Sexual behaviour profile of a diverse group of urban youth: An analysis of the Toronto Teen Survey

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Abstract: The objective of this study was to document the sexual behaviour of an ethno-culturally diverse sample of 1,200 urban youth and to assess the association of their experience of 11 behaviours with such factors as age, gender, immigration, race, religion, location of sexual education and sexual orientation. Grouping of these behaviours into three "risk" categories also permitted a similar assessment based on the "highest" risk category that youth had experienced. The descriptive and statistical findings in relation to race, religion, immigration status, and sexual orientation provide a basis for strengthening sexual health programming for urban youth. They also highlight the need to pay close attention to issues of vulnerability and stereotyping when reflecting on who is and is not engaging in various sexual behaviours.

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Introduction

The sexual behaviour of Canadian youth continues to be a major topic of interest for researchers, public health professionals, and policy-makers (Maticka-Tyndale, 2008; Rotermann, 2008; Saewyc, Taylor, Homma, & Ogilvie, 2008) with particular emphasis on trends associated with changes in risk behaviours related to sexual health. Research on ways to reduce such risks and to thereby avoid unwanted outcomes has focused largely on predictors of safer sex practices, such as the use of contraception and condoms (Doljanac & Zimmerman, 1998; Harvey, Henderson, & Branch, 2004; Kotchick, Shaffer, Forehand, & Miller, 2001; Santelli et al., 1997; Sieving, Bearinger, Resnick, Pettingell, & Skay, 2007). To the extent that such studies on trends and predictors have drawn on demographically representative samples, the numbers of ethno-cultural minority youth and sexual minority youth have often been too small for analysis. As urban centres have become increasingly diverse and multi-cultural, public health professionals have recognized the need for sexual health promotion interventions that are effective and sensitive to the varied needs of these populations of youth (de Visser, 2005). Research on social and cultural predictors of sexual risk behaviour of youth is limited (Kotchick et al., 2001), but the available evidence has shown a relationship between an urban youth's environment and ethnic background and his/her sexual risk behaviour (Brewster, 1994; Everett et al., 2000). The present study sought to explore the associations between socio-demographic factors and sexual behaviour among a diverse sample of urban youth.

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The present study

The Toronto Teen Survey was designed to engage and sample a large population of urban teens with the express intent of ensuring a sizeable representation of ethno-culturally and sexually diverse youth (Flicker et al., 2010). Our purpose in the present study was to document the sexual behaviour of these youth and to provide quantitative estimates of the relationship between socio-cultural factors (for example: age, gender, immigration status, race, religion, location of sexual education and sexual orientation) and other possible aspects of their behaviour. Although it is impossible to modify many socio-demographic predictors, it is hoped that identification of such associations will lead to targeted prevention efforts better attuned to the varied needs of this diverse population.

Methods

This report is based on data from the Toronto Teen Survey (TTS). Methodological details are provided elsewhere (Flicker et al., 2010; Flicker & Guta, 2008), but briefly, the TTS is a community-based research project that surveyed 1,216 youth living in Toronto, Ontario Canada between December 2006 and August 2007. A Youth Advisory Committee (YAC) was established early in the project and worked closely with the project team to develop the survey and administration protocol.

Respondents were sampled via pre-existing youth groups hosted by community health, recreation and social service agencies (for example, drop-in centers, summer camps, group homes, support groups) where Planned Parenthood Toronto had a pre-existing relationship providing sexual health promotion activities. The sampling strategy ensured that the respondents were from diverse cultural backgrounds reflecting the population of Toronto. A special effort was made to reach out to specialized youth services that targeted populations who experienced heightened vulnerability to poor sexual health outcomes (e.g., queer youth groups, a support program for young parents, a newcomer health club).

Members of the YAC led survey administration sessions; they introduced the survey, fielded questions with regard to the survey and facilitated a sexual health question and answer session at the conclusion of each survey administration session. All surveys were completed anonymously. Due to the fact that youth were sampled from spaces that were already offering sexual health workshops and that parental consent was not mandatory for involvement in these activities, parental consent was not required for participation in this minimal risk study. Nevertheless, careful assent procedures were followed and host agencies took on the "duty to report" abuse and/or suicidal ideation in the event that a young person disclosed. The TTS project underwent ethical review from both the University of Toronto and York University.

Participant characteristics

There were 31 respondents that did not complete the sexual experience question and hence the population available for analysis was 1,185 (labeled as Total Sample). Table 1 provides overall characteristics of all respondents (including those 31 respondents not included in subsequent analyses). Overall, the age of respondents is well distributed with slightly more female than male respondents (53.6% versus 44.7%). Eighty-seven percent of the respondents were either born in Canada (65.3%) or had lived in Canada for four or more years. The sample was racially diverse with only 14.4% identifying as White, 14.5% as East/Southeast Asian, 38.1% as Black and 12.9% identifying as multi-racial. With regard to religion, the sample has approximately equal proportions of catholic and protestant respondents at 27% each. Approximately 18% identified as having no religion. Ninety percent of the respondents indicated their sexual orientation as heterosexual.

