CANADIAN SEXUAL HEALTH INDICATORS SURVEY —PILOT TEST AND VALIDATION PHASE

A Report on Results from the Pilot-testing and Validation of the Canadian Sexual Health Indicators Survey

FINAL TECHNICAL REPORT

Public Health Agency of Canada
Agence de la santé publique du Canada

Canada

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PREFACE

This report contains the findings from the Validation Phase of the *Canadian Sexual Health Indicators Survey*. The culmination of a development process which spanned several years and included researchers in the field of sexual health from across Canada, the *Canadian Sexual Health Indicators Survey* is intended as a tool to collect comprehensive data on both positive and negative indicators of sexual health among Canadians.

This is the first comprehensive survey tool of its kind to be developed including positive measures such as self-efficacy along with information about participants' access to information and services. The survey tool was developed to measure additional components such as those which influence how Canadians obtain information and services, the type of relationships they have, and how confident they feel in their ability to protect themselves from negative health outcomes.

The development of a reliable and valid research tool which can be used to gather information on sexual health throughout the life course aligns with the Public Health Agency of Canada's mandate to provide evidence-informed research to support public health goals. Additionally, the data provide evidence upon which to base federal and provincial/territorial government collaboration on sexual health programming and policy to improve and protect the sexual health of Canadians, and to promote sexual health as a component of overall health.

To this end, the Public Health Agency of Canada has engaged and sought support from provincial and territorial government representatives through two federal/provincial/territorial groups. Both the sexually transmitted and blood-borne infections (STBBI) issue group and the Federal/Provincial/Territorial Advisory Committee on AIDS are comprised of federal, provincial and territorial governmental representatives who provide policy development and strategic advice on approaches in addressing STBBI and HIV/AIDS, including prevention and control activities such as health promotion, research and surveillance.

While the current Validation Phase tested the survey tool with youth aged 16-24 years in four sites, the larger goal is to use the survey tool to measure the sexual health of Canadians at various life stages. Due to the use of a non-representative sampling strategy, the results of this phase provide data used only for assessing the validity and reliability of the tool. They cannot be used to interpret trends in sexual health among youth.

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The *Canadian Sexual Health Indicators Survey* resulted from the collaboration of many individuals, agencies, and institutions who contributed to its development and implementation.

The research team responsible for the development of the survey and the collection of the pilot data included:

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Lastly, the research team is indebted to the young Canadians who completed the survey and to the community organizations and the health and education professionals who demonstrated their interest in the sexual health of youth by their generous assistance in recruiting these participants.

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EXECUTIVE SUMMARY

Currently in Canada, routinely gathered sexual health data are limited to reported numbers of positive tests of three sexually transmitted infections (chlamydia, gonorrhea, infectious syphilis), rates of pregnancy, age of first sexual intercourse, condom use and birth control use. Comprehensive data on the sexual health of young people are needed in Canada in order to create effective strategies, policies and programs that promote the sexual health of this sub-population. This document reports on the development, pilot-testing and validation of a comprehensive survey of sexual health of youth aged 16 to 24 years, in British Columbia, Alberta, Quebec, and Nova Scotia.

The *Canadian Sexual Health Indicators Survey* measures both positive and negative aspects of sexual health outlined in the World Health Organization's working definition of sexual health, including self-efficacy, sexual satisfaction, access to sexual health education, access to sexual health services, experiences of sexual violence, use of contraception and barrier protection, types of sexual behaviours engaged in and the contexts of these behaviours.

The results from the pilot-testing and validation of the survey suggest that these indicators are both valid and reliable measures of sexual health for this age group and support the potential use of this survey at a national level.

BACKGROUND

In 2006, a Working Group on Sexual Health under the Joint Consortium for School Health developed an agenda for sexual health research in Canada. One of the main research priorities identified was the development of a comprehensive tool to measure the sexual health of young people in Canada.

Between 2007 and 2010, a team of four leading researchers in sexual health developed a set of indicators that would comprehensively measure the sexual health of young people in Canada between 16 and 24 years of age. The development of this set of indicators was based on a thorough review of existing measures of sexual health and focus groups with key informants including representatives from the public health sector, clinical sexology, academia, sexual health education, and community organizations. This set of indicators formed the *Canadian Sexual Health Indicators Survey*.

The content of the *Survey* was conceptualized within the working definition of sexual health articulated by the World Health Organization. In light of this definition, the *Survey* includes measures of physical, mental, emotional and social well-being in relation to sexuality, approaches to sexuality and sexual relationships, access to sexual health education, access to sexual health services, sexual satisfaction, sexual functioning, types of sexual behaviour engaged in, use of contraception and barrier protection, and experiences of sexual violence and coercion.

The *Survey* allows for the collection of detailed data on the contexts of sexual behaviour. These data will have benefits at both the federal and provincial/territorial levels insofar as they provide evidence upon which to base effective strategies, policies and programs to promote sexual health and to prevent negative sexual health outcomes.

PURPOSE

The pilot-testing and validation of the *Canadian Sexual Health Indicators Survey* aimed to:

- determine the quality of data collected with the survey questions – that is, the validity and reliability of the data;
- establish a scientifically sound survey instrument to use in the collection of national data in Canada among young people aged 16 to 24 years; and
- determine the feasibility of administering the survey through the use of a computer-assisted self-interviewing (CASI) program.

PILOT TESTING AND VALIDATION METHODS

In February and March of 2010, six focus groups were held with youth between 16 and 24 years of age, in Quebec and British Columbia. Efforts were made to collect data: (1) in both urban and rural areas, (2) from males, females and gender variant youth, (3) from both in- and out of school youth, and (4) from sexual minority youth. A content analysis of data from the 32 participants in these focus groups formed the basis of revisions to the survey and the administration system.

Between April and June 2010, the survey was pilot-tested with 1185 participants aged 16 to 24 years, in British Columbia, Alberta, Quebec and Nova Scotia. Participants were recruited through a purposive, convenience sample from community organizations in each of the four provinces including youth drop-in centres, health centres, universities, community colleges, CEGEPs (Quebec only), counselling service centres, employment centres, sexual minority support centres, and shopping malls.

The survey was self-administered by the participants using a computer-assisted self-interviewing (CASI) system developed by The Learning Bar. The system was youth-friendly with roll-over definitions of highlighted terms and a survey progress indicator. The survey took an average of 25 minutes to complete with completion times ranging from 10 minutes to 90 minutes.

The validation of the survey assessed content validity (the extent to which data measure what they were intended to), construct validity (the extent to which data which should correlate, actually do correlate with each other), criterion validity (the extent to which the data correlate with data from an established survey measuring the same thing), test-retest reliability (the consistency of data over time), and inter-rater reliability (the consistency of data from participants taking different versions of the survey). Analysis of missing values was also conducted to determine patterns in non-response to each of the survey items.

RESEARCH FINDINGS

Missing Values

The majority of the items on the survey had relatively low levels of non-response of under 10%. The average (mean) proportion of missing values was 6.71%. Analyses suggested that the proportion of missing values increased significantly with progression through the survey. Participants tended to skip questions at the end of the survey with higher frequency than at the beginning of the survey. This may suggest that the survey was too long and that participants were fatigued at the end of the survey. The most sensitive questions, inquiring into details of sexual activity, were placed at the end of the survey. This may also have contributed to the higher proportion of missing values among these questions.

Content Validity

Content validity refers to the extent to which the data measure what they were intended to measure. The statistical analyses suggested that, for the most part, the items in the survey measure the aspects of sexual health they were intended to measure. For example, the items intended to measure protection self-efficacy[1], STI/HIV testing self-efficacy, sexual problem self-efficacy, sexual limit-setting self-efficacy, sexual assertiveness, partner violence victimization and sexual coercion produced seven identifiable components in an exploratory factor analysis. These seven individual components were confirmed in a confirmatory factor analysis. In addition, the items representing these aspects of sexual health demonstrated strong inter-item reliability with Cronbach's alpha levels of greater than 0.7.

The analyses also suggested that certain types of questions were not successful in yielding the data they were intended. Check-list style questions, questions requiring participants to recall the

[1] 'Self-efficacy' is the belief in one's ability and competence in performing in a certain way to achieve a goal. It is also the belief that one has the capability to behave in a way required to manage a situation.

age at which they first experienced something, questions requiring participants to recall the number of partners with whom they have experienced something, and matrix style questions which simultaneously ask participants about the context of three types of sexual behaviour (oral, vaginal, and anal sex), yielded unreliable and invalid data for a large proportion of participants.

Construct Validity

Construct validity refers to the extent to which variables which would be expected to be related in the data, actually are. The analysis of items in the survey which ought to be correlated, demonstrated strong, significant correlations. The highest level of education completed by participants demonstrated a significant, positive relationship to age ($R = 0.556$, $p \leq 0.01$). As the age of participants increased, the level of education they completed also increased.

In addition, ratings of sexual satisfaction ($p \leq .05$), self-rated sex drive ($p \leq .001$), and sexual arousal ($p \leq .001$) were significantly lower among individuals who had difficulty having sex because of a medical or physical condition than among individuals without such difficulty. Similarly, self-rated sex drive ($p \leq .05$) and sexual pleasure ($p \leq .05$) were significantly lower among individuals with difficulty enjoying sex because of a medical or physical condition than among individuals without this difficulty.

A significantly lower proportion of those who reported difficulty using protection because of a medical or physical condition reported condom use at last vaginal intercourse with a female ($p \leq .05$) and condom use at last vaginal sex with a male ($p \leq .05$), than those who did not report such difficulty. Similarly, participants who reported using condoms within the previous 12 months had significantly higher protection self-efficacy than participants who did not report using condoms during this period ($p \leq .001$).

Participants who reported being tested for sexually transmitted infections (STIs) in the previous 12 months had significantly higher STI/HIV testing self-efficacy than individuals who did not report being tested for sexually transmitted infections during this period ($p \leq .001$). Individuals who reported being tested for HIV in the previous 12 months also had significantly higher STI/HIV testing self-efficacy than individuals who did not report being tested for HIV during this period ($p \leq .001$).

Finally, participants' sexual orientation was significantly correlated with the sex of partner to whom they are attracted ($p \leq .001$) and to the sex of the partner with whom they usually engaged in sexual activity ($p \leq .001$).

Criterion Validity

Within this study, criterion validity refers to the extent to which the data from this survey correlate with data from an established survey that measure the same phenomena. In the current study, the median age of first intercourse was just over 15 years of age. This corresponds to the most common age of first intercourse reported by young people in grades 7 through 12 in British Columbia (Smith et al., 2009). Among participants in the current study, 60% reported using a condom the last time they had vaginal sex with a female and 55% reported using a condom at last intercourse with a male. This is very close to findings from Smith and colleagues (2009) in which 60% of participants reported using a condom the last time they had sex. In the current study, 5% and 9% of participants reported using the emergency contraceptive pill at last vaginal sex with a female and males respectively. This is similar to the findings from Smith and colleagues (2009) who found that 5% of their sample reported using the emergency contraceptive pill the last time they had sex.

In a 2009 study of Toronto youth, Flicker and colleagues (2009) found that the two most preferred places to go for sexual health information are healthcare professionals and friends. In the current study, we likewise found that the two most preferred sources of sexual health information were healthcare professionals and friends.

Test-retest Reliability

Test-retest reliability refers to the consistency in data that should not change over a specified period of time. In the current study, test-retest reliability was assessed in one set of survey items. About 95% of participants who indicated in the first third of the survey that they had done something sexual with a partner, were consistent with this response in the latter third of the survey ($p \leq .001$).

