each clinic. To make results more generalizable to the population of youth who are patients at these clinics, we assigned weights to each youth participant (and corresponding parent/caregiver participant) to adjust for differential recruitment periods.

We have participants $i = 1$ to 174 in clinics $j = 1$ to 10

w_{ij} = weight for each participant i in clinic j

N = total number of youth participants

N_j = total number of youth participants in clinic j

m_j = months of data collection for clinic j

$$\text{Eq 1.} \quad w_{ij} = \frac{N}{m_j(\sum_{j=1}^{10} \frac{N_j}{m_j})}$$

Equation 1 is the formula for our sample weights w_{ij} . Weights will be the same for all participants within a clinic, as there is no individual component to this weighting. Weighting is to remove the effect of differential lengths of recruitment. The sum of all weights will equal the sample size (n=174).

Derivation

For each clinic, the weighted proportion of participants needs to equal the mean monthly recruitment for their site divided by the sum of average monthly recruitments for the 10 clinics (for active recruitment months at each clinic only), which is shown in Equation 2. In other words, if a study recruited 30/month with all sites at an average level of active recruitment, and one site averaged 6/month over its own active recruitment period, that site should end up with 20% of the total weighted sample.

$$\text{Eq 2.} \quad \frac{N_j(w_{ij})}{N} = \frac{N_j/m_j}{\sum_{j=1}^{10} \frac{N_j}{m_j}}$$

The denominator (Equation 3) represents the total recruits/month across all 10 sites in a hypothetical average month where all clinics were recruiting.

$$\text{Eq 3.} \quad \sum_{j=1}^{10} \frac{N_j}{m_j}$$

In solving Equation 2 for w_{ij} we get:

$$\text{Eq 4.} \quad w_{ij} = \left(\frac{N}{N_j}\right) \left(\frac{N_j}{m_j}\right) \left(\frac{1}{\sum_{j=1}^{10} \frac{N_j}{m_j}}\right) = \frac{N}{m_j(\sum_{j=1}^{10} \frac{N_j}{m_j})}$$

Confirmation

Weights correctly sum to 174. Total recruits/month across all sites in a hypothetical average month where all clinics are recruiting at average monthly levels = 13.6147. Note that number of youth in the clinic (N_i) is not part of the final weight formula, but is part of the estimation as the weights will be applied to a different number of participants from each clinic. Using the numbers below, we can confirm that Equation 2 holds true.

Clinic	# youth	Month, first recruit	# recruitment months	Recruits per month	Weight
1	67	Sep-17	22	3.04545	0.580923213
2	3	Feb-18	17	0.17647	0.751782982
3	18	Feb-18	17	1.05882	0.751782982
4	12	Mar-18	16	0.75000	0.798769418
5	14	May-18	14	1.00000	0.912879335
6	16	Jun-18	13	1.23077	0.983100822
7	11	Oct-18	9	1.22222	1.420034521
8	6	Nov-18	8	0.75000	1.597538836
9	5	Dec-18	7	0.71429	1.825758669
10	22	Jan-19	6	3.66667	2.130051781
Total	174		129	13.61469	

eReferences

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