Questionnaire

The survey had questions in several broad domains including demographics, sexual experience, use and barriers to use of sexual health clinics and sexual education. The target age group of the survey was 13- to 17-year-olds, although if members of the youth group were outside this age range, they were not precluded from completing the survey.

Sexual behaviour experience

Experience with different sexual behaviours was developed from a checklist based on the following stem question: "Have you had any of these sexual

Table 1 Participant characteristics

	N	%		N	%
Total	1,216	100.0			
Age			**Immigration**		
13	218	17.9	Born in Canada	794	65.3
14	185	15.2	Born Elsewhere/In Can 4+yrs	267	22.0
15	241	19.8	Born Elsewhere/In Can 0-3 yrs	138	11.3
16	185	15.2	Missing	17	1.4
17	169	13.9	**Disability**		
18+	207	17.0	None	978	80.4
Missing	11	0.9	Drugs / Alcohol	55	4.5
Gender			Mobility/Hearing/Speech or Visual	53	4.4
Female	652	53.6	Other	89	7.3
Male	543	44.7	Missing	41	3.4
Other	10	0.8	**Sexual Orientation**		
Missing	11	0.9	Straight	1,094	90.0
Parent/Caregiver Education			LBG2PQ	47	3.9
Less than high school	60	4.9	Questioning	39	3.2
High school	253	20.8	Missing	36	3.0
College	271	22.3	**Living Situation**		
University	444	36.5	Parent / Relatives	999	82.2
Don't know	182	15.0	Foster / Group Home	72	5.9
Missing	6	0.5	Independent Living	94	7.7
Race			Shelter / Hostel	8	0.7
Aboriginal	20	1.6	Missing	43	3.5
South Asian	116	9.5	**Pregnancy (been or gotten)**		
East / South East Asian	176	14.5	Yes	86	7.1
Black	463	38.1	No	1,048	86.2
White	175	14.4	Not Sure	54	4.4
Other	71	5.8	Missing	28	2.3
Multi-Racial	157	12.9			
Missing	38	3.1			
Religion					
No religion	218	17.9			
Catholic	333	27.4			
Muslim	114	9.4			
Protestant	328	27.0			
Other	158	13.0			
Missing	65	5.3			

experiences?" Respondents were allowed to select all options that applied to them from a list of 11 behaviours (the 12th option was to check "I have not had any of these experiences"). Descriptive statistics are presented for youth who had engaged in each of the 11 behaviours, or none of them, in relation to the following covariates: age, gender, immigration, race, religion, location of sexual education and sexual orientation.

The descriptive findings are presented under three categorical groupings: no experience and masturbation (representing one of the 11 sexual behaviours); non-intercourse sexual behaviours (including eight behaviours: kissing, dry humping, fingering, oral sex, hand job, shared sex toys, rimming, and fisting); and intercourse sexual behaviours (including two behaviours: vaginal intercourse and anal intercourse). These three groupings made it possible to show descriptive data for respondents' experience with each of the 11 behaviours, or none, in relation to the various covariates.

Three-level categorization of youths' sexual behaviour according to risk

The three groupings described above also reflect behaviours that could be considered in relation to the hypothetical risk they carried in relation to STI and other sexual health issues. To that end, low-,

medium- and high-level categorizations were done to place youth in the "highest" category possible based on their having ever experienced a behaviour in that category. These categories were: none/solo; non-intercourse; intercourse. None/solo included youth who had never experienced any of the 11 behaviours plus the few who had experienced only solo masturbation but none of the other 10 behaviours; Non-intercourse included the eight behaviours listed above. Intercourse included two behaviours, vaginal intercourse and anal intercourse.

Examples of the categorization by risk "level" are as follows: youth who indicated no experience with any of the 11 behaviours would go in the none/solo category as would a youth who checked only masturbation and none of the other behaviours; a youth whose experience included masturbation, kissing, and hand-jobs but not intercourse would go into the non-intercourse category; a youth who had experienced masturbation, oral sex, and vaginal intercourse would be assigned to the intercourse category. These groupings served as three-level categorical variables for statistical analyses and are presented in columns separate from the descriptive findings for each of the 11 behaviours.

Other covariates

Gender: Respondents were given four categories of gender to select from, female, male, transgender and two-spirited. For this analysis, the transgender and two-spirited group were classified as other.

Location of sexual education: This three-level categorical variable (school/group, multiple locations and never received any) developed from the following stem question, "Please check all of the places you have had sexual health classes or workshops" where respondents were allowed to select multiple responses from a list of six options. If a respondent selected any one of elementary school, high school, youth group, religious group or other group then were classified as school/group. If a respondent indicated two or more of the options, they were classified as multiple. If the respondent indicated having never received sexual health classes they were classified as never received any.