Inter-rater Reliability

In the current study, inter-rater reliability was assessed by comparing the validity and reliability of the data from participants taking the English survey with that of the data from participants taking the French survey. The validity and reliability of the data did not differ between the two versions of the survey, with one exception. "STI/HIV Testing Self-efficacy" did not demonstrate content validity in the French version of the survey. This scale likewise did not demonstrate strong construct validity in the French survey. Significant differences were found as expected in the full sample and among the English survey data. Among the French data, there was no significant difference in STI/HIV Testing Self-efficacy among those who did and who did not report getting tested for STIs in the previous 12 months ($p = 0.278$) nor between those who did and who did not report getting tested for HIV in the previous 12 months ($p = 0.383$).

CONCLUSIONS

This study suggests that most of the indicators of sexual health are both valid and reliable for this age group. Several revisions to the survey items and to the structure of the survey are recommended to improve the quality of data collected. These include:

- ensuring response categories are exhaustive and relevant to youth;
- reduce the length of the survey;
- move the most sensitive items in the survey closer to the middle of the survey;
- focus test the items yielding high proportions of missing values with youth to determine why participants skipped these items;
- re-format check list style questions and matrix questions;
- re-format questions requiring participants to recall the number of partners with whom they have engaged in specific activities and the age at which they first engaged in activities in order to assist the recall of participants (e.g., present ranges); and
- ensure that all skip patterns are functioning within the computer-assisted survey system as intended.

Canada currently lags behind several other countries in its ability to collect national comprehensive data on this important aspect of the health of youth. The pilot-testing and validation of this survey provides the opportunity for Canada to meet this challenge posed by other countries and to begin to collect national data on the sexual health of its youth. Having a valid survey instrument for this purpose will provide valuable data to policy-makers and decision-makers upon which to base policies and decisions.

I. INTRODUCTION

SURVEY BACKGROUND AND OVERVIEW

Context of the Canadian Sexual Health Indicators Survey

National level indicators of sexual health are of particular interest to governments, policy-makers, educators, and public health professionals in Canada. These indicators point to the state of sexual health in Canada, and inform policies and programs that aim to improve the sexual health of Canadians.

However, routinely gathered, national data related to sexual health in Canada are currently limited to the reported number of positive tests of three sexually transmitted infections (chlamydia, gonorrhoea, infectious syphilis, and HIV) and rates of pregnancy. A very limited body of data on sexual behaviours in Canada has resulted from national surveys on broader health issues. For example, the *National Population Health Survey* (Statistics Canada 1998), the *National Longitudinal Survey of Children and Youth* (Statistics Canada 2007), *Health Behaviour in School-Aged Children* (Currie, Gabhainn, Godeau, Roberts, Smith, Currie, Pickett, Morgan, & Barnekow, 2008) and the *Canadian Community Health Survey* (Statistics Canada 2010) each include a limited number of questions on age of first sexual intercourse, condom use, contraception use, and number of sexual partners. In addition, provincial and local surveys conducted in British Columbia (Smith, Stewart, Peled, Poon, Saewyc, and the McCreary Centre Society 2009) and Ontario (Flicker, Flynn, Larkin, Travers, Guta, Pole & Layne, 2009) provide data on the health of specific sub-populations that cannot be generalized to other provinces and territories, or to the broader Canadian population.

Although comprehensive national sexual health surveys have been conducted in Australia (Smith and La Trobe University. Australian Research Centre in Sex, Health and Society 2009), the United States (Herbenick, Reece, Schick, Sanders, Dodge & Fortenberry, 2010; Laumann, Gagnon, Michael & Michaels 1994), Ireland (Layte, McGee, Quail, Rundle, Cousins, Donnelly, Mulcahy, & Conroy, 2006), and Great Britain (Erens, McManua, Field, Korovessis, Johnson, Fenton, & Wellings, 2001), a comprehensive sexual health survey has not yet been conducted in Canada. Unlike these other developed countries, Canada does not currently have a national picture of the sexual health from which to develop sexual health strategies, policies and programs.

In early 2006, the Working Group on Sexual Health (WGSH), a working group of the Joint Consortium for School Health (JCSH)[2], developed and endorsed an inventory of national sexual health research gaps and priorities. This inventory was shared with researchers, funding bodies and governments for further feedback and input. A smaller group consisting of WGSH members with sexual health research expertise met later in 2006 to review and prioritize the inventory based on the feedback received in order to develop a pan-Canadian sexual health research agenda which was subsequently endorsed by the WGSH and shared with the provincial and territorial membership of the JCSH. One of the main research agenda priorities identified was the development of a comprehensive tool to measure indicators of sexual health in Canada.

Development and Overview of the Canadian Sexual Health Indicators Survey

In early 2007, the Public Health Agency of Canada brought together a team of four leading researchers in sexual health to address the research agenda set forth by the JCSH WGSH. The task of this research team was to develop, pilot test and validate a survey with which to collect comprehensive data on the sexual health of young Canadians.

The first step toward this survey was to develop a framework or model to identify standardized indicators that could be used to assess the sexual health of Canadians.

[2] The Joint Consortium on School Health is a consortium of Canadian provincial and territorial Deputy Ministers of Health and Education working in partnership with the federal government to improve the health of school-aged children and youth.

The research team established a list of eight primary components of sexual health appropriate for inclusion in the assessment framework. The components emphasized factors that were seen as necessary to provide the basis for a framework and survey tool to comprehensively assess the sexual health of Canadians. A measures bank was created consisting of available measures from surveys that had been previously used to assess various aspects of sexual health, including some of those identified within the eight primary components. The measures bank was used to initiate the process of identifying potential scales and survey items that could be incorporated into a prototype questionnaire to assess sexual health.

Focus groups with professionals in the field of sexual health were held from June to December 2007 for feedback on the provisional eight-component framework. A focus group discussion guide was developed to facilitate a uniform approach to conducting the sessions. A total of 13 focus groups were conducted with 79 key informants in Alberta, Quebec, Ontario, Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland. Key informants included representatives from the public health sector, clinical sexology, academia, sexual health education and community organizations. Data from these focus groups pointed to the need to adopt a broad conceptualization of sexual health in developing the survey, in order to allow for the collection of data that represent both positive and negative aspects of sexuality.

Upon completion of the measures bank and focus groups, the research team decided to focus the scope of this phase to developing a sexual health assessment framework for young people aged 16 to 24. This decision was made for several reasons. First, it became evident that the majority of existing measures of sexual health had been validated and reliability tested in adolescent and young adult samples. Second, the relevant indicators of sexual health identified by the research team and focus group participants were broad in scope, large in number and not relevant across the lifespan.

The researchers concluded that this first phase of the project would focus on the development of an assessment framework that is adequate in its specificity by limiting itself to the assessment of sexual health in one lifestage. The decision to focus first on the 16 to 24 year age group was impacted by the recognition that adolescence and young adulthood represent critical periods in the life course for the development of sexuality and sexual health.

The research team originally decided to locate the framework and survey development within the theoretical approach of Ecological Systems theory (Bronfenbrenner, 1979). However, as the survey development process unfolded, it was clear that the framework and survey tool were more suitably conceptualized within the working definition of sexual health articulated by the World Health Organization (WHO):

> "Sexual Health is a state of physical, emotional, mental and social well-being. In relation to sexuality, it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe experiences, free of coercion, discrimination and violence."
> (World Health Organization, 2002)

The recognition of the larger contexts that influence sexual health requires the understanding that sexual health is one aspect of the overall health of individuals and is interconnected to other aspects including physical, mental, emotional and spiritual health. Broadening the definition of health to include the physical, mental, emotional, spiritual and sexual health of individuals allows for a multifaceted approach throughout people's lives. Survey questions were developed to capture all elements of the WHO working definition as well as the content of discussions with key informants.

The *Canadian Sexual Health Indicators Survey* has the potential to broaden the existing body of sexual health data in Canada to be more reflective of the multidimensional nature of sexual health articulated in the WHO working definition. It is hoped that broadening this body of data will, in turn, shape the way in which academics, policy-makers and program planners conceptualize sexual health. Table 1 below summarizes the survey items that represent this comprehensive, multidimensional conceptualization of sexual health within the *Canadian Sexual Health Indicators Survey*.

TABLE 1. Canadian Sexual Health Indicators Survey Content

Survey Content	Number of Items
PHYSICAL WELL-BEING	
General	3
Disease, Dysfunction, Sexual Functioning	6
Sexual Health Service access and use	2
Protective and Risk Behaviours	8
MENTAL WELL-BEING	
Suicide ideation and attempts	2
EMOTIONAL WELL-BEING	
Sexual self-acceptance	3
SOCIAL WELL-BEING	
Sexual communication	3
APPROACHES TO SEXUALITY	
General	3
Attitudes	19
Sexual self-efficacy	25
SEXUAL RELATIONSHIPS	4
SEXUAL EXPERIENCES	
Sexual Satisfaction/Pleasurable experiences	2
Nature of sexual experiences	10
DISCRIMINATION, COERCION AND VIOLENCE	
Experience of sexual coercion	4
Experience of sexual violence	4
SOCIO-DEMOGRAPHIC CHARACTERISTICS	
Socioeconomic Status	6
Region/area of residence	2
Religion/spirituality	1
Race/ethnicity	1
Country of Birth	1
Primary spoken language	1
Sexual orientation	3
Gender identity	1
Age	1

Expanding the collection of data on sexual health to encompass positive and negative dimensions and outcomes of sexuality has the advantage of providing a basis for policies, services and programming that address a greater range of sexual health needs and concerns. A comprehensive database with both positive and negative dimensions and outcomes of sexuality can inform a conceptualization of sexual health that recognizes the larger contexts that can influence sexual health behaviour, including issues of power, coercion, identity, self-efficacy, self-esteem, access to sexual health education, access to sexual health services, and attitudes towards sexuality (Robinson, Bockting, Rosser, Miner & Coleman 2002).

Objectives of the Pilot-testing Phase

The pilot-phase reported on in this document specifically aimed to:

- determine the quality of data collected with the survey questions – that is, the validity and reliability of the data;
- establish a scientifically sound survey instrument to use in the collection of nationally-representative sexual health data among young Canadians aged 16 to 24 years; and
- determine the feasibility of administering the survey through the use of a computer-assisted self-interviewing (CASI) program.

The pilot-testing phase provides support for the utility of the *Canadian Sexual Health Indicators Survey* in collecting comprehensive, national-level data on the sexual health of young Canadians. Based on the findings from this phase, the Public Health Agency of Canada will begin working collaboratively with provinces, territories and their partners in the use of this survey tool for the collection of data in order to get a pan-Canadian picture of the sexual health of young people from which to develop sexual health strategies, policies and programs. The pilot-testing of this survey tool for youth also provides the foundation for future work which would allow for a picture of the sexual health of Canadians across the lifespan.

METHODOLOGICAL OVERVIEW

After developing a draft of the survey based on interviews and discussions with experts, the research team used the Dillman (2007) four-stage method for pilot-testing and validating the survey. This method involves: 1) a review of the draft survey by experts; 2) focus groups with the target population to ensure comprehension and interpretation of the survey questions; 3) pilot-testing of the instrument with the target population; and 4) final revision and check of the instrument.

In the initial phase of this method, the survey questions were reviewed by a methodologist and by three content experts in the field of sexual health who also had expertise and prior experience in survey research. Changes were made to the survey questions based on their collective feedback. In the second phase, the revised survey was pre-tested in focus groups with young people between 16 and 24 years of age to ensure comprehension of the questions, feasibility of the research protocol and usability of the computer-assisted self-interviewing (CASI) survey system. Revisions were made to the survey prior to pilot-testing the survey with young people in the same age group. The data from this third phase were analyzed for validity and reliability. The survey was revised based on the findings from the pilot data in the final stage of the Dillman method.

