Predictors of exposure to sexual health education among teens who are newcomers to Canada

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Abstract: The aim of this component of the Toronto Teen Survey was to explore predictors of access to sexual health education among urban youth with a focus on newcomers to Canada. A total of 1216 teens were surveyed through community-based agencies. The sample was diverse in terms of age, gender, race, language, religion, length of residency in Canada, and sexual behaviour. Most participants (65%) were born in Canada with 33% born elsewhere. The one third of those born elsewhere (11% of the total sample) who reported living in Canada for three years or less were identified as "newcomers" for the purposes of this analysis. Overall, 92% of the total sample indicated that they had received some sexual health education through classes or workshops and 8% said they had received no such education. Controlling for gender, age, religion, socioeconomic status, and sexual experience, all youth not born in Canada were significantly less likely to report having received sexual health education than those born in Canada. Within this group, 81.2% of those identified as newcomer youth had received some sexual health education compared to 91.8% for youth who had been in Canada longer and 93.7% for Canadian born youth.

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Introduction

Systematic reviews demonstrate that exposure to broadly-based sexual health education programs can have a positive effect on adolescent sexual health behaviour (Alford, 2003; Kirby, Laris, & Rolleri, 2007; Kirby, Laris, Rolleri, & Associates, 2006). However, some sub-populations of youth, including racialized youth and teens who are new to Canada, encounter barriers to timely and appropriate access to such information (McKeown et al., 2008). In order to better understand and address those barriers, the present study investigated predictors of access to sexual health education among urban youth in Toronto with a particular focus on newcomer youth, namely immigrant, refugee, or "undocumented" youth who have lived in Canada for three years or less.

Background

Toronto is often referred to as the world's most ethnically-diverse city. It is home to more than 80 ethnic groups speaking over 100 languages. Half of the city's population (1,237,720 people) is foreign-born (Statistics Canada, 2008), four out of ten people are members of a racialized group, and one in four children aged 6-15 are new immigrants (City of Toronto, Social Development and Finance & Administration Division, 2006). About 7% of the people of Toronto were born in a country where HIV is endemic (Public Health Agency of Canada, 2007).

Although immigrants to Canada are more highly educated than ever before, they are also more likely to be economically disadvantaged. In 2001, one of every three children in families of recent immigrants was poor (compared to 16% for those with Canadian-born

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parents) although variations exist among and within newcomer sub-populations based on ethnicity, gender and legal status (City of Toronto, Social Development Finance & Administration Division, 2006). The dual burden of poverty and social exclusion creates fertile ground for the potential spread of sexually transmitted infections (and other poor health outcomes) among newcomer youth (O'Brien Teengs & Travers, 2006; Travers & Carolo, 2004).

Some immigrant youth are knowledgeable about sexual health because the cultural context of their home country allows for a more open dialogue regarding sexuality. For others who come from conservative or religious backgrounds, the cultural context of sexuality is drastically different. Generally, these youth will not have received broadly-based (if any) sexuality education in their home country because sexuality is believed to be an extremely private matter that can be discussed only between a husband and wife (for example see Maticka-Tyndale, Shirpak, & Chinichian, 2007; Shirpak, Chinichian, & Sepali, 2009). In some cultures, any discussion of homosexuality or pre-marital sexual relationships is taboo, and depending on where one is from, frank discussion can result in harsh consequences such as social isolation and violence (Maticka-Tyndale, Shirpak, & Chinichian, 2007; Morrison, Guruge, & Snarr, 1999). It is not surprising then that parents who come from such backgrounds may feel hesitant about letting their children attend sexual health education classes in Canada, where open discussions of such topics are sometimes encouraged. These same reasons can also make it difficult for parents to discuss sexuality with their children.