Sexual orientation: This was a three-level categorical variable (straight, Lesbian/Bisexual/Gay/Two Spirited/Pansexual/Queer (LBG2PQ) and questioning) developed from the following stem question, "What is your sexual orientation?" where respondents were allowed to select multiple responses from a list of eight options. If a respondent selected not sure or questioning, regardless of other responses, the respondent was classified as questioning. If a respondent selected any of lesbian, two-spirit, pansexual, gay, bisexual or queer the respondent was classified as LBG2PQ. If a respondent only indicated straight or heterosexual, the respondent was classified as straight.

Analyses

Descriptive statistics were calculated for the covariates stratified by the outcome variable. Given the categorical nature of the outcome variable, a cumulative logit model was performed that estimated the odds of being in a higher sexual behaviour category compared to being a lower category for each of the covariates of interest.

Given the age of the respondents and the sensitive nature of survey content, missing responses were considered informative, in that missing values for covariates were left in the models as separate missing values. To examine the impact this might have on the other parameter's estimates, a sensitivity analysis was undertaken that re-estimated the model with list-wise deletion of the missing values. All analysis was performed using the Statistical Analysis System, version 9.1.

Results

No sexual experiences; non-partnered masturbation experience (none/solo)

Based on a total sample of 1,185 youth, 284 (24%) had not engaged in any of the 11 sexual behaviours (no experience) and 263 (22.2%) had engaged in masturbation (Table 2). Since the none/solo column has 298 youth (25.1% of the total sample), it is clear that almost all of the youth who had engaged in masturbation had also engaged in other behaviours and thus had to be excluded from the none/solo lowest "risk" category which was reserved for those who had no experience or had only engaged in masturbation and no other behaviours. Based on the descriptive

Table 2 Descriptive statistics for youth who reported no experience or masturbation

	Total Sample N (%)		None / Solo N (%)		No Experience N (%)		Masturbation N (%)	
Total	1,185	(100.0)	298	(25.1)	284	(24.0)	263	(22.2)
Age								
13	214	(18.1)	92	(43.0)	94	(43.9)	22	(10.3)
14	179	(15.1)	63	(35.2)	57	(31.8)	26	(14.5)
15	234	(19.7)	60	(25.6)	55	(23.5)	43	(18.4)
16	181	(15.3)	39	(21.5)	38	(21.0)	37	(20.4)
17	165	(13.9)	21	(12.7)	20	(12.1)	52	(31.5)
18 or older	203	(17.1)	17	(8.4)	14	(6.9)	83	(40.9)
Missing	9	(0.8)	6	(66.7)	6	(66.7)	0	(0.0)
Gender								
Female	650	(54.9)	166	(25.5)	167	(25.7)	106	(16.3)
Male	518	(43.7)	130	(25.1)	116	(22.4)	150	(29.0)
Other	10	(0.8)	2	(20.0)	1	(10.0)	7	(70.0)
Missing	7	(0.6)	0	(0.0)	0	(0.0)	0	(0.0)
Sexual Orientation								
Straight	1,071	(90.4)	256	(23.9)	246	(23.0)	216	(20.2)
LGB2PQ	47	(4.0)	5	(10.6)	4	(8.5)	33	(70.2)
Questioning	39	(3.3)	25	(64.1)	22	(56.4)	10	(25.6)
Missing	28	(2.4)	12	(42.9)	12	(42.9)	4	(14.3)
Immigration								
Born Can.; here 10+ years	772	(65.1)	152	(19.7)	151	(19.6)	174	(22.5)
Not Born Can.; here 4+ years	265	(22.4)	86	(32.5)	80	(30.2)	59	(22.3)
Not born Can.; here 3 yr or less	134	(11.3)	54	(40.3)	47	(35.1)	29	(21.6)
Missing	14	(1.2)	6	(42.9)	6	(42.9)	1	(7.1)
Race								
Aboriginal	20	(1.7)	1	(5.0)	2	(10.0)	7	(35.0)
South Asian	116	(9.8)	74	(63.8)	68	(58.6)	16	(13.8)
East/South East Asian	174	(14.7)	86	(49.4)	75	(43.1)	41	(23.6)
Black	443	(37.4)	62	(14.0)	63	(14.2)	61	(13.8)
White	175	(14.8)	26	(14.9)	27	(15.4)	75	(42.9)
Other	71	(6.0)	13	(18.3)	14	(19.7)	17	(23.9)
Other Multi Racial	156	(13.2)	28	(17.9)	27	(17.3)	41	(26.3)
Missing	30	(2.5)	8	(26.7)	8	(26.7)	5	(16.7)
Religion								
No Religion	215	(18.1)	44	(20.5)	41	(19.1)	68	(31.6)
Catholic	325	(27.4)	84	(25.8)	78	(24.0)	80	(24.6)
Muslim	110	(9.3)	52	(47.3)	49	(44.5)	7	(6.4)
Protestant	322	(27.2)	54	(16.8)	56	(17.4)	61	(18.9)
Other	156	(13.2)	54	(34.6)	50	(32.1)	39	(25.0)
Missing	57	(4.8)	10	(17.5)	10	(17.5)	8	(14.0)
Location of Sexual Education								
School / Group	359	(30.3)	134	(37.3)	132	(36.8)	58	(16.2)
Multiple Locations	670	(56.5)	114	(17.0)	105	(15.7)	179	(26.7)
Never Received Any	79	(6.7)	35	(44.3)	35	(44.3)	7	(8.9)
Missing	77	(6.5)	15	(19.5)	12	(15.6)	19	(24.7)