Uses of the Pilot-testing Phase Data

The pilot-testing data are intended to facilitate the validation of the questions in the *Canadian Sexual Health Indicators Survey*. Analyses of the pilot-testing phase data permit interpretation of the extent to which survey questions collect the kind of data they were intended to, and how well they do so. Given the non-random sampling method and the limited number of provinces included in this phase of the study, pilot data from the *Canadian Sexual Health Indicators Survey* are not well suited to understanding the current state of or trends in the sexual health of young Canadians.

In addition to the validation use of the *Canadian Sexual Health Indicators Survey* pilot data, the findings will assist in the future collection of nationally representative data for more policy-driven interpretation. For example, since large samples are required with phenomena that are infrequent in a population, these pilot data assist in approximating how large a nationally-representative sample will need to be in order to examine linkages and trends in certain aspects of the sexual health of young Canadians.

Research Assistants kept daily journals during the data collection phase that identified key methodological challenges encountered. These qualitative data complement the quantitative findings in guiding the future collection of nationally-representative data with the *Canadian Sexual Health Indicators Survey.*

Overview of the Canadian Sexual Health Indicators Survey Methods

Participants were recruited using a purposive, non-random sampling design. Sampling was targeted along the following lines of diversity: age, gender identity, sexual orientation, race/ethnicity, school/work status, and size of area of residence. Within each of the four sites, key community organizations and places where youth congregate were used for participant recruitment to allow for the diversification of the sample along these purposive lines.

The *Canadian Sexual Health Indicators Survey* was completed by participants in pre-determined locations including universities, community organizations, shopping malls, libraries, and health clinic offices. The survey was self-administered by the participants using a CASI program. All surveys were completed voluntarily according to standards outlined in the *Tri-Council Policy Statement* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, 2005). Research protocols

were reviewed and approved by the research ethics boards (REBs) of Health Canada/Public Health Agency of Canada, University of Alberta, l'Université du Québec à Montréal, Dalhousie University, and Options for Sexual Health (British Columbia). This multi-institutional ethics review ensured that the research protocol was one that protected the participants and provided support to them following the survey, should they have required it.

Response rates could not be calculated given the sampling design; however the 1185 responses provided a large enough sample to perform detailed analyses of the quality of the data. Analyses were conducted to assess the content validity (do the data measure what they are intended to), inter-item scale reliability (how well does each item measure a concept), criterion validity (to what extent are the data related to other comparable reference data), construct validity (to what extent data elements that should be correlated, are correlated), and test-retest reliability (to what extent similar data gathered at different points in the survey are correlated). Missing values analyses were conducted to assess the quality of data in each survey question, as well as to uncover troublesome questions.

ORGANIZATION OF THE REPORT

Section II provides details of the methodological design of the study including sampling design, focus testing of the survey, participant recruitment, and collection of pilot-testing data. This section includes a description of the CASI system used to administer the survey to participants. This section concludes with a description of the analytic procedures used in validating the survey.

Results are presented in Section III beginning with those from the focus testing of the survey. Findings from the quantitative analyses of the pilot data begin with a description of the sample and discussion of missing values, followed by a review of findings from univariate descriptive statistics. Results from the various techniques to determine validity and reliability of data comprise the remainder of this section. Detailed tables accompany the results of each type of quantitative analysis.

Where possible, results from the qualitative analyses of Research Assistants' journals are used to complement the statistical analyses of the pilot data. A discussion of remaining themes arising from the analyses of the qualitative data concludes Section III.

Section IV concludes the report with a synthesis of the findings presented in the previous section, and a discussion of the implication of the findings, particularly with respect to the validity and reliability of the *Canadian Sexual Health Indicators Survey*. Recommendations for improving the quality of data yielded with the survey are also discussed.

II. METHODOLOGY

INTRODUCTION

This section of the report provides the methodological details for the *Canadian Sexual Health Indicators Survey*. In particular, it provides details on focus testing of the survey, sampling and data collection protocol, and data analysis.

FOCUS TESTING

Before collecting pilot testing data, focus tests on the survey were conducted to refine the questionnaire, to test the feasibility of the research protocols, to test the usability of the CASI system, and to determine data quality. Specifically, the purpose of the focus groups was to ensure that the question wording was appropriate and comprehensible to the target population, that the survey had a logical flow, and that the computer-assisted survey system was user-friendly.

The focus testing sample was a purposive convenience sample. Researchers contacted local community organizations that either served diverse populations of youth along age, gender, socioeconomic status, and racial/ethnic identity lines or that served specific hard-to-reach populations including sexual minority, gender variant, and out of school youth. The final sample was chosen among willing participants who were clients of these organizations. The intent was to maximize the diversity of the focus testing sample to ensure that the survey is comprehensible to the widest variety of young people.

The survey was focus tested in February 2010 with six groups of between four and seven participants of the same gender, for a total sample of 32 young people between the ages of 16 and 24 years. The six focus groups were equally split between Quebec and British Columbia. One focus group in each of the provinces was conducted with all sexual minority, same-gender participants. In previous research using focus groups to study sexuality among youth, participants have admitted to feeling restrained in the presence of others in the group (Wight, 1994). To minimize these feelings, the literature suggests mid-sized, same-gender group composition (Charlesworth & Rodwell 1997; Vaughn, Schumm & Sinagub 1996). Focus groups were conducted in English in British Columbia and in French in Quebec. Each participant was compensated $25 for participating in discussions lasting between 45 and 90 minutes, calculated based on the minimum wage in the study provinces and the estimated average time taken to complete the survey and the discussions.

Focus testing of the survey used the procedures intended for the full pilot survey. Upon arrival, Research Assistants greeted focus groups participants and went through the consent procedure with each of them. A consent package was prepared in advance for each participant, containing an information letter and a consent form (see Appendix A). The Research Assistants asked participants to read the consent form, reviewed the form's content with them, and witnessed their signature of the form.

Following the consent procedure, participants were taken to a room where private computers were set up. Each participant was logged into the survey system using a unique username and password, and was explained the functioning of the system. Participants took between 20 and 60 minutes to complete the survey.

Immediately following completion of the survey, participants were taken to a room where the focus group discussions were held. For each of the focus groups, one moderator facilitated the discussion while another made observational jot notes to complement the audio-recording of the session. Moderators were chosen for their experience in interviewing young people and their knowledge of the area of sexual health. Some moderators were university students or research associates in a university setting, and others worked for community organizations that served youth. To ensure consistency in the topics covered

across focus groups, moderators were given a focus group discussion guide that included prompts for discussion, details on the role of the moderators, and the importance of setting ground rules, making the environment safe for participants to engage in discussion, and being respectful and non-judgemental (see Appendix B). The discussion guide reflected the goal of the focus groups in determining whether the survey was understandable and whether the survey administration system was user-friendly. Participants were asked to reflect on the survey content and on their experience of taking the survey on the computer system. The discussion guide was designed to provide prompts for discussion rather than be used as a rigid structure for the discussions. Moderators were also given a manual that outlined the background and purpose of the research, the role of the Research Assistant, protocols for obtaining consent and administering the survey, and protocols for handling distressed participants. At the conclusion of the focus group, participants were provided with $25 compensation and a list of local community resources to follow up with, should they be distressed by any of the survey's content, or require additional information.

Audio tapes of the focus group discussions were reviewed by the research teams in British Columbia and Quebec. Quantitative data from the focus groups were also analyzed for response rates and missing values on individual questions. Recommendations about specific items and sections of the survey were reviewed by the full research team and revisions were made to the instrument to create the version of the survey used to collect pilot data. Revisions are described in greater detail in Section III and include re-wording of questions and response categories, deletion and addition of questions, and re-ordering of sections of the questionnaire. Changes were also made to the functionality of the computer-assisted survey software based on the focus group discussions. The final version of the survey and computer-assisted survey system were translated from English into French by the Translation Bureau of the Government of Canada.

PILOT SAMPLING

The *Canadian Sexual Health Indicators Survey* collected data between April and June 2010, from young people aged 16 to 24 years who were living in Canada at the time. The survey collected basic demographic information, in addition to information on access to and provision of sexual health education; access to and use of sexual health services; pregnancy and pregnancy outcomes; testing and treatment for sexually transmitted infections; sexual orientation; sexual satisfaction; attitudes towards sexuality; sexual functioning; relationship experiences; experience of sexual coercion and sexual violence; and sexual behaviour.

Target Population

For this pilot phase of the survey, the target population consisted of young people between the ages of 16 and 24 years inclusive, who visited at least one of the targeted community organizations, institutions, or public spaces in British Columbia, Alberta, Quebec, and Nova Scotia (see Appendix C for full list of recruitment locations).

Sample Design

The sample for this pilot study was a purposive, convenience sample which attempted to maximize the diversity of participants regarding age, gender identity, sexual orientation, race/ethnicity, school/work status, and size of area of residence. Within each province, key community organizations and places where youth congregate were used for participant recruitment to allow for the diversification of the sample along one or more of these purposive lines. Participants were self-selected volunteers. In recognition of the time required to complete the survey, participants were compensated $15, calculated in the same manner as the compensation for focus group participants.

Places from which participants were recruited included youth drop-in centres, health centres, universities, colleges, CEGEPs (Quebec only), counselling service centres, employment centres,

sexual minority support centres, and shopping malls. Each venue was contacted by a member of the research team to inform them about the project and our interest in recruiting participants from their establishment. An executive staff member within each establishment was asked to provide their signed consent and permission for the project team to engage in the various recruitment strategies on their premises.

In order to conduct various subgroup analyses with reasonable precision, a total of 1200 respondents (300 per province) would be needed. Based on the above considerations and to reach school-aged participants prior to the start of summer vacation, data collection began in early April 2010 and carried on until the end of June 2010, with a total participant recruitment of 1300[3] .

Recruitment Techniques

Participants were recruited within organizations both directly and indirectly. Indirect recruitment techniques included the display of recruitment posters (see Appendix D), advertisements on organizations' websites, mass email invitations, and by word of mouth (snowball sampling).

Direct recruitment techniques involved face-to-face recruitment of participants by Research Assistants who were on the premises of the organizations during select hours of the day. In the direct recruitment of participants, Research Assistants introduced themselves as someone who was working on a research project being conducted by the Public Health Agency of Canada, the University of Alberta, l'Université du Québec à Montréal, Dalhousie University and Options for Sexual Health in British Columbia. The Research Assistants informed participants of the purpose of the research and what would be done with the data. The Research Assistants indicated that if participants were between the ages of 16 and 24 years of age, they could participate in a confidential survey that would take approximately 45 minutes of their time. Participants were also given a brief outline of what the survey content covered and were told that they would be given $15 cash to compensate them for their time. Interested participants were either offered the opportunity to participate in the survey immediately or were given information regarding the dates, times and locations for participation in the near future.

SURVEY ADMINISTRATION AND DATA COLLECTION

Staffing and Training

Trained Research Assistants were responsible for administering the *Canadian Sexual Health Indicators Survey*. Survey administration training was developed by the research team and consisted of a training manual, a Webinar training session on the computer-assisted survey system, and a training workshop for Research Assistants at each provincial site. Specific attention was made in the manual and training sessions to consent procedures, survey administration protocol, follow-up with participants regarding upsetting survey content, and answering questions about the survey. Training materials were provided in both English and French. A total of 20 Research Assistants completed training on the administration and collection of pilot survey data.

Data Collection Protocol

Research Assistants were assigned to work on participant recruitment and data collection from April to June 2010. Data collection took place on both weekdays and weekends, typically between the hours of 9am and 9pm local time.