Although there are many similarities among immigrant families from more traditional or conservative backgrounds with regards to their attitude towards sexuality, there is also great heterogeneity among and between cultures in terms of the ways in which sex is discussed. Income, education, gender, and religiosity often mediate sexual norms and values. It is also important to note that attitudes toward sexuality are not static. As immigrants go through the process of acculturation, the notion of what is "acceptable" often undergoes many transformations (Espín,1999). These changes ultimately influence, to various degrees, the ways in which parents relate to their often more rapidly acculturating children and the way they view sexual health education in schools. Youth, themselves, also go through a transformation when trying to reconcile "old" and "new" values regarding sexuality. Some youth may feel hesitant, fearful, or ashamed to seek information or services about sexual health when they first arrive, but, as time goes by, they may become more willing to seek such information. The use of English rather than their mother tongue, in some instances, may act as a barrier to discussing sexuality, though at times a second language can facilitate discussion of certain topics that may be taboo for discussion in a native language (Espín, 1999).

In addition to the cultural/religious barriers discussed above, newcomer youth also face systematic barriers in accessing sexual health education. Local, as well as global research, indicates that HIV and other STIs follow patterns of inequity, with marginalized groups most at risk (Farmer, Connors, & Simmons, 1996; Travers, Leaver, & McClelland, 2002). Many newcomer youth face immigration-related factors that may put them at risk for marginalization, including poverty, loss of familiar support networks, challenges in finding adequate employment consistent with their level of education, not knowing where things are or how things work, linguistic barriers to accessing services, and racism (AIDS Committee of Toronto, 2006; Anisef, 2005; Committee for Accessible AIDS Treatment, 2006; Fine & McClelland, 2006; Glazier, Creatore, Cortinois, Agha, & Moineddin, 2004; McKeown et al., 2008; Salehi, 2010).

In a review of 39 randomized and quasi-randomized controlled trials of abstinence-plus education HIV prevention programs in the United States, Canada and the Bahamas, Underhill, Operario and Montgomery (2007) found that schools and community facilities were by far the most common sites for such interventions with community settings predominating. There are many reasons to believe that youth who are new to Canada may be less likely to access such alternative community settings because they may not know of their existence, services may not be available in a language they can understand, and their parents may be hesitant to allow them to participate in activities that are not mandatory. Also, it is not uncommon among newcomer families for youth to take care of their younger siblings while their

parents struggle with finding employment (Suarez-Orozco, 2009). This situation simply leaves little time for youth to participate in community programs.

The present study

Previous qualitative research with immigrant youth and families has documented the challenges they may encounter in accessing sexual health information (AIDS Committee of Toronto, 2006). To our knowledge, the present study is the first large-scale quantitative investigation to explore predictors of access to sexual health education among youth who are newcomers to Canada, i.e., who have been in Canada for three years or less.

Methods

This article is based on data from the Toronto Teen Survey (TTS), a community-based participatory research study that asked youth about their sexual experiences, as well as barriers and facilitators to accessing sexual health clinics and education. TTS is a partnership between Planned Parenthood Toronto, Toronto Public Health and several academic partners. The survey and protocol were developed in partnership with a Youth Advisory Committee (Flicker et al., 2010). Youth were sampled from pre-existing youth groups such as homework clubs, and after-school drop in programs. An explicit strategy to access "hard-to-reach" youth led to visits to shelters, group homes, support programs for sexually diverse youth, and other places where marginalized young people congregate. Between December 2006 and August 2007, 90 community workshops were conducted and 1,216 surveys collected using a peer-to-peer model. Adolescents between 13 to 17 years old were targeted; however, if some members of the youth group were older than 17, they were not precluded from participating. Surveys were self-administered and completed anonymously. The project adopted a unique multi-stakeholder ethical review process and received approval from University of Toronto and York University ethics boards (Flicker & Guta, 2008). This analysis focuses on predictors of youth having received some sexual health education with a particular comparison of youth born in Canada, those born elsewhere who have been here for 4 years or more, an newcomer youth who were more recent arrivals.

Study variables

Exposure to sexual health education was a binary variable (youth either had or had not received some sexual health education). Responses were developed from the following stem question: "Please check all the places you have had sexual health classes or workshops". Respondents could select multiple responses from a list of six options: Elementary school (kindergarten to grade 8); High school; Youth group (please specify); Religious group (i.e., church, temple, mosque); Other; and "I have never received sexual health classes or workshops." If respondents only checked off "I have never received sexual health classes or workshops," they were classified as having a value of 0; otherwise they were given a value of 1.