findings, youth who reported no experience of any of the 11 behaviours were likely to be younger, South Asian or East/South East Asian, and Muslim. Less than a quarter of all respondents (22.2%) reported masturbation with percentages increasing by age.

Youth in the none/solo sample (n = 298) were younger (43% at age 13 and 12.7% at age 17), more likely to have been born outside Canada and more recently arrived compared to those born in Canada (40.3% versus 19.7%), and more likely to be South Asian (63.8%) or East/South East Asian (49.4%). There

Table 3 **Demographic statistics for youth who reported non-intercourse sexual behaviours (calculations include "missing"; data not shown)**

	Total Sample	Non-Intercourse	Kissing	Dry Humping	Fingered	Oral Sex	Hand Job	Sex Toys Together	Rimming	Fisting
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Total	1,185 (100.0)	533 (45.0)	855 (72.2)	460 (38.8)	325 (27.4)	310 (26.2)	308 (26.0)	67 (5.7)	42 (3.5)	27 (2.3)
Age										
13	214 (18.1)	112 (52.3)	117 (54.7)	45 (21.0)	11 (5.1)	16 (7.5)	13 (6.1)	0 (0.0)	0 (0.0)	2 (0.9)
14	179 (15.1)	98 (54.7)	114 (63.7)	42 (23.5)	15 (8.4)	20 (11.2)	20 (11.2)	4 (2.2)	0 (0.0)	1 (0.6)
15	234 (19.7)	121 (51.7)	169 (72.2)	86 (36.8)	49 (20.9)	51 (21.8)	58 (24.8)	4 (1.7)	2 (0.9)	7 (3.0)
16	181 (15.3)	80 (44.2)	138 (76.2)	72 (39.8)	54 (29.8)	45 (24.9)	49 (27.1)	10 (5.5)	6 (3.3)	4 (2.2)
17	165 (13.9)	65 (39.4)	136 (82.4)	97 (58.8)	86 (52.1)	65 (39.4)	67 (40.6)	15 (9.1)	11 (6.7)	5 (3.0)
18 or older	203 (17.1)	55 (27.1)	178 (87.7)	117 (57.6)	110 (54.2)	113 (55.7)	101 (49.8)	34 (16.7)	23 (11.3)	8 (3.9)
Gender										
Female	650 (54.9)	311 (47.8)	474 (72.9)	241 (37.1)	195 (30.0)	134 (20.6)	141 (21.7)	42 (6.5)	20 (3.1)	11 (1.7)
Male	518 (43.7)	216 (41.7)	366 (70.7)	208 (40.2)	124 (23.9)	168 (32.4)	160 (30.9)	21 (4.1)	18 (3.5)	14 (2.7)
other	10 (0.8)	1 (10.0)	8 (80.0)	7 (70.0)	6 (60.0)	7 (70.0)	6 (60.0)	4 (40.0)	4 (40.0)	2 (20.0)
Sexual Orientation										
Straight	1,071 (90.4)	505 (47.2)	787 (73.5)	412 (38.5)	288 (26.9)	268 (25.0)	268 (25.0)	43 (4.0)	23 (2.1)	22 (2.1)
LGB2PQ	47 (4.0)	8 (17.0)	41 (87.2)	32 (68.1)	29 (61.7)	34 (72.3)	28 (59.6)	19 (40.4)	16 (34.0)	4 (8.5)
Questioning	39 (3.3)	9 (23.1)	12 (30.8)	8 (20.5)	5 (12.8)	5 (12.8)	5 (12.8)	4 (10.3)	1 (2.6)	1 (2.6)
Immigration										
Born in Canada	772 (65.1)	365 (47.3)	602 (78.0)	343 (44.4)	238 (30.8)	231 (29.9)	229 (29.7)	54 (7.0)	34 (4.4)	20 (2.6)
Immig: 4+ years	265 (22.4)	102 (38.5)	170 (64.2)	93 (35.1)	73 (27.5)	61 (23.0)	62 (23.4)	11 (4.2)	7 (2.6)	5 (1.9)
Immig: 3 yr/ less	134 (11.3)	60 (44.8)	75 (56.0)	22 (16.4)	13 (9.7)	16 (11.9)	16 (11.9)	1 (0.7)	1 (0.7)	2 (1.5)
Race										
Aboriginal	20 (1.7)	11 (55.0)	19 (95.0)	8 (40.0)	9 (45.0)	9 (45.0)	8 (40.0)	2 (10.0)	2 (10.0)	1 (5.0)
South Asian	116 (9.8)	32 (27.6)	42 (36.2)	16 (13.8)	12 (10.3)	10 (8.6)	10 (8.6)	2 (1.7)	4 (3.4)	2 (1.7)
East/S.E. Asian	174 (14.7)	66 (37.9)	87 (50.0)	33 (19.0)	20 (11.5)	22 (12.6)	19 (10.9)	3 (1.7)	2 (1.1)	2 (1.1)
Black	443 (37.4)	238 (53.7)	357 (80.6)	199 (44.9)	116 (26.2)	113 (25.5)	114 (25.7)	10 (2.3)	7 (1.6)	8 (1.8)
White	175 (14.8)	64 (36.6)	148 (84.6)	95 (54.3)	84 (48.0)	79 (45.1)	80 (45.7)	32 (18.3)	16 (9.1)	7 (4.0)
Other	71 (6.0)	36 (50.7)	58 (81.7)	28 (39.4)	23 (32.4)	19 (26.8)	17 (23.9)	5 (7.0)	3 (4.2)	2 (2.8)
Other Multi Racial	156 (13.2)	73 (46.8)	123 (78.8)	65 (41.7)	55 (35.3)	51 (32.7)	52 (33.3)	13 (8.3)	8 (5.1)	5 (3.2)
Religion										
No Religion	215 (18.1)	92 (42.8)	167 (77.7)	97 (45.1)	69 (32.1)	74 (34.4)	76 (35.3)	21 (9.8)	10 (4.7)	7 (3.3)
Catholic	325 (27.4)	147 (45.2)	234 (72.0)	131 (40.3)	95 (29.2)	86 (26.5)	88 (27.1)	18 (5.5)	7 (2.2)	5 (1.5)
Muslim	110 (9.3)	39 (35.5)	51 (46.4)	18 (16.4)	12 (10.9)	21 (19.1)	15 (13.6)	1 (0.9)	1 (0.9)	0 (0.0)
Protestant	322 (27.2)	167 (51.9)	258 (80.1)	139 (43.2)	93 (28.9)	78 (24.2)	81 (25.2)	8 (2.5)	9 (2.8)	7 (2.2)
Other	156 (13.2)	63 (40.4)	101 (64.7)	52 (33.3)	44 (28.2)	38 (24.4)	37 (23.7)	17 (10.9)	13 (8.3)	8 (5.1)
Location of Sex Ed										
School / Group	359 (30.3)	153 (42.6)	215 (59.9)	75 (20.9)	62 (17.3)	65 (18.1)	64 (17.8)	10 (2.8)	9 (2.5)	5 (1.4)
Multiple	670 (56.6)	313 (46.7)	540 (80.6)	337 (50.3)	237 (35.4)	216 (32.2)	215 (32.1)	53 (7.9)	31 (4.6)	20 (3.0)
None Received	70 (6.7)	31 (39.2)	43 (54.4)	14 (17.7)	9 (11.4)	8 (10.1)	10 (12.7)	1 (1.3)	1 (1.3)	2 (2.5)