The surveys were administered in pre-determined locations, including youth drop-in centres, health centres, university campuses, college campuses, CEGEPs (Quebec only), counselling service centres, employment centres, sexual minority support centres, and shopping malls (see Appendix E for a full list of survey administration locations).

[3] Since the estimated sample size was 1200, more participants were recruited to the study to account for incomplete data from some participants.

Participants were greeted by the Research Assistant and provided with a consent package. This package included an information sheet as well as a consent form (see Appendix F). The Research Assistant provided each participant with the opportunity to read the package on their own, and then reviewed the content with the participant to ensure that they understood that their participation was voluntary, they could terminate their participation at any time and their responses would be anonymous since no personal identifiers were gathered. The Research Assistant cautioned each participant that the survey asked questions about sensitive subjects that may bring up distressing feelings or memories. Participants were provided with the opportunity to ask any questions regarding the research and/or their rights before signing the consent form. The signed consent forms were placed in locked envelopes and the participant was told to keep the information sheet for their records.

Consenting participants were led to established computer terminals or laptops with the survey administration login and password website. The Research Assistants explained to participants how the CASI system worked and logged each participant into the system with a unique username and password. Usernames and passwords were assigned randomly and could not be linked to specific participants.

Participants completed the survey on their own in one sitting. Once participants had terminated their participation, they were again greeted by the Research Assistant. The Research Assistant thanked them for their time and referred to the potential for some questions to elicit distressing feelings or memories for the participant. Research Assistants then provided participants with the list of community resources in their area and encouraged them to contact any of the resources if they needed anyone to talk to about these feelings or memories, or if they wanted information about sexual health. Participants were also provided with $15 for their participation at that time.

Computer-Assisted Self-interviewing (CASI) System

All surveys were self-administered by the participants using a CASI system. This system was developed by The Learning Bar based upon a similar system developed for a project with the University of Brunswick, called "Tell Them From Me" (TTFM). The TTFM system was specifically designed and tested with over 100,000 school-aged youth. It features bright colours, clearly marked icons, and youth-friendly pictures. The survey system handles over 100 different languages and various survey question formats including matrix style questions, Likert scales, and multiple response opportunity questions. A clearly labelled skip arrow allows participants to skip over any question they choose not to answer.

The survey system was housed on a secure website. Each participant was logged into the system with a unique, randomly-assigned username and password. The system did not collect any identifying information from participants. This login system ensured the anonymity of the participant and verified that each participant was engaged in the study on only one occasion. Each username and password combination was only valid once, and was valid only for a specified period of time (24 hours). In order to control the direction and flow of the survey and to prevent participants from self-navigating through the survey, the system prohibited participants from going backwards or reloading pages of the survey.

To ensure that only individuals between the ages of 16 and 24 years participated in the survey, the system used the participants' year and month of birth as a marker. The system terminated the individual's participation in the study if they were outside of this age range.

Once participants reached the end of the survey, data were transmitted by secure server line technology to a private server located in Toronto, Ontario. This technology is similar to that used by

banks and credit lending companies. Information from the participants' computer terminal is encoded to make it meaningless if intercepted by a third party during transmission to the server.

To measure progress in meeting established purposive sampling goals, a reporting and monitoring function was built into the survey system. A series of reports were generated on a bi-weekly and monthly basis during the data collection period. The reports provided information on response rates and provided summary statistics on select demographic characteristics of respondents. The reports compiled data from all surveys uploaded in real time. Changes were made to types of recruitment locations on the basis of these reports to ensure sample sub-group targets were met.

RESEARCH ETHICS

Research Ethics Boards' Approvals

This research adhered to the ethical guidelines to protect research participants and to guide researchers, outlined in the *Tri-Council Policy Statement* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, 2005). When a research team is conducting research at multiple institutions and/or across provincial borders, the current model of ethics in Canada requires a prospective ethics review by each institutional REB at the local level (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, 2005; Gold & Dewa 2005).

Ethics approval for this project was sought separately from REBs at the Public Health Agency of Canada, as well as each of the four local institutions (University of Alberta, l'Université du Québec à Montréal, Dalhousie University and Options for Sexual Health). The procedure involved first seeking simultaneous approvals from the REBs at the Public Health Agency of Canada, as the national funding organization, and from the University of Alberta with which the Principal Investigator was affiliated. Approvals from the remaining three REBs were sought once approvals from these initial two applications were granted.

Though each REB required the completion of an application form unique to its committee, the essential information required was consistent across all boards. The information contained in each application included:

- the background and rationale for the project;
- the protocol for the project (who is involved, what is being studied, who is being studied, how is it being studied);
- potential harmful effects or hazards for research participants as a result of the protocol;
- steps taken to minimize the potential for harm to the participants;
- steps taken to inform participants about the nature of the research and their rights; and
- potential gain for individuals participating in the study.

Each REB also received a copy of all materials being used throughout the study including recruitment posters, consent and information letters for participants, resource lists, Research Assistant training manual, focus group discussion guide, and survey.

Key Ethical Considerations

There were several significant ethical considerations that framed this research because of the sensitive nature of the subject matter, the computer technology being used, and the vulnerability of the population being studied.

VOLUNTARY, CONSENSUAL PARTICIPATION

Since the target population for this study were young people, some of whom were under the age of the majority and/or may experience regular exploitation by adults, it was important that the research protocol did not exploit or coerce participants in any way. Survey administration sites were selected to avoid locations where participants were less likely to

be able to voluntarily consent (e.g., classrooms, detention centres) to avoid the potential for coercion. Research Assistants administering the surveys were likewise not individuals perceived to be in a position of authority (e.g., teachers).

The survey administration protocol involved a detailed consent process to ensure that participants were informed of their rights and any potential harm, and had multiple opportunities to decline participation in the research based on this information. Participants were given information letters detailing what would be expected of them as participants, what their rights were, how they might benefit from the study, and what potential harm they might experience as a result of their participation. Participants were provided two opportunities to decline participation from the study after receiving this information. One opportunity was provided in the presence of the Research Assistant when the consent form was being signed. The other was provided to participants in private after logging on to the computer-assisted survey administration system. This second opportunity was meant to ensure that those who felt uncomfortable declining participation in the presence of the Research Assistant had the opportunity to do so in private.

PREVENTING DECEPTION

The five institutional REBs provided approval for this project to study participants as young as 16 years of age without parental consent. Therefore, it was particularly important to identify and deny participation in the study to anyone younger than 16 years of age. After consenting to participate within the computer-assisted survey system, participants were required to provide their month and year of birth. Based on this information, the system automatically declined participation of anyone outside of the target age range (16 to 24 years). The system declined participation to 26 participants based on their age. Eleven of these participants were under the age of 16 years, and 15 participants were over the age of 24 years.

The computer-assisted survey system was established with mandatory username and password login for participation. Research Assistants secured these usernames and passwords and only logged in participants who consented to participate. Participants were required to complete the survey at a central location and could not take the usernames and passwords away where there would be the potential to share them with friends, family or colleagues that may be outside of the target age range.

DEBRIEFING PARTICIPANTS

The survey contained sensitive questions that could bring up distressing feelings or memories for participants around sexual violence, sexual coercion, suicide, and bullying. Whatever the source of the distress, it was important to ensure that each participant had the opportunity to be debriefed by the Research Assistant immediately following their termination of the survey. Each participant was reminded of community resources in their area to help them should they feel distressed or wish to obtain additional information. Participants were given a list of these resources and contact numbers to take away with them.

PROTECTING PARTICIPANTS' PRIVACY

The collection of data through a computer-assisted survey system required attention to a specific set of issues regarding security of data. With this system in particular, which was housed on a secure website and which transmitted the data via the internet, there was a small but real possibility that the data may be intercepted by a third party. In order to minimize this risk, the data were encrypted (encoded) in order to be meaningless if intercepted while being uploaded from the participant's computer terminal to the secure, private server that housed the data.

The research protocol also required participants to complete the survey questions in a fixed order within a specified period of time and login combinations expired after 24 hours. Participants could not self-navigate through the survey by using the

'back' or 'reload' buttons on their internet browser. These safeguards ensured that once an individual terminated their participation in the study, a third party could not login using the same login information and navigate through a participant's survey to view their responses to the questions.

Key Methodological Change

Throughout the survey administration period, Research Assistants used field notes in journals to report and reflect upon significant methodological and/or ethical issues encountered. These notes were used to take account of any ethically important moments in the research that would require a revision of the research protocol.

One ethically important moment occurred during the pilot-testing phase of this project that required a change to the survey administration methodology. Late in the first month of data collection, a Research Assistant was administering the survey at a youth community services office. During the consent process, two youth disclosed that they had difficulty reading and indicated to the Research Assistant that they wanted assistance in completing the survey. Having an individual present and able to see participants' responses during the survey was not part of the original research protocol due to the sensitivity of the subject matter, the need to provide participants with privacy and confidentiality, and the potential to influence answers. One of these participants was particularly adamant that they would like the help of a reader that they themselves identified and did not want to be denied participation from the survey because of their disability.

This event led to a revision in the protocol that was approved by REBs and took effect in the last two weeks of data collection. The revised research protocol was geared to better accommodate individuals who self-identified as having a disability that caused them to have difficulty reading on their own. In the revised protocol, during the consent process, the Research Assistants asked each participant if they could read on their own or if they had a disability that prevented them from doing so. Those who indicated they could not read, or that they had a disability that prevented them from reading, were advised by Research Assistants that they could have an assistant (a 'Scribe') read the questions and response choices out loud to them. The participants were told to identify a Scribe with whom they felt comfortable sharing their responses. During this consent process, the chosen Scribe was asked to sign a confidentiality agreement indicating their agreement to keep all of the information disclosed by the participant confidential. Individuals who required the assistance of a Scribe completed the survey in a private room with only themselves and their Scribe present. Participants using the assistance of a Scribe were assigned unique usernames and passwords to allow these data to be analyzed separately. However, as a result of the late approval of this revised methodology by the REBs, only one participant self-identified as requiring the assistance of a Scribe prior to the completion of data collection.

DATA ANALYSIS

Data Preparation

The survey data collected were encoded and stored in SPSS 16.0 for Windows file format (SPSS, 2008). All data analyses were conducted using this statistical software package.

Initially, the data were cleaned and prepared for analysis. Descriptive statistics (e.g., frequency distributions, cross-tabulations, graphs) were run on all variables to screen the data for anomalies, and to assess the proportions of non-response and extent of non-response bias. Descriptive statistics were also run on variables to screen for violation of assumptions of normality and to ensure sufficient heterogeneity in responses.

The computer-assisted survey system was designed with numerous skip patterns to minimize the proportion of non-response to questions. Missing data for each of the survey questions were analyzed for magnitude and for non-random patterns. The accuracy of the skip patterns was also assessed by ensuring that those who qualified for a skip pattern did not have data for subsequent questions impacted by the skip patterns. Where necessary, data were cleaned to maintain the integrity of these skip patterns.

Finally, many of the items in the questionnaire allowed for respondents to specify an "other" response. Qualitative data from these responses were used to quantitatively code responses to similar pre-existing categories. Where responses did not align with pre-existing categories, data remained coded as an "other" category.

Data Analysis

Validation of the survey was conducted in seven major steps: 1) descriptive statistics (frequency distributions, mean, median, standard deviation, graphical distributions); 2) multi-trait factor analysis to assess the convergence and discrimination of items into distinct scales; 3) exploratory and confirmatory factor analyses; 4) inter-item scale reliability analyses; 5) bivariate correlations, chi-square tests, and independent samples t-tests to test relationships between theoretically-related concepts; 6) test-retest reliability analysis of items asked at different points in the survey; and 7) inter-rater reliability analyses between English and French survey data. Each of steps one through six was conducted first with the full sample. The analyses were then re-run three times to compare subgroups of the sample by: a) gender (male, female), b) age (16-18 years, 19-24 years), and c) size of area of residence (rural, urban).