Gender was a 4-level variable. Respondents were given four categories of gender to choose from: male; female; transgender; and two-spirited. Only 10 respondents chose either transgender or two-spirited. Given these small numbers, only those selecting male or female were included in multivariate analyses.

Immigration status was a 3-level variable: "Born in Canada"; "Born elsewhere and lived in Canada four years or more"; and "Born elsewhere and lived in Canada three years or less"). The following two survey questions were used to construct the immigration variable: "Were you born in Canada? (yes, no)" and "How long have you been living in Canada? ("I have lived here all or most of my life"; "I have been living in Canada for 10 years or more"; "I have been living in Canada between 4 and 9 years"; "I have been living in Canada between 1 year and 3 years; "I have been living in Canada less than 1 year"). For the purposes of this study, youth who were not born in Canada and had lived in Canada for three years or less were classified as newcomers. All other youth who were not born in Canada were classified as not born in Canada but had lived in Canada for four years or more.

Language spoken most often in the home was a binary variable. Those who spoke languages other than English in their homes were classified as such.

Religion was a 5-level variable (None, Catholic, Protestant, Muslim, Other) developed based on respondents selection of up to seven choices from

17 choices. "None" included: Agnostic, No religion, and Atheist; "Protestant" included: Anglican, Baptist, Lutheran, United, and Protestant Christian. Those who identified as Catholics and Muslims were classified as such. Everyone else was classified as Other.

Race was a 5-level variable (South Asian, East/South East Asian, Black, White, and Other). Those identifying as Black African, Black Canadian, and Black Caribbean youth were classified as Black. European and Canadian white groups were classified as White. In order to improve the power of the test, in the logistic analysis, we combined the South and East/South Asian groups and analyzed them as Asians. Due to small numbers, all others were classified as Other.

Parent education was a 3-level variable (University or College, High school or Less, and Don't know) and was used here as a proxy for socio-economic status. The number of people who said they didn't know about their parents education was simply too many to ignore (n=180, 15% of our sample) and hence, this group was included in our analysis.

Sexual activity was a bivariate variable based on the question "We understand that "having sex" means different things to different people. In your opinion, have you had sex?" Those who said they think they have had sex were classified as "experienced". Those who said they have not had sex or were not sure if they had, were classified as "inexperienced or unsure".

Age was a 2-level variable (younger and older). Adolescents aged 13-15 were categorized as younger and those aged 16-18+ were categorized as older. Respondents were given 6 categories to choose from: 13 years old, 14, 15, 16, 17, 18 years old or older. In order to increase cell numbers, the 13-, 14-, and 15-year-olds were re-coded into "younger adolescents," and the 16-, 17-, and 18+-year- olds were re-coded into "older adolescents". Our community partner, Planned Parenthood, felt that older and young adolescents face different sets of sexual health issues. Younger adolescents are more likely to be sexually inexperienced, to live at home, and to be dependent on their parents. Older adolescents are more likely to be involved in romantic relationships, to have jobs (and consequently a little bit more autonomy), and to live independently. It is also known that sexual activity is positively correlated with age meaning that older adolescents are more likely to be sexually active.

Statistical tests

Descriptive statistics were calculated for the demographic variables stratified by the outcome variable (having received some sex education). Chi Square tests (two tailed, $p<0.05$) were performed to determine statistically significant differences between groups. A binary logistic regression model was developed in order to estimate the odds of