was no male/ female difference in terms of inclusion in this category.

Experience of one or more of eight partnered non-intercourse behaviours (non- intercourse)

The descriptive findings in Table 3 show the percentage of youth in the total sample (n = 1,185) who reported having engaged in each of eight non-intercourse partnered sexual behaviours. The most common of these ever experienced behaviours ranged from kissing (72.2%), dry humping (38.8%), fingering (27.4%), oral sex (26.2%) and hand job (26%) to the much less common fisting, rimming, and shared use of sex toys (2.3% to 5.7% respectively). Among the five most common behaviours, younger age and being South Asian or East/South East Asian were the factors most clearly associated with lower likelihood of having had the experience.

As was the case with the none/solo group, those in the non-intercourse column (n = 533) represent youth who had only engaged in one or more of these behaviours but had not engaged in either vaginal or anal intercourse. The non-intercourse group thus represents a hypothetically higher level of risk than being in the none/solo group and a lower level of risk than being in the intercourse group. Factors associated with greater likelihood of being in the non-intercourse group were younger age (54.7% for age 14 versus 27.1% for 18+), being Black (53.7%) versus South Asian (27.6%), and being straight (47.2%) versus LGB2PG (17%) or questioning (23.1%) (Table 3).Overall, however, the percentages for this category were generally quite similar across the covariates.