The first four steps of the analyses assess the content validity of the survey data. Content validity refers to the extent to which data measure what they intend to. During the first step, frequency distributions of each variable, along with descriptive statistics, explored the distribution of responses on individual items, including the proportions of respondents who did not respond to individual survey questions. Particular attention was paid to items where there was very little distribution among response categories and/or where there were high proportions of missing values.

In the second step, multi-trait factor analysis was run with all items from the survey thought to contribute to a scale. Table 2 presents these items by the theoretical construct they were meant to measure. This technique groups items that measure a similar underlying concept and quantifies how well each item measures the concept. The expectation is that items which theoretically measure the same concept will be grouped together and will be clearly distinguished from items which measure other concepts. Only factors with eigenvalues greater than or equal to 1.0 were considered. Both convergence[4] and item discrimination[5] criteria were used to determine which construct an item represents and how well the item represents this construct.

[4] Convergence criterion was a minimum rotated factor loaded of 0.4.

[5] Discrimination criterion was based on the factor with which each item was most strongly correlated.

TABLE 2. Theoretical constructs and related survey items

Theoretical Construct	Survey Items	
SEXUAL ASSERTIVENESS	52a	*I am assertive about the sexual aspects of my life*
	52b	*I am direct about voicing my sexual needs and preferences*
	52c	*I am the type of person who insists on having my sexual needs met*
	52d	*If I were to have sex with someone, I would tell my partner what I like*
	52e	*If I wanted to practice "safer sex" with someone, I would insist on doing so*
SEXUAL RELATIONSHIP APPROACH	50b	*I do not need to be committed to a person to have sex with him/her*
	50d	*Casual sex is acceptable*
	50e	*The best sex is with no strings attached*
	50f	*Sex between two people deeply in love is the ultimate human interaction*
SEXUAL SELF-EFFICACY Condom/protection	53b	*I feel confident in my ability to use protection on myself or my partner*
	53d	*I feel confident I could purchase protection without feeling embarrassed*
	53f	*I feel confident I could stop to put protection on myself or my partner, even in the "heat of passion"*
	53h	*I feel confident that I would remember to use protection, even if I were high*
Limit-setting	55a	*I feel confident I would be able to go out with someone without feeling obligated to engage in sexual activity*
	55b	*I feel confident I would be able to choose when and where to engage in sexual activity*
	55d	*I feel confident I would be able to refuse sexual activity I'm not comfortable with*
Communication	53c	*I feel confident in my ability to discuss protection usage with any partner I might have*
	53e	*If I or my partner didn't have protection, I feel confident in my ability to suggest less risky activities, even in the "heat of passion"*
	53g	*I feel confident in my ability to suggest using protection with a new partner*
	53i	*I feel confident I could bring up the topic of protection with my health care provider*
	53j	*I feel confident I could easily ask my partner if s/he had protection (or tell* them that I didn't)
	54a	*I feel confident I could ask a doctor or health care provider specifically for HIV testing*
	54b	*I feel confident I could ask my partner to get tested specifically for HIV*
	54c	*I feel confident that I could ask my doctor or health care provider specifically for STI testing (testing for sexually transmitted infections)*
	54d	*I feel confident I could ask my partner to get tested for STIs*
	55c	*I feel confident I would be able to say to someone how s/he can give me sexual pleasure*
	56a	*If I were regularly having problems becoming sexually aroused, I feel confident I could ask a doctor about it*
	56b	*If I were regularly experiencing pain during sexual activity, I feel confident I could ask a doctor about it*
	56c	*If I were regularly experiencing pain during sexual activity, I feel confident I could talk to my partner(s) about it*
	56d	*If I got a sexually transmitted infection, I feel confident I could tell my current partners about it*
	56e	*If I got a sexually transmitted infection, I feel confident I could tell my past partners about it*
	56f	*If I have questions about sexual health, I feel I could ask a teacher, health care professional (e.g., doctor or nurse), and/or other sexual health educator*
SEXUAL VIOLENCE/ COERCION	57a	*How often have you been forced to engage in sexual acts without your consent (without you wanting to do it)*
	57b	*How often have you had sexual contact without your consent with a person in exchange for money*
	57c	*How often have you had sexual contact without your consent with a person in exchange for drugs*
	57d	*How often have you had sexual contact without your consent with a person in exchange for gifts, goods, a place to sleep, food or services*
PARTNER VIOLENCE	58a	*In general, in your sexual relationships, how often does it happen that one (or some) of your partners verbally intimidates you*
	58b	*In general, in your sexual relationships, how often does it happen that one (or some) of your partners is aggressive towards you*
	58c	*In general, in your sexual relationships, how often does it happen that one (or some) of your partners insults you*
	58d	*In general, in your sexual relationships, how often does it happen that one (or some) of your partners physically hurts you*

In the third step, the data were used for exploratory factor analyses on each major construct emerging from the multi-trait analysis to determine if there were any sub-factors. With this technique, all items representing a single construct are entered into the analyses to determine whether there are any sub-factors represented by some of the items. Factor analyses were conducted with all items representing individual (sub)factors to confirm the model fit. The Kaiser rule was used to determine the appropriate number of factors to extract, such that only factors with eigenvalues greater than or equal to 1.0 were extracted. Cronbach alphas were computed for the scores of items retained for each (sub)factor in the fourth stage of the analyses. A minimum alpha level of 0.7 was used to determine the internal consistency of each scale. Scales were created where this minimum criterion was met. The relative contribution of each item to the scale was accounted for in weighting each item by their factor score in creating the summative scale.

The fifth step of the analysis assessed the construct validity of the survey data. Construct validity refers to the extent to which data which should correlate, actually do correlate with each other. Bivariate correlation, chi-square tests, and independent samples T-test techniques were used to assess the validity of the constructs.

In the sixth step, bivariate correlation and chi-square tests were used to assess the test-retest reliability of items presented at different points in the survey. Responses to the same questions should not change throughout the survey. Therefore, higher correlations between these items represent greater reliability of the data.

In the final stage of the analyses, data from the English surveys were compared to data from the French surveys with respect to the internal consistency of scales and strength of relationships between concepts. This analysis assesses the inter-rater reliability of the data. In survey data, there should not be substantial variation between participants who complete the English and French versions. Any variation may be attributed to the different wording resulting from the translation between languages and, therefore, represent a source of unreliability in the data.

III. RESULTS

FOCUS GROUP FINDINGS

Participant Profiles

Table 3 summarizes select demographic characteristics of the focus group sample. In total, 32 young people participated in the focus testing of the survey. Though the survey was focus tested in two provinces, British Columbia (n = 16) and Quebec (n = 15), one participant indicated that they live in the Northwest Territories.

There were more males (n = 21) than females (n = 10) in the sample. One participant identified as transgender female to male. The age of focus group participants ranged from 16 to 24 years, with a median age of 20. The majority of focus group participants identified themselves as non-heterosexual with about 44% identifying as gay, 13% identifying as bisexual, two individuals identifying as queer and one individual identifying as lesbian. Fewer than 20% of focus group participants reported being born outside of Canada. Participants' racial or ethnic identity varied with 63% white, 13% reporting Chinese ethnicity, 13% reporting a Southeast Asian ethnicity, two participants reporting South Asian ethnicity, and two reporting other ethnicities. Half of the participants were primarily English-speaking, 38% primarily French-speaking, and the remainder of the sample speaking other languages most often.

The majority (53%) of focus group participants resided in metropolitan areas with populations over 500,000, while about 28% of participants lived in urban and peri-urban areas with populations of between 30,000 and 500,000 and about 13% of participants lived in areas with populations below 30,000. Over half of the participants were currently enrolled in school, the majority of whom were enrolled as full-time students. The majority of participants had at least completed a high school (grade 12) education and 50% had completed CEGEP, undergraduate university, and/or college diplomas.

Focus Group Feedback

To open the focused discussions about their experience taking the survey, participants were probed for their initial reactions and feelings about the experience. The discussion was varied and reflected the following themes[6]:

TECHNICAL ISSUES

Some of the participants' overall reactions pointed to both positive aspects and limitations of the computer-assisted survey system.

Definitions: Participants in both provinces reacted very positively to the roll-over definitions. Participants commented that these clarified what was meant in a question, and taught them new terms that they didn't know before (e.g., dental dam, Two-spirit).

[6] While the themes from the focus groups have been summarized here, quotations from the participants are presented in Appendix G

TABLE 3. Overview of demographic characteristics of the focus group sample

Demographics	N (%)
PROVINCE OF RESIDENCE	
British Columbia	16 (50%)
Quebec	15 (46.9%)
Northwest Territories	1 (3.1%)
GENDER	
Male	21 (65.6%)
Female	10 (31.25%)
Transgender female to male	1 (3.1%)
MEDIAN AGE (YEARS)	20
MEAN AGE (YEARS)	20.31
SEXUAL ORIENTATION	
Gay	14 (43.8%)
Lesbian	1 (3.1%)
Bisexual	4 (12.5%)
Heterosexual	11 (34.4%)
Queer	2 (6.3%)
PLACE OF BIRTH	
Canada	26 (81.3%)
Outside of Canada	6 (18.75%)
RACIAL/ETHNIC IDENTITY	
White	20 (62.5%)
Chinese	4 (12.5%)
Southeast Asian	4 (12.5%)
South Asian	2 (6.3%)
Other	2 (6.3%)
LANGUAGE SPOKEN AT HOME	
English	16 (50%)
French	12 (37.5%)
Other	4 (12.5%)
SIZE OF AREA OF RESIDENCE	
Pop > 500,000	17 (53%)
Pop 30,000 to 500,000	9 (28%)
Pop < 30,000	4 (12.5%)
CURRENTLY ENROLLED IN SCHOOL	
Yes	20 (62.5%)
SCHOOL STATUS	
Full-time	17 (53%)
LEVEL OF EDUCATION COMPLETED	
Less than high school	8 (25%)
High School	8 (25%)
CEGEP	8 (25%)
Undergraduate university degree, college diploma, trade/vocational certificate	8 (25%)

Computer-Assisted Self-Interviewing System: Participants preferred the computer-assisted format of the survey to the typical paper surveys. They felt that their responses were more confidential on the computer than they would be on paper. However, many focus group participants found the inability to self-navigate through the survey was a major limitation of the technology. They expressed concern that they could not go backward and change responses to better reflect their experiences once they had progressed further in the survey. These participants recommended that there be a "bolded warning" at the introduction of the survey indicating that participants cannot go back to previous questions. Others did not mind that they couldn't go backwards and one participant commented that it made them more conscientious of their responses.

Several participants noted various limitations to the presentation of questions within the system and/or the layout of content on the screen. For example, some participants commented that many of the pages had too much content on them and that having to scroll down the page in these cases was problematic.

Many of the participants commented on the inability to unclick on responses once they were chosen. Once a participant clicked a response to a question, they could change their response, but could not uncheck all responses to leave the question blank.

Participants had mixed reactions to follow-up questions presented as "drop downs" once a particular response to a question was chosen. Some participants felt that questions which led to other pop-up questions were confusing. One participant indicated that they skipped these questions as a result and would prefer having two separate questions instead of drop-downs. Others found this very helpful and said it made thinking about their answers easier.