Table 1 Sample demographics*

Total	**1216**	**%**
Age (years)		
13-15	628	52
16-18+	546	45
Gender		
Female	652	54
Male	543	45
Two-spirited or Transgender	10	0.1
Race		
South Asian	116	10
East and South East Asian	176	14
Black	463	38
White	235	19
Other	188	15
Religion		
No religion	218	18
Catholic	333	27
Muslim	114	9
Protestant	328	27
Other	163	13
Parents education		
High school or less	313	26
University or collage	715	59
Don't know	182	15
Immigration		
Born Can.; here 10+ yrs	794	65
Not born Can.; here 4+ yrs	267	22
Not born Can., here 3 yrs or less	138	11
Languages most often spoken at home		
English is one of them	998	82
English is not one of them	218	18
Sexual experience		
Inexperienced or unsure	741	61
Experienced	418	34

*** Missing responses constituted 0 - 1.7% of the total for all variables except race (3%), religion (5%), and sexual experience (5%).**

receiving some sex education with the following covariates: age, gender, race, religion, parental education (as proxy for SES), immigration, and sexual behavior. The language variable was not included in the multivariate analysis because as a general rule, languages most spoken at home has been used as a proxy to measure the level of acculturation in families and hence, it strongly correlates with the length of time since migration (Barusch & Spaulding, 1989; Chien, George, & Armstrong, 2002; Guilamo-Ramos, Jaccard, Pena, & Goldberg, 2005; Stevens, Seid, Mistry, & Halfon, 2006; Zanchetta & Poureslami, 2006). Therefore, including language would have reduced the power of analysis. Analysis was performed using an ENTER method in which the covariates were entered in three blocks. Block One contained demographic variables (age, gender, religion, race, parental education). Block Two contained acculturation variable (length of time spent in Canada). Block Three contained the behavioral variable (sexual activity). Only youth who provided responses for all relevant variables were included in the logistic analysis. Data were incomplete for 134 youth, hence a total of 1061 participants (89% of sample) were included in this analysis.

Results

Respondent characteristics

The sample was diverse in terms of age, gender, race, language, religion, length of residency in Canada, and sexual experience (Table 1). Religious diversity was reflected in the 9.4% identifying as Muslim, 27.4% Catholic, 27% Protestant and 18% reporting no religion. Parental education was high with 59% reporting that their parents had university or college education. Thirty four percent of youth reported being sexually experienced based on their personal assessment of what they understood "having sex" to mean.

Most participants were born in Canada (65%), 33% were born elsewhere and had lived in Canada for four years or more, and 11% were born elsewhere and reported living in Canada for three years or less. It is this latter group, designated here as "newcomers", that was of particular interest in the present study.

Sources of sexual health education

Respondents were invited to check all applicable options on a list of places where they "have had sexual health education classes and workshops." Table 2 compares those responses for youth born in Canada and those born elsewhere who had been in Canada for either three years or less (newcomers) or for a longer period of time. A summing of all responses for the possible sources of sexual health education shows that schools (elementary and secondary) had 1472 responses, youth groups had 454, religious groups 78, and other 33. The excess of responses over respondents is consistent with the finding that 61% of respondents reported receiving sexual health education from more than one source although 15% cited elementary school as their only source and 13% cited secondary school as their only source (data not shown). Youth groups, cited by 37% of the total sample, and religious groups, cited by 7% were proportionately much less likely to be identified as an only source. Newcomer youth (in Canada for 3

Table 2: Sources of sexual health education by length of time in Canada*

	Canadian-born, lived in Canada 10+ years (n=780)		Born elsewhere, lived in Canada 4+ years (n=263)		Born elsewhere, lived in Canada 3 years or less (n=137)	
Source	**N**	**%**	**N**	**%**	**N**	**%**
Elementary school	532	68.2	165	62.5	44	32.1
High school	478	61.3	178	67.4	75	54.7
Youth groups[a]	320	41.0	98	37.0	36	26.3
Religious groups	48	6.2	21	8.0	9	6.6
Other	23	2.9	7	2.7	3	2.2
Never	36	4.6	17	6.4	25	18.2

***Note: Sources are not mutually exclusive in that respondents were asked to check all of the places they had sexual health classes or workshops.**

[a] Youth groups may have consisted of homework clubs, YMCA, after-school programs, parks and recreation groups, and other unspecified.