Experience of vaginal and/or anal intercourse (intercourse)

The descriptive findings in Table 4 indicate that 336 youth (28.4% of the total sample) reported ever having had vaginal intercourse and 86 (7.3%) had ever had anal intercourse. The pattern of increasing likelihood of having vaginal intercourse by age was striking with a range from 2.8% for 13-year-olds to 61.6% for those 18+. Males and females were similar in terms of vaginal intercourse experience in relation to the total sample for each (30.3% and 26.2%) whereas 28% of the 1,071 straight youth had vaginal intercourse compared to 57.4% of LGB2PQ youth. The 190 South Asian and East/South East Asian were most notably unlikely to have had vaginal intercourse (6.9% and 10.3% respectively). Similar patterns prevailed for anal intercourse, although with few numbers reporting the experience; 5.6% of straight youth versus 46.8% of LGB2PQ youth had ever had anal intercourse.

Among the 354 youth who were in the intercourse group, i.e., those who had ever had vaginal intercourse, anal intercourse, or both, reflected similar patterns to those reported above for age, sex, sexual orientation and race albeit with large numbers in some cases reflecting the fact of some having engaged in both behaviours. For example, 72.3% of all LGB2PQ youth were in this category compared to 28.9% of all straight youth.

Gender, sexual orientation, and sexual experience

Table 5 provides a further stratification of sexual orientation and sexual behaviour by gender. Since straight youth represent 90.4% of the total sample and LGB2PQ and questioning youth represent 4% and 3.3% respectively, this stratification by gender appreciably reduces the absolute numbers in some of the cells for the latter groups. This means that comparisons of percentages by sex and sexual orientation between the three categories should be done cautiously. Straight males and females appear to be relatively similar in the percentages in each of the three behaviour categories. For example, 25.5% of straight females and 33.3% of straight males fall in the intercourse category. Comparable figures for LGB2PQ youth are 65.4% for females and 80% for males. These observations suggest notable differences between both sexes across sexual orientation and less difference between sexes within orientation. However, there are fewer questioning than LGB2PQ female youth in this category (20% versus 65.4% respectively) and the same applies for males (5% versus 80% respectively). The other two behaviour categories offer similar opportunities for comparison and speculation.

Table 4 Descriptive statistics for youth who reported intercourse sexual behaviours

	Total sample N (%)		Intercourse sample N (%)		Vaginal intercourse N (%)		Anal intercourse N (%)	
Total	1,185	(100.0)	354	(29.9)	336	(28.4)	86	(7.3)
Age								
13	214	(18.1)	10	(4.7)	6	(2.8)	7	(3.3)
14	179	(15.1)	18	(10.1)	17	(9.5)	4	(2.2)
15	234	(19.7)	53	(22.6)	51	(21.8)	12	(5.1)
16	181	(15.3)	62	(34.3)	59	(32.6)	12	(6.6)
17	165	(13.9)	79	(47.9)	77	(46.7)	18	(10.9)
18 or older	203	(17.1)	131	(64.5)	125	(61.6)	33	(16.3)
Missing	9	(0.8)	1	(11.1)	1	(11.1)	0	(0.0)
Gender								
Female	650	(54.9)	173	(26.6)	170	(26.2)	37	(5.7)
Male	518	(43.7)	172	(33.2)	157	(30.3)	45	(8.7)
Other	10	(0.8)	7	(70.0)	7	(70.0)	4	(40.0)
Missing	7	(0.6)	2	(28.6)	2	(28.6)	0	(0.0)
Sexual Orientation								
Straight	1,071	(90.4)	310	(28.9)	300	(28.0)	60	(5.6)
LGB2PQ	47	(4.0)	34	(72.3)	27	(57.4)	22	(46.8)
Questioning	39	(3.3)	5	(12.8)	5	(12.8)	1	(2.6)
Missing	28	(2.4)	5	(17.9)	4	(14.3)	3	(10.7)
Immigration								
Born Can.; here 10+ years	772	(65.1)	255	(33.0)	243	(31.5)	68	(8.8)
Not Born Can.; here 4+ years	265	(22.4)	77	(29.1)	73	(27.5)	15	(5.7)
Not born Can.; here 3 yr or less	134	(11.3)	20	(14.9)	18	(13.4)	3	(2.2)
Missing	14	(1.2)	2	(14.3)	2	(14.3)	0	(0.0)
Race								
Aboriginal	20	(1.7)	8	(40.0)	8	(40.0)	3	(15.0)
South Asian	116	(9.8)	10	(8.6)	8	(6.9)	4	(3.4)
East/South East Asian	174	(14.7)	22	(12.6)	18	(10.3)	7	(4.0)
Black	443	(37.4)	143	(32.3)	137	(30.9)	20	(4.5)
White	175	(14.8)	85	(48.6)	82	(46.9)	29	(16.6)
Other	71	(6.0)	22	(31.0)	22	(31.0)	8	(11.3)
Other Multi Racial	156	(13.2)	55	(35.3)	52	(33.3)	14	(9.0)
Missing	30	(2.5)	9	(30.0)	9	(30.0)	1	(3.3)
Religion								
No Religion	215	(18.1)	79	(36.7)	76	(35.3)	21	(9.8)
Catholic	325	(27.4)	94	(28.9)	88	(27.1)	27	(8.3)
Muslim	110	(9.3)	19	(17.3)	18	(16.4)	2	(1.8)
Protestant	322	(27.2)	101	(31.4)	97	(30.1)	18	(5.6)
Other	156	(13.2)	39	(25.0)	36	(23.1)	15	(9.6)
Missing	57	(4.8)	22	(38.6)	21	(36.8)	3	(5.3)
Location of Sexual Education								
School / Group	359	(30.3)	72	(20.1)	68	(18.9)	19	(5.3)
Multiple Locations	670	(56.5)	243	(36.3)	232	(34.6)	58	(8.7)
Never Received Any	79	(6.7)	13	(16.5)	12	(15.2)	4	(5.1)
Missing	77	(6.5)	26	(33.8)	24	(31.2)	5	(6.5)