Finally, participants made comments about the progress bar at the top of each screen which indicated their progress through the survey by percentage. Some participants found that knowing how much more of the survey they had to get through was encouraging while others were frustrated by the progress bar because it did not always increase from page to page.

SURVEY STRUCTURE AND CONTENT

Participants in the focus groups were probed as to how the structure of the survey impacted the answers they were able to provide and the responses they wanted to give. The reaction of many participants was that a number of the questions had very limiting response categories that did not fit with their experiences. Other participants were frustrated by the ability to pick only one of the response categories.

Many participants suggested that they became frustrated when presented with questions they did not feel were relevant to their experience or lack thereof, or did not reflect answers previously given earlier in the survey. These participants suggested that there be a "not applicable" category in each question so that people who have not had the experience can indicate they have not had it, instead of skipping the question entirely or being forced to choose an answer they are not comfortable selecting. Other participants suggested that skipping or filtering questions would ensure that they were not asked questions which were not applicable.

Repetitive questions were also the subject of comments for many of the participants and in commenting on their frustration, some of the participants suggested that a reorganization of the questions would alleviate the frustration and confusion from the repetition.

SURVEY FLOW AND ORGANIZATION

During each of the focus groups, participants were probed for their opinions of the flow and organization of the survey, generating mixed reactions. Some participants suggested that there was a good progression from general questions to more specific questions in the survey, and that the overall flow was smooth. Other participants suggested that the flow was disconnected, confusing, and jumpy. For example, some participants suggested that the section on sexual health services and sexual health education should be moved earlier in the survey so that all of the less personal questions are at the beginning.

Participants were also probed for their reactions to the language and tone of the questions. The youth commented that while some of the questions were straightforward, many have confusing wording that was difficult to understand and that the level of language was not appropriate for young people.

In the francophone focus groups, the translation of terms from English to French was also identified as problematic by many of the participants. For example, participants commented on the inappropriate gendered use of terms and the inconsistent use of terms for the same concept. Most notable, in questions regarding their own personal experiences, participants commented that the French terms used were extremely vulgar and offensive.

Participants in both the English and French focus groups commented that the language and tone of the questions made them feel judged.

Finally, focus group participants commented that recalling the information required in many of the questions was very difficult for them. The older youth commented that it was particularly difficult for them to recall details of their sexual histories, including the age at which they first engaged in a sexual act and the number of partners with whom they had engaged in these acts in their lifetime. Participants recommended that, in these cases, either age ranges or ranges for the number of partners would aid their memory.

MISSING CONTENT

The focus group facilitators prompted participants to discuss any relevant issues, activities, or events going on in their own or their friends' sexual lives that they did not see reflected in the survey, but which they think would be important to include. Most of the participants felt that the important aspects of young people's sexual lives were reflected in the survey. However, some participants suggested adding the following to the survey:

- questions on sexual compulsion or pornography dependency
- questions on the influence of the media and on sexual stereotypes
- questions on the ages of sexual partners and age gaps between sexual partners
- questions on how pregnancy and parenthood affect one's sexual life
- roll-over definitions for several additional terms (e.g., HPV, specific STIs)
- more choices regarding types of relationships
- more choices regarding sexual identity
- more information for participants at the end of the survey (e.g., birth control, services, etc.) including a list of links and resources
- encouragement to the participant throughout the survey (e.g., a line that says "you're doing great!")

Revisions to the Survey

TECHNICAL REVISIONS TO THE SURVEY SYSTEM

In response to participants' feedback, several revisions were made to the computer-assisted survey system itself. Though participants expressed frustration stemming from the inability to self-navigate through the system, this function was not added due to ethical concerns expressed in Section II of this report and technical limitations. In lieu of this revision, however, the research team took participants' advisement into account and added the following "bolded warning" on the consent page of the survey system: "You cannot go back to questions you have already completed or skipped". The Research Assistant manual was revised to direct Research Assistants to verbally note this restriction to participants as they were logged into the system to ensure that participants were aware of this.

Participants indicated that there was too much content on some of the screens in the computer-assisted survey system, which caused them to have to scroll downward on pages. The layout of questions on the screens of the system were streamlined and repositioned to be better spaced. In the revised system, only one or two questions appear on a screen.

The inability to uncheck all responses in a question, once one had been selected, caused participants much concern. This functionality was added to the computer-assisted system for the collection of the pilot data. Participants were able to change response choices within a question and uncheck all response choices to leave a question blank.

Some participants experienced confusion as a result of the drop-down follow-ups to certain questions within the survey. These were follow-up questions that would appear if participants selected a certain response choice within a question, which asked for details about their response. These drop-downs were kept within the computer-assisted system, however, their layout was altered to be clearer, more visually appealing and well-spaced.

Finally, participants indicated that the lack of movement on the progress bar at the top of each screen, as they moved between screens of the computer system, was discouraging for them. The lack of apparent progress between screens was a result of the calculation of progress based on a percentage of questions completed out of the total number survey questions. Since there were over 100 questions in the survey and since some screens had only one question, there were points in the survey where the percentage did not increase across pages. With the deletion of some questions based on participants' feedback on the survey's content, there are fewer than 100 questions in the survey, and the progress bar increased across each of the system's screens.

REVISIONS TO THE CONTENT OF THE SURVEY

Participants in the focus groups felt limited by response categories that were not exhaustive enough to fit their experiences and/or by the inability to pick more than one of the response categories for certain questions. In the revision of the survey, response categories were added to questions and several questions were revised to allow participants to indicate all response choices that apply to them. The questions revised were those identified by participants in the focus groups as particularly problematic.

To address the feedback that participants felt some questions were not relevant to their experience, 'not applicable' categories were added to some of these questions as per their suggestions. Skip patterns based on participants' responses to earlier questions in the survey were added where possible. In a few cases, filter questions were added to the survey in order to make these skip patterns possible. The result was that participants in the pilot study were not presented with questions that seemed irrelevant based on responses to earlier questions in the survey. Additionally, they were able to indicate that questions were not relevant for them by choosing a 'not applicable' category.

Interestingly, some of the questions identified as "repetitive" or similar by the participants were actually meant to gather different data on the same concept. The wording of these questions was changed to make these distinctions much more apparent to participants in the pilot phase. The survey content was also reorganized so that these questions immediately follow each other in sequence as was suggested by participants in the focus groups. Other repetitive questions were intentionally included in the survey, and spaced at different points in the survey, so as to test the reliability of the data. These questions were neither reworded nor moved in the survey so that the ability to determine the reliability of data was retained.

Focus group participants identified sections of the survey that seemed misplaced, disconnected or choppy in flow. Heeding their suggestions, the entire section on sexual health services and sexual health education was moved to immediately following the introductory demographics section. The most sensitive questions on sexual experiences were moved to the final section of the survey. Questions within the remaining sections were reordered so that the flow of questions was logical and began with the least sensitive.

The language of both the English and French versions of the survey was revised in order to be clearer, more concise, less vulgar and offensive, and less judgemental. In addition, roll-over definitions were added for some of the terms that focus group participants identified as confusing.

Finally, participants indicated that more information for participants at the end of the survey, including a list of links and resources, was something that would be helpful. The list of resources that was given to focus group participants was expanded upon to include more services.

PILOT TEST FINDINGS

Sample Description

Completion times for the survey ranged from approximately 10 minutes to 90 minutes. The average (mean) length of time to complete the survey was just under 27 minutes. Table 4 summarizes select demographic characteristics of the pilot-test sample. The final sample consisted of data from 1185 participants[7]. About 77% of the sample completed the survey in English and 15% completed the survey

[7] An initial 1300 participants were recruited to the pilot study and logged into the survey administration system. From these, 60 participants were removed from the data set because they fell outside of the target age range and/or did not consent to participate during the private, online consent process. A further 54 participants were removed because of methodological irregularities including the assistance of readers or "scribes" prior to the establishment of standard protocols for this method. Following the approval of the revised methodology using scribes, one participant required this assistance. Data from this participant could not be analyzed on its own, requiring the removal of this data from the data set. The resulting valid sample size after the removal of these participants was 1185.

in French[8]. Though the majority of the sample size was fairly evenly distributed among the four pilot provinces (British Columbia, Alberta, Quebec and Nova Scotia), about 3% of the sample reported living in other provinces including New Brunswick (n = 4, 0.3%), Northwest Territories (n = 1, 0.1%), Ontario (n = 25, 2.1%), Prince Edward Island (n = 4, 0.3%), and Saskatchewan (n = 4, 0.3%).

Participants were asked to indicate all genders with which they identified. Just under half of the sample identified as male (45%) and just over half (52.9%) identified as female. A minority of the sample also identified with other genders including transgender male to female and female to male (0.7% and 1.4% respectively), two-spirit (1.4%), genderqueer (1.2%), and intersex (0.1%). Just under 1% of the sample identified as 'other' gender. The age of participants ranged from 16 to 24 years, with a mean age of 19.65 (SD = 2.359). The majority of participants identified as heterosexual (76.2%), with about 4.6% identifying as gay or lesbian, 8.9% identifying as bisexual, 1.3% identifying as Two-spirit, 2.7% identifying as queer, and less than two percent identifying as either asexual or an 'other' sexual orientation. About 2% indicated they were not yet certain of their sexual orientation.

Fewer than 15% of participants reported being born outside of Canada. Participants were able to select more than one racial or ethnic identity with 71.7% selecting a white identity, 7.6% Chinese, 10.3% First Nations, 5.2% Métis, 4.9% Black and 14.3% indicating various other ethnicities. Approximately 82% of participants were primarily English-speaking, 23% primarily French-speaking, and 19.8% of the sample speaking various other languages most often.

The majority (68.4%) of participants resided in urban areas and 27.6% of participants lived in rural areas. About 74% of participants were currently enrolled in school, the majority (64.3%) of whom were enrolled as full-time students. The majority (58.8%) of participants had at least completed a high school (grade 12) education and about 20% had completed CEGEP, undergraduate university, and/or college diplomas. Just over half (51.2%) of the sample were not currently in the labour force, while about 12% were working full-time and 36% were working part-time.

TABLE 4. Overview of demographic characteristics of the pilot-test sample

Demographics	N (%)
PROVINCE OF RESIDENCE	
British Columbia	349 (29.5%)
Alberta	283 (23.9%)
Quebec	247 (20.8%)
Nova Scotia	268 (22.6%)
New Brunswick	4 (0.3%)
Northwest Territories	1 (0.1%)
Ontario	25 (2.1%)
Prince Edward Island	4 (0.3%)
Saskatchewan	4 (0.3%)
GENDER	
Male	533 (45.0%)
Female	627 (52.9%)
Transgender male to female	8 (0.7%)
Transgender female to male	16 (1.4%)
Two-spirit	16 (1.4%)
Genderqueer	14 (1.2%)
Intersex	1 (0.1%)
Other	9 (0.8%)
MEAN AGE (YEARS)	19.65
MEDIAN AGE (YEARS)	19
SEXUAL ORIENTATION	
Heterosexual	903 (76.2%)
Gay or Lesbian	54 (4.6%)
Bisexual	106 (8.9%)
Two-spirit	15 (1.3%)
Queer	32 (2.7%)
Asexual	6 (0.5%)
Other	11 (0.9%)
Not yet sure	26 (2.2%)
PLACE OF BIRTH	
Canada	1012 (85.4%)
Outside of Canada	170 (14.4%)

[8] The computer-assisted survey system did not collect information on the language of the survey for the first 90 participants, which does not allow for a calculation of language on the total sample of 1185.