Table 3 Bivariate analysis comparing those who have had some sexual health education with those who have had none

	Total N	No sexual health ed[b] N	%	Some sexual health N	%
Demographic variables[a]					
Total	**1216**	**100**	**8.2**	**1116**	**91.8**
Age (years)					
13-15	551	44	8.0	507	92.0
16-18+	637	53	8.3	584	91.7
Gender					
Female	652	50	7.7	602	92.3
Male	543	48	8.8	495	91.2
Two-spirited or transgender	10	1	10.0	9	90.0
Race*					
South Asian	116	5	4.3	111	95.7
East and South East Asian	176	29	16.5	147	83.5
Black	463	38	8.2	425	91.8
White	235	7	3.0	228	97.0
Other	188	20	10.6	168	89.4
Religion					
No religion	218	21	9.6	197	90.4
Catholic	333	26	7.8	307	92.2
Muslim	114	11	9.6	103	90.4
Protestant	328	19	5.8	309	94.2
Other	163	16	9.8	147	90.2
Parents education (proxy for SES)					
High school or less	313	23	7.3	290	92.7
University or collage	715	60	8.4	655	91.6
Don't know	182	17	9.3	165	90.7
Acculturation variable					
Length of time spent in Canada*					
Born in Canada, lived 10+ years	794	50	6.3	744	93.7
Born elsewhere, lived 4+ years	267	22	8.2	245	91.8
Born elsewhere, lived 3 years or less	138	26	18.8	112	81.2
Behavioural variable					
Sexual experience*					
Not experienced or unsure	741	79	10.7	662	89.3
Experienced	418	19	4.5	399	95.5

[a] Missing responses represented 0-1.7% the total for all variables except for race (3%), religion (5%) and sexual activity (5%).
[b] Responses indicate places where youth said they had received sexual health classes or workshops. Options were elementary and secondary school, youth groups, religious groups, "other", and "never had such classes". *P< 0.05

years or less) were about one half as likely to report elementary school (32.1%) than were students born elsewhere who had been in Canada longer (62.5%) (Table 2).This pattern, although less pronounced, was also found for high school and youth groups. Overall, about 92% of the total sample had some sexual health education classes or workshops, and 8% did not.

Factors associated with some versus no exposure to sexual health education

The bivariate analysis (Table 3) showed that in terms of exposure to sexual health education, there were statistically significant differences between newcomers, Canadian-born youth, and longer-term immigrant youth ($\chi^2 = 25.116$, df = 2, $P < 0.01$); while 6.3% of Canadian-born youth had never received sexual health education, 18.8% of newcomer youth (defined as youth born elsewhere who have lived in

Table 4 Binary logistic model

	B	S.E.	Wald	df	Sig.	Odds Ratio
Gender	.131	.233	.315	1	.575	1.140
Age	-.344	.378	.831	1	.362	.709
Race			1.992	3	.574	
Asian	-.315	.335	.882	1	.348	.730
Black	-.214	.355	.363	1	.547	.807
Other	.229	.490	.218	1	.640	1.257
Religion			2.484	4	.648	
Catholic	.134	.336	.160	1	.689	1.144
Muslim	.235	.423	.309	1	.579	1.265
Protestant	.534	.373	2.052	1	.152	1.706
Other	.019	.394	.002	1	.962	1.019
Parents education			1.243	2	.537	
College or university	.296	.360	.678	1	.410	1.345
Don't know	.353	.318	1.233	1	.267	1.423
Immigration			14.656	2	.001	
Born elsewhere lived in Canada 4+years	-.466	.452	1.063	1	.302	.627
Born elsewhere living in Canada 3 years or less	-1.654	.450	13.516	1	.000	.191
Sexual experience	-.647	.310	4.352	1	.037	.523
Immigration by age interaction			4.637	2	.098	
Immigration 1 by age	.433	.595	.531	1	.466	1.542
Immigration 2 by age	1.428	.663	4.636	1	.031	4.169
Constant	2.906	.549	27.989	1	.000	18.287

Variable entered on step 1: Gender, race, religion, age. Variables entered on step 2: Immigration. Variables entered on step 3: sexual experience. Variables entered on step 4: Interaction terms (age by immigration). Reference categories: Gender (males); Age (16-18), Race (White), Religion (No religion), Parents Education (high school or less), Immigration (Canadian-born), Sexual experience (experienced).