Table 5 Gender, sexual orientation and sexual experience

Gender	Sexual Orientation	Total N (%)		None / Solo N (%)		Non-Intercourse N (%)		Intercourse N (%)	
Total									
	Straight	1,071	(90.4)	256	(23.9)	505	(47.2)	310	(28.9)
	LGB2PQ	47	(4.0)	5	(10.6)	8	(17.0)	34	(72.3)
	Questioning	39	(3.3)	25	(64.1)	9	(23.1)	5	(12.8)
	Missing	28	(2.4)	12	(42.9)	11	(39.3)	5	(17.9)
Female									
	Straight	593	(91.2)	149	(25.1)	293	(49.4)	151	(25.5)
	LGB2PQ	26	(4.0)	2	(7.7)	7	(26.9)	17	(65.4)
	Questioning	20	(3.1)	12	(60.0)	4	(20.0)	4	(20.0)
	Missing	11	(1.7)	3	(27.3)	7	(63.6)	1	(9.1)
Male									
	Straight	469	(90.5)	106	(22.6)	207	(44.1)	156	(33.3)
	LGB2PQ	15	(2.9)	2	(13.3)	1	(6.7)	12	(80.0)
	Questioning	18	(3.5)	13	(72.2)	4	(22.2)	1	(5.6)
	Missing	16	(3.1)	9	(56.3)	4	(25.0)	3	(18.8)
Other									
	Straight	3	(30.0)	1	(33.3)	1	(33.3)	1	(33.3)
	LGB2PQ	6	(60.0)	1	(16.7)	0	(0.0)	5	(83.3)
	Questioning	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
	Missing	1	(10.0)	0	(0.0)	0	(0.0)	1	(100.0)
Missing									
	Straight	6	(85.7)	0	(0.0)	4	(66.7)	2	(33.3)
	LGB2PQ	1	(14.3)	0	(0.0)	1	(100.0)	0	(0.0)
	Questioning	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
	Missing	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

Estimations of youth being in a higher (intercourse) or lower (none/solo) "risk" category

Table 6 provides the odds ratios and corresponding 95% confidence intervals from the cumulative logit model. The relationship between increasing age and increasing sexual behaviour is evident across all age categories, independent of the other covariates. Compared to 13-year-olds, 17-year-olds and those 18+ have an 8.9 and 20.5 times greater likelihood of being in a higher category; and the difference between them represents a doubling. Respondents not born in Canada are less likely to be in a higher behavioural category compared to a Canada-born youth whether they have lived in Canada 3 years or less (OR = 0.60 95% CI: 0.39-0.93) or 4 years of more (OR = 0.71 95% CI: 0.52-0.98). Respondents that identified as Muslim were less likely to be in a higher sexual behaviour category compared to those respondents that reported no religion, independent of all other covariates in the model (OR = 0.35 95% CI: 0.21-0.60). Respondents that experienced sexual education at multiple locations were 2 times more likely to be in a higher sexual behaviour category compared to those that never received sexual education, independent of all other covariates in the model (OR = 2.01 95% CI: 1.21-3.32). Respondents that identified as LGB2PQ were 2.3 times more likely to be in a higher sexual behaviour category compared to those respondents that identified as heterosexual, independent of all other covariates in the model (OR = 2.34 95% CI: 1.14-4.18).

Discussion

Our estimates of youth sexual behaviour are in line with other Canadian findings that have shown that 3% of Torontonians experienced their first sexual intercourse by age 13 years (McKeown, 2007), and 28% of Canadian teens aged 15-17 report having had sexual intercourse at least once (Rotermann, 2008). It is also no surprise that as youth age they are more likely to become sexually active. What is unique about our dataset is the social and cultural diversity of our respondents. Also unique to our sample is the careful querying around a variety of sexual behaviours.