TABLE 4. Overview of demographic characteristics of the pilot-test sample

Demographics	N (%)
RACIAL/ETHNIC IDENTITY	
White	850 (71.7%)
Chinese	90 (7.6%)
Black	58 (4.9%)
First Nations	122 (10.3%)
Métis	62 (5.2%)
Other	170 (14.3%)
LANGUAGE SPOKEN AT HOME	
English	970 (81.9%)
French	273 (23.0%)
Other	234 (19.8%)
SIZE OF AREA OF RESIDENCE	
Urban	811 (68.4%)
Rural	327 (27.6%)
SCHOOL STATUS	
Full-time	762 (64.3%)
Part-time	113 (9.5%)
Not currently in school	297 (25.1%)
LABOUR FORCE PARTICIPATION	
Full-time	141 (11.9%)
Part-time	427 (36%)
Not currently in the labour force	607 (51.2%)
LEVEL OF EDUCATION COMPLETED	
Less than high school	476 (40.6%)
High School	452 (38.1%)
CEGEP	48 (4.1%)
Undergraduate university degree, college diploma, trade/vocational certificate	189 (15.9%)
Graduate degree (e.g., Master's Doctorate)	8 (0.7%)

Missing Values Analysis

The proportion of missing values on individual items in the survey ranged from 0.3% to 31.1%; however, the variable with over 30% missing values was an extreme outlier. The majority of variables (85%) had less than 10% missing values. The mean proportion of missing values on individual items was 6.71% and the median proportion was 6.2%. Patterns among missing values on individual variables were analyzed using the regression procedure. The proportion of missing values on each of the items was regressed against its question number as an indicator of its placement in the survey to assess whether there was a linear pattern to the missing values. The results of this regression suggest that the question number was moderately positively correlated with the proportion of missing values on the item ($R = 0.57$, $p \leq 0.0001$). Therefore, the proportion of missing values increased as the survey question number increased. This suggests that there were higher proportions of missing values found close to the end of the survey and the most complete data were gathered at the beginning of the survey.

Feedback obtained from Research Assistants' recording of participant comments provides some insight into the increased missing data toward the end of the survey. The Research Assistants' journals suggested that participants felt that the survey was "too long" and that some participants tended to skip questions at the end.

The proportions of missing values were not significantly different between younger participants (16-18 years) and older participants (19-24 years) or between participants living in rural and urban areas. There were significant differences in the proportions of missing values among male and female participants; however, there are no discernable patterns to these differences. Greater proportions of males had missing values on some questions, while greater proportions of females had missing values on others.

Content Validity

DESCRIPTIVE STATISTICS

Content validity refers to the extent to which the data measure what they were intended to measure. Frequency distributions were initially run to assess the distribution of responses across response categories and the proportion of participants who did not respond to individual questions. This analysis pointed to whether particular types of questions (e.g., matrix style, multiple responses, Likert scale) yielded the kind of data they were designed to obtain. These distributions of responses also allowed for an examination of the extent to which skip patterns built into the CASI system performed as anticipated. Frequency distributions of variables which allowed participants to specify alternative responses gave an indication of the extent to which existing response categories were exhaustive. Well constructed survey questions are those which yield

minimal missing data, which have adequate variation among responses, and for which response choices are exhaustive.

The distribution of responses across response categories was adequate for statistical analysis for most variables. There were, however, several survey items where there was minimal variation in responses across categories. An examination of the specified alternative responses from many participants suggests that the response categories for several survey items were not exhaustive enough for participants to be able to select an appropriate response choice. The distribution of responses on individual items suggested that the percent of missing values on the majority of survey items was low. There were, however, 45 (out of a total 136) variables which exceeded the acceptable standard in the literature of between 6 and 8% missing data. The implications of the missing variables are discussed in Section IV.

The distribution of responses on individual questions also suggests that the style of question for the majority of survey items resulted in the information it was intended to measure. However, certain types of survey questions were not successful in yielding the intended data. Questions in which participants were required to place a check mark beside categories that applied to them did not provide analyzable data. For example, one question asked participants to check the sexual health topics on which they had been taught, and another asked participants to check the sexual health services they had received. This style of question makes it impossible to distinguish between those for whom none of the categories applied, and those who chose not to provide an answer to the question.

Another type of question required participants to indicate the age at which they first experienced a certain type of sexual behaviour and/or the number of people with whom they engaged in that type of sexual behaviour. Up to seven participants indicated that their age was zero years when they first engaged in certain types of sexual behaviour or that they had engaged in certain types of sexual behaviour with zero individuals. The ability to provide a numeric response in these types of questions yielded invalid data when participants provided a response of zero.

Additionally, matrix style questions which simultaneously ask participants about the context of three types of sexual behaviour (oral sex, vaginal sex, and anal sex) yielded unreliable and invalid data for a large proportion of participants. These matrix style questions were presented to individuals who indicated they had engaged in **at least one** of these behaviours and included a "not applicable" category for those who had not engaged in all three of the behaviours. This category, however, did not yield reliable and valid data. A large proportion of participants who indicated earlier that they had never engaged in the sexual behaviour, did not check the "not applicable" category, instead checking a category intended only for those who had the experience. Table 5 summarizes the magnitude of invalidity and unreliability among questions that were organized in the matrix style.

TABLE 5. Proportions of invalid and unreliable data among matrix style questions

Item	Proportion of invalid and unreliable data	Margin of error in estimation
In general, thinking of the age at which you first experienced the following activities with a female, indicate how ready or not ready you feel you were (oral sex).	10.7%	±2.8%
In general, thinking of the age at which you first experienced the following activities with a female, indicate how ready or not ready you feel you were (vaginal sex).	26.8%	±6.5%
In general, thinking of the age at which you first experienced the following activities with a female, indicate how ready or not ready you feel you were (anal sex).	25.3%	±13.3%
Thinking of the last time you engaged in each of the following kinds of sexual activity with a female, was your partner a…(oral sex).	28.6%	±6.65%
Thinking of the last time you engaged in each of the following kinds of sexual activity with a female, was your partner a…(vaginal sex).	25%	±8%
Thinking of the last time you engaged in each of the following kinds of sexual activity with a female, was your partner a…(anal sex).	20.9%	±17.3%
Thinking of the last time you engaged in each of the following kinds of sexual activities with a female, what type of protection did you or your partner use? (oral sex)	0.5%	0
Thinking of the last time you engaged in each of the following kinds of sexual activities with a female, what type of protection did you or your partner use? (vaginal sex)	1.77%	0
Thinking of the last time you engaged in each of the following kinds of sexual activities with a female, what type of protection did you or your partner use? (anal sex)	0.73%	0
In general, thinking of the age at which you first experienced each of the following with a male, indicate how ready or not ready you feel you were (oral sex).	23.3%	±17.8%
In general, thinking of the age at which you first experienced each of the following with a male, indicate how ready or not ready you feel you were (vaginal sex).	36.9%	±18.1%
In general, thinking of the age at which you first experienced each of the following with a male, indicate how ready or not ready you feel you were (anal sex).	36.5%	±27.1%
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, was your partner a…(oral sex).	0%	-
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, was your partner a…(vaginal sex).	0.08%	0
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, was your partner a…(anal sex).	0.08%	0
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, what type of protection did you or your partner use? (oral sex)	3.23%	0
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, what type of protection did you or your partner use? (vaginal sex)	3.95%	0
Thinking of the last time you engaged in each of the following kinds of sexual activity with a male, what type of protection did you or your partner use? (anal sex)	26.6%	0

Note: The margin of error is estimated as those participants for whom it is unknown whether or not they had ever engaged in the behaviour because they skipped the survey question which asked for this information.

The distribution of responses across questions that were affected by skip patterns built into the CASI system suggests that those who should have skipped questions as a result of a skip pattern did in fact skip those questions, in the majority of cases. In two cases (of 1185) the skip pattern failed to perform as expected.

MULTI-TRAIT FACTOR ANALYSIS

Content validity of the data was also assessed through factor analyses, which measure the extent to which individual items represent concepts they were intended to. Two types of exploratory factor analyses were run to assess the content validity of the data – multi-trait factor analysis with items representing multiple concepts and principal components analysis with only items representing individual (sub)factors to confirm the model fit.

After listwise deletion of missing data, the responses from all items thought to represent various constructs (see Table 2) were used for an exploratory multi-trait factor analysis. Principal components[9] factoring with varimax rotation was used. The Kaiser Criterion[10] was used to extract the number of factors.

The exploratory multi-trait factor analyses produced nine components (constructs) that met the Kaiser Criterion, which together explained 67% of the variance. There were no items identified on these factors with lower than 0.400 loadings. Using the convergence and item discrimination criteria, these nine constructs were identified as: (1) protection self-efficacy, (2) STI/HIV testing self-efficacy, (3) sexual communication self-efficacy, (4) sexual limit-setting self-efficacy, (5) sexual assertiveness, (6) sexual function, (7) sexual approach, (8) partner violence victimization, and (9) experience of sexual coercion.

These nine components extracted in the analyses of the full sample were also extracted for both males and females, for both younger (16-18 years) and older (19-24 years) participants, and for participants from both rural and urban areas.

PRINCIPAL COMPONENTS ANALYSIS

The next step in the validation process was to conduct separate principal components analysis on the items loading on each of the nine components in the multi-trait factor analysis. Each of these nine analyses involved the listwise deletion of missing data, principal components factoring with varimax rotation, and the Kaiser Criterion to extract the number of factors.

The principal components analysis on the items loading on "protection self-efficacy" produced two sub-factors which together explained 60.6% of the variance. All but two items loaded on the first of these two sub-factors. The two that loaded on a second sub-factor were related to participants' confidence in using protection "in the heat of passion". Cronbach's alpha was computed for the internal consistency reliability of the total scale ($\alpha = 0.883$). The Item-Total Statistics suggest that all items, including those related to protection in the "heat of passion", function well as a single concept because removing the items lowers the reliability of the scale. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The rotated factor loadings of each item on its sub-factor, and the internal consistency of the single scale are depicted in Table 6 for the full sample.

[9] Principal components analysis was chosen so as to account for all variability in variables.

[10] The Kaiser Criterion is to drop all components with eigenvalues less than 1.0.

TABLE 6. Rotated component matrix and Internal Consistency Reliability for Protection Self-Efficacy

Item	Component 1	Component 2	Cronbach's Alpha if item Deleted
If I wanted to practice "safer sex" with someone, I would insist on doing so	0.578		0.877
I feel confident in my ability to use protection on myself and/or my partner	0.745		0.868
I feel confident I could purchase protection without feeling embarrassed	0.673		0.883
I feel confident I could stop to put protection on myself or my partner even in the "heat of passion".		0.840	0.872
I feel confident I would remember to use protection even if I were high.	0.473		0.877
I feel confident in my ability to discuss protection usage with any partner I might have.	0.786		0.865
If I or my partner didn't have protection, I feel confident in my ability to suggest less risky activities, even in the "heat of passion".		0.878	0.879
I feel confident in my ability to suggest using protection with a new partner.	0.726		0.864
I feel confident I could bring up the topic of protection with my health care provider.	0.733		0.869
I feel confident I could easily ask my partner if s/he had protection (or tell them that I didn't).	0.709		0.866

Note: N = 999 (84.3%). Cronbach's Alpha for the scale = 0.883

The results from the principal components analysis on the items loading on "STI/HIV testing self-efficacy" confirmed a single concept structure which explained 64.83% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale ($\alpha = 0.897$). The Item-Total Statistics suggest that all items, except one, function well as a single concept because removing the items lowers the reliability of the scale. The following item should be noted for review and possible revision or removal from the STI/HIV Testing scale: *If I got a sexually transmitted infection, I feel confident I could tell my current partner(s) about it.* The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 7 below for the full sample.