Canada for three years or less) reported never having received any sexual health education. As for longer term immigrant youth (those born elsewhere and living in Canada for 4+ years), 8.2% reported never having received any sex education. While a sizeable majority of sexually experienced and not experienced or unsure youth reported exposure to some sexual health education (95.5% and 89.3% respectively), this difference was statistically significant (χ^2 = 13.392, df = 1, $p < 0.01$). Similar differences were found for ethno-cultural group and exposure to sexual health education (χ^2 = 8.675, df = 3, $P < 0.01$); East and South East Asian youth had notably less exposure (83.5%) than did Black, South Asian and White youth (91.8%-97.0%).

Modelling predictors of exposure to sexual health education

In our multivariate analysis (Table 4), a test of the full model with all predictors against a constant-only model was statistically reliable (χ^2 = 32.415, df = 16, P = 0.009) indicating that the predictors, as a set, reliably distinguished between those who had received some sexual health education classes or workshops and those who had not. Controlling for all other variables, newcomers (those who had lived in Canada for three years or less) were 5 times less likely to have received sexual health education compared to Canadian born youth (OR = 0.191). Those who said they were sexually inexperienced or unsure were two times less likely to have received sexual health education compared to those who said they were sexually experienced (OR = 0.53).

Discussion

This study explored predictors of exposure to sexual health education in a highly ethno-culturally and racially diverse sample of Toronto youth aged 13-18. Since the sample was based on pre-existing youth/community groups, youth who did not access those programs were excluded. This non-random sampling yielded a unique population of participants among whom about 85% were from racial and ethno-cultural

groups other than white Caucasian, 33% were not born in Canada (i.e., immigrants), and 11% of the total sample were considered to be newcomers to Canada on the basis of their having been in Canada for three years or less at the time of the study). Although this 11% represented 138 individuals, we believe it to be one of the largest samples of newcomer youth to Toronto to have been studied in this way.

Exposure to sexual health education

Among all participants, schools (elementary and secondary) were most often cited as a source of sexual health education. For newcomer youth especially, who may have limited knowledge of or access to other community programs, school is a particularly crucial point of contact. As noted in the *Canadian Guidelines for Sexual Health Education* (2008):

> Since schools are the only formal educational institution to have meaningful (and mandatory) contact with nearly every young person, they are in a unique position to provide children, adolescents and young adults with the knowledge, understanding, skills and attitudes they need to make and act upon decisions that promote sexual health throughout their lives (p. 19).

It is noteworthy that a sizeable percentage of participants also cited other non-school settings as sources of sexual health education with community youth groups being predominant among these other sources. The fact that youth groups were often cited may be partly a function of our sampling method but it probably also reflects a different kind of experience in such settings which may suggest needs and issues not always addressed in schools. Further exploration into the similarities and differences in these settings may be merited. Despite our finding that the vast majority of youth reported some exposure to sexual health classes or workshops, we did not assess here the extent or content of that exposure. Although we consider below the reasons why newcomer youth may not have experienced sexual health education, it is a concern that 8% of our total sample indicated that they had never received any such education in a province where sexual health education (as a component of the health curriculum) is a currently mandated part of the grade seven and nine school curriculum.

Newcomer youth

Although 81.8% of newcomer youth had experienced some sexual health education, the 18.8% who had not represent a notable and important unmet need. We have previously cited a number of possible reasons for this lack of exposure to such education, whether in schools or community groups. While our research can document this inequity in exposure to sexual health education, an inequity that also pertains in relation to access to sexual health services (Salehi et al., 2009), this evidence is primarily a motivator rather than a guide to action. While our findings indicate that most immigrant youth eventually receive sexual health information through school or community services, this should not deter action to address the inequity for youth who have more recently arrived including those who arrived in their later teens and thus missed the offerings in elementary and early high school.