Table 6 Culmulative logit model estimating sexual behaviours

	OR	95% CI		
Age				
13	1.00			
14	1.49	0.98	-	2.29
15	2.58	1.72	-	3.86
16	6.37	4.08	-	9.94
17	8.92	5.66	-	14.06
18 or older	20.54	12.84	-	32.85
Missing	0.37	0.08	-	1.74
Gender				
Female	1.00			
Male	1.56	1.22	-	2.00
Other	2.30	0.48	-	11.17
Missing	5.40	1.18	-	24.62
Immigration				
Born Can.; here 10+ years	1.00			
Not Born Can.; here 4+ years	0.71	0.52	-	0.98
Not born Can.; here 3 yr or less	0.60	0.39	-	0.93
Missing	0.35	0.11	-	1.06
Race				
Aboriginal	0.79	0.28	-	2.23
South Asian	0.12	0.06	-	0.22
East/South East Asian	0.16	0.10	-	0.26
Black	1.10	0.75	-	1.62
White	1.32	0.84	-	2.09
Other	1.09	0.60	-	1.96
Other Multi Racial	1.00			
Missing	0.66	0.30	-	1.49
Religion				
No Religion	1.00			
Catholic	0.78	0.54	-	1.13
Muslim	0.35	0.21	-	0.60
Protestant	0.86	0.59	-	1.26
Other	1.12	0.68	-	1.85
Missing	1.25	0.66	-	2.37
Location of Sexual Education				
School / Group	1.12	0.67	-	1.88
Multiple Locations	2.01	1.21	-	3.32
Never Recevied Any	1.00			
Missing	1.87	0.97	-	3.60
Sexual Orientation				
Straight	1.00			
LGB2PQ	2.34	1.14	-	4.18
Questioning	0.21	0.10	-	0.44
Missing	0.36	0.16	-	0.84

Our data show that youth who were Asian or East Asian were slightly less likely to have engaged in higher levels of sexual behaviour. Those who were Muslim and those not born in Canada were also less likely to report these behaviours. Others have also found similar findings related to newcomers (Blake, Ledsky, Goodenow, & O'Donnell, 2001). Nevertheless, many Asian, newcomer and Muslim youth did report engaging in non-intercourse and intercourse behaviours. Programs targeting these youth need to be culturally sensitive, and pay particular attention to issues of acculturation and potential conflicts around intergenerational ideas about sex and sexual behaviours. One such program operating in Toronto is SHARP (Planned Parenthood Toronto, 2007). Our data also challenge stereotypes that exist around black youth being more likely to engage in higher levels of potentially risky sexual behaviours compared to white youth.

Our data showed that there was more than a doubling of risk for intercourse sexual activity for youth who identified as LGBTQ. Other studies have documented similar trends, and have also shown how appropriate intervention can improve sexual health outcomes for sexually diverse youth (Blake, Ledsky, Lehman et al., 2001). A gendered analysis is important here. Young men who have sex with men experience a heightened vulnerability to HIV due both to the increased likelihood of transmission through anal sex and cultural norms (Falconer & Associates Inc., 2008). Young women who have sex with women may also be a particularly important hidden target group. While providers may assume that they are at lower risk, our data show that they are more likely to engage in intercourse activities than their heterosexual peers. Other studies have also shown higher rates of pregnancy amongst sexually diverse young women (Saewyc, Bearinger, Blum, & Resnick, 1999).

Respondents that had experienced sexual education at multiple locations were also more likely to report higher rates of intercourse activity. Evaluations of comprehensive sex education and HIV/ STI prevention programs show that they do not increase rates of sexual initiation or lower the age at which youth initiate sex (Kirby, Laris, & Rolleri, 2007; Kirby, Laris, Rolleri, & ETR Associates, 2006; UNAIDS, 1997). We speculate that youth who are sexually active may seek out multiple educational opportunities in the community and/or are more likely to remember said education (recall bias).

Study limitations

One limitation of this study is that respondents were not sampled at random, but through their participation at community based programs. As a result, youth participants may have been more likely to have participated in a youth sexual health workshop in the community. In addition, youth from diverse cultural and ethnic backgrounds were over-sampled as they were more likely to be attending these free community programs. A second limitation is that we did not ask about other protective behaviors. So, although youth reported their sexual behaviours, they were not asked about condom use. As such, care needs to be taken in interpreting experience as "risk." A third limitation of cross-sectional data is that it is not possible for us to determine temporal relationships (i.e., which came first: seeking education or sexual behaviour).

Concluding observations

The growing number of diverse youth in Canadian society has direct implications across a wide range of areas including public health programming. Ideas about sex, sexuality and well-being are often shaped by peer social norms, cultural backgrounds and individual life experience. In developing appropriate sexual health programming for youth, care must be taken to pay close attention to these issues of vulnerability and challenge stereotypes about who is and is not "at risk" based on their sexual behaviours.

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