Although an international consensus on sexual rights remains a work in progress (World Association for Sexual Health, 2008), the acknowledgement of sexual rights as an aspect of human rights that includes sexuality education (World Health Organization, 2008) is widely cited, including in the *Canadian Guidelines for Sexual Health Education* (2008; p. 6). In the present context, a rights perspective indicates the need to address inequities in access to sexual health education for all youth including newcomer youth. For newcomer youth, action is needed on previously identified limiting factors including lack of awareness, language barriers, parental hesitancy (particularly about non-mandatory educational activities), and also family circumstances that require youth to care for younger siblings (Suarez-Orozco, 2009). Schools and other agencies are in a position to address these and other such factors through curricular revision, incorporating sexual health education into English as a Second Language (ESL) classes, giving particular attention to youth from HIV endemic countries, and institutional support for educators currently seeking to address the needs of newcomer youth.

Limitations and Analytical Challenges

The survey was administered in English only. Several measures were taken to ensure that the survey was accessible to those youth for whom English was not a mother tongue. During the survey, participants were

encouraged to raise their hand and ask questions if they were not sure what a particular word meant. As time went by, we learned which questions and/or words were particularly difficult for youth in general, and for newcomer youth who were not fluent in English. Time was devoted at the beginning of each session to explain more challenging areas. Moreover, a professional interpreter was used for one session where a youth worker identified the need. Despite these efforts, language and understanding were complicating limitations.

Racial categorizations, e.g. "Black", were somewhat over-inclusive and may not have adequately reflected the richness and complexity within each group. Our use of parental education as a proxy for SES may be problematic .Although SES is typically positively correlated with parental education, this may not have been the case among immigrants. Given that Canadian immigration is granted on a points-based system, applications from more highly educated immigrants are favored. Additionally, previous research has shown that many highly educated immigrants have problems finding adequate employment and thus earn salaries well below what they should be earning based on their education level (McKeown et al., 2008; Ornstein, 2006). Given the high proportion of immigrant youth in the current sample, it is probable that our SES variable has been confounded, perhaps explaining its lack of association with exposure to sexual health education.

Although length of time in the host country is an important proxy for acculturation, it most certainly cannot fully measure acculturation on its own. Acculturation is an extremely complex concept and to paint a more realistic picture of how acculturation influences the health of immigrant youth, one needs to appreciate the heterogeneity of immigration experiences of youth and the many interacting variables at play (loss of old friendships, intergenerational conflicts, legal status, etc.) (Abraido-Lanza, Armbrister, Florez, & Aguirre, 2006).

It should also be noted that our definition of newcomers (lived in Canada three years or less) is not commensurate with other studies that have used census definitions of newcomer (i.e., less than five years). Because we were working with adolescents at the time that we developed with survey, we felt this shorter time period would more accurately reflect the concept of "newcomerness." In retrospect, asking respondents to tell us how many years they had lived in Canada (as opposed to having them choose categorical responses) may have been a wiser approach.

Another limitation of this analysis is our crude measure of "some sex education." Our analysis looked at whether youth had received any sexual health classes or workshops at all from a number of possible sources (with presumably different philosophical and curricular orientations to the subject matter). Finally, this analysis did not address the quantity or quality of the sexual health education that youth received from the sources they identified. It was our expectation that, at a minimum, sexual health education should include conversations about how to pursue pleasure, develop healthy relationships, determine the consequences of unprotected sex, and protect against violence and coercion (Fine & McClelland, 2006; Tolman, 2002).

Concluding observation

A recent study of high school graduates in Ontario found that students were generally satisfied with the sexual health education they received, although many wished they could have received the same information at a younger age (Meaney, Rye, Wood, & Solovieva, 2009). Our study suggests that age, access and diversity are important considerations in shaping sexual health education to meet the needs of an increasingly heterogeneous population and to close the gaps for those with unmet needs, and particularly for newcomer youth.

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