TABLE 7. Component matrix and Internal Consistency Reliability for STI/HIV Testing Self-Efficacy

Item	Component 1	Cronbach's Alpha if item Deleted
I feel confident I could ask a doctor or health care provider specifically for HIV testing.	0.878	0.866
I feel confident I could ask my partner to get tested specifically for HIV.	0.900	0.856
I feel confident that I could ask my doctor or health care provider for STI testing.	0.903	0.859
I feel confident I could ask my partner to get tested for STIs.	0.893	0.858
If I got a sexually transmitted infection, I feel confident I could tell my current partner(s) about it.	0.631	0.924

Note: N = 1038 (87.6%). Cronbach's Alpha for the scale = 0.897

The results from the principal components analysis on the items loading on "sexual communication self-efficacy" confirmed a single concept structure which explained 67.62% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale (α = 0.839). The Item-Total Statistics suggest that all items function well as a single concept because removing the items lowers the reliability of the scale. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 8 below for the full sample.

TABLE 8. Component matrix and Internal Consistency Reliability for Sexual Communication Self-Efficacy

Item	Component 1	Cronbach's Alpha if item Deleted
If I were regularly having problems becoming sexually aroused, I feel confident I could ask a doctor about it.	0.827	0.796
If I were regularly experiencing pain during sexual activity, I feel confident I could ask a doctor about it.	0.885	0.751
If I were regularly experiencing pain during sexual activity, I feel confident I could talk to my partner(s) about it.	0.791	0.814
If I have questions about sexual health, I feel I could ask a teacher, health care professional and/or other sexual health educator.	0.783	0.818

Note: N = 1062 (89.6%). Cronbach's Alpha for the scale = 0.839

The results from the principal components analysis on the items loading on "sexual limit-setting self-efficacy" confirmed a single concept structure which explained 70.97% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale (α = 0.788). The Item-Total Statistics suggest that all items function well as a single concept because removing the items lowers the reliability of the scale. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 9 below for the full sample.

TABLE 9. Component matrix and Internal Consistency Reliability for Sexual Limit-setting Self-Efficacy

Item	Component 1	Cronbach's Alpha if item Deleted
I feel confident I would be able to go out with someone without feeling obligated to engage in sexual activity.	0.819	0.759
I feel confident I would be able to choose when and where to engage in sexual activity.	0.887	0.629
I feel confident I would be able to refuse sexual activity I'm not comfortable with.	0.819	0.751

Note: N = 1089 (91.9%). Cronbach's Alpha for the scale = 0.788

The results from the principal components analysis on the items loading on "sexual assertiveness" confirmed a single concept structure which explained 59.38% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale (α = 0.825). The Item-Total Statistics suggest that all items function well as a single concept because removing the items lowers the reliability of the scale. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 10 below for the full sample.

TABLE 10. Component matrix and Internal Consistency Reliability for Sexual Assertiveness

Item	Component 1	Cronbach's Alpha if item Deleted
I am assertive about the sexual aspects of my life.	0.796	0.782
I am direct about voicing my sexual needs and preferences.	0.869	0.748
I am the type of person who insists on having my sexual needs met.	0.684	0.820
If I were to have sex with someone, I'd tell my partner what I like.	0.790	0.784
I feel confident I would be able to say to someone how s/he can give me sexual pleasure.	0.699	0.814

Note: N = 1040 (87.8%). Cronbach's Alpha for the scale = 0.825

The results from the principal components analysis on the items loading on "sexual function" confirmed a single concept structure which explained 56.324% of the variance. The internal consistency reliability of the total scale (α = 0.603) and the Item-Total Statistics suggest that these items do not function well as a single concept. The standardized Cronbach's alpha level is below the minimum cut point of 0.7. The deletion of any one of the items would not improve the reliability of the scale enough to meet this minimum criterion. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 11 below for the full sample.

TABLE 11. Component matrix and Internal Consistency Reliability for Sexual Function

Item	Component 1	Cronbach's Alpha if item Deleted
How strong is your sex drive?	0.837	0.319
How easily are you sexually aroused?	0.791	0.460
In general when you engage in sexual activity, how pleasurable is it for you?	0.362	0.624

Note: N = 1014 (85.6%). Standardized Cronbach's Alpha for the scale = 0.603

The results from the principal components analysis on the items loading on "sexual approach" confirmed a single concept structure which explained 62.59% of the variance. The internal consistency reliability of the total scale (α = 0.696) and the Item-Total Statistics suggest that these items do not function well as a single concept. The standardized Cronbach's alpha level is below the minimum cut point of 0.7. The deletion of one of the items would improve the reliability of the scale enough to meet this minimum criterion. The following item should be noted for review and possible revision or removal from the sexual approach: *I think that the best sex is with no strings attached.* The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 12 below for the full sample.

TABLE 12. Component matrix and Internal Consistency Reliability for Sexual Approach

Item	Component 1	Cronbach's Alpha if item Deleted
I think that I do not need to be committed to a person to have sex with him/her.	0.814	0.578
I think that casual sex is acceptable.	0.849	0.496
I think that the best sex is with no strings attached.	0.704	0.715

Note: N = 1092 (92.2%). Cronbach's Alpha for the scale = 0.696

The results from the principal components analysis on the items loading on "partner violence victimization" confirmed a single concept structure which explained 77.7% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale (α = 0.904). The Item-Total Statistics suggest that all items function well as a single concept because removing the items lowers the reliability of the scale. The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 13 below for the full sample.

TABLE 13. Component matrix and Internal Consistency Reliability for Partner Violence Victimization

Item	Component 1	Cronbach's Alpha if item Deleted
In general, in your sexual relationships, how often does it happen that one (or some) of your partners verbally intimidates you?	0.893	0.869
In general, in your sexual relationships, how often does it happen that one (or some) of your partners is aggressive towards you?	0.903	0.864
In general, in your sex relationships, how often does it happen that one (or some) of your partners insults you?	0.890	0.872
In general, in your sexual relationships, how often does it happen that one (or some) of your partners physically hurts you?	0.839	0.897

Note: N = 966 (81.5%). Cronbach's Alpha for the scale = 0.904

The results from the principal components analysis on the items loading on "sexual coercion" confirmed a single concept structure which explained 68.88% of the variance. Cronbach's alpha was computed for the internal consistency reliability of the total scale (α = 0.803). The Item-Total Statistics suggest that all items function well as a single concept because removing the items lowers the reliability of the scale, with the exception of one item. Though the internal consistency of the scale meets the minimum criteria when the item is included, the following item should be noted for revision or removal from the "sexual coercion" scale: *How often have you been forced to engage in sexual acts without your consent (without you wanting to do it).* The remaining three items in the scale would measure "survival sex". The results were similar when analyses were run separately for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas. The factor loadings of each item on this factor, and the internal consistency of the single scale are depicted in Table 14 below for the full sample.

TABLE 14. Component matrix and Internal Consistency Reliability for Sexual Coercion

Item	Component 1	Cronbach's Alpha if item Deleted
How often have you been forced to engage in sexual acts without your consent (without you wanting to do it)?	0.621	0.889
How often have you had sexual contact without your consent with a person in exchange for money?	0.884	0.720
How often have you had sexual contact without your consent with a person in exchange for drugs?	0.901	0.714
How often have you had sexual contact without your consent with a person in exchange for gifts, goods, a place to sleep, food, or services?	0.881	0.706

Note: N = 1092 (92.2%). Cronbach's Alpha for the scale = 0.803

Construct Validity

Construct validity refers to the extent to which variables which would be expected to be related in the data actually are. Construct validity was assessed using chi-square tests of significance, independent samples T-tests, and bivariate correlations[11]. It is expected that, with a sample of young people aged 16 to 24 years, the level of education completed will be positively related to age. Older participants will have had the opportunity to complete higher levels of education than will younger participants. Bivariate correlation between age of respondent and the level of education completed supports this hypothesis ($R = 0.556$, $p \leq .01$). Age and level of education completed by participants are positively correlated indicating that as a participant's age increases, so too does the level of education they have completed. The separate analyses of males and females, of younger (16-18 years) and older (19-24 years) participants, and of participants from rural and urban areas yielded similar results.

Participants who indicated problems having sex, because of various medical conditions and/or disabilities were hypothesized to score lower on sexual satisfaction, sex drive, sexual pleasure and

[11] The type of analyses used to measure associations is dependent on the level of measurement of the variables being tested. This analysis followed the accepted standard whereby chi-square tests were used for two nominal level or ordinal level variables; independent samples T-tests were used to measure associations between a nominal level variable with two categories and an interval level variable, and in some cases, an ordinal level variable that could be treated as interval given its response categories and distribution; and bivariate correlations were used to measure the association between two interval level variables. Prior to conducting these tests of association, diagnostic statistics were conducted to ensure the variables did not violate any of the assumptions of the analysis being conducted.

sexual arousal survey items. Independent samples T-tests were conducted to measure the differences between the mean scores of those who did and those who did not indicate problems having sex, on each of the above items. The results are presented in Table 15 below for the full sample.

The mean scores on sexual satisfaction were 2.37 and 2.61 for those who did and those who did not indicate problems having sex, respectively. The difference between these means was significant ($p \leq .05$), which supports the hypothesis that those who indicated problems having sex have a lower average sexual satisfaction score than those who did not have these problems. The mean scores on the strength of participants' sex drive were 2.41 and 2.85 for those who did and those who did not indicate problems having sex, respectively. The difference between these means was significant ($p \leq .001$) which supports the hypothesis that those who indicated problems having sex reported a lower average sex drive than those who did not have these problems. The mean scores on the amount of pleasure typically experienced by participants were 2.91 and 3.07 for those who did and those who did not indicate problems having sex, respectively. The difference between these means was not significant ($p = 0.139$). Participants who indicated problems having sex did not report significantly different levels of sexual pleasure than those who did not report these problems. The mean scores on the ease with which participants are typically sexually aroused were 0.82 and 1.04 for those who did and those who did not indicate problems having sex, respectively. The difference between these means was significant ($p \leq .001$), supporting the hypothesis that those who indicated problems having sex also reported lower average ease of sexual arousal than those who did not report these problems.

Separate analyses of males and females, of younger (16-18 years) and older (19-24 years) participants, and of participants from rural and urban areas yielded similar results. For each of these subgroups, means scores on sexual satisfaction, strength of sex drive, amount of sexual pleasure typically experienced, and ease of sexual arousal were significantly lower for those that reported difficulty having sex because of a medical condition than for those who did not report this difficulty.

TABLE 15. Independent samples T-tests for differences between mean scores on sexual satisfaction, sex drive, sexual pleasure, and sexual arousal of those who do and do not experience problems having sex

Item	Test Group	Mean	T-test for Equality of Means
In general, even if you are not sexually active, how satisfied are you with the sexual part of your life?	No problems Problems having sex	2.61 2.37	$p \leq .05$
How strong is your sex drive?	No problems Problems having sex	2.85 2.41	$p \leq .001$
In general, when you engage in sexual activity, how pleasurable is it for you?[a]	No problems Problems having sex	3.07 2.91	$p = 0.139$
How easily are you sexually aroused?	No problems Problems having sex	1.04 0.82	$p \leq .001$

Note: [a] Those who had never engaged in sexual activity were not included in this analysis

Parallel analyses were conducted to test the differences between those who reported difficulties enjoying sex and those who did not. The hypotheses were that those who experienced difficulties enjoying sex would also report lower levels of sexual satisfaction, sex drive, sexual pleasure and ease of sexual arousal. The results of the independent samples T-tests are summarized in Table 16 below. The mean scores on sexual satisfaction were 2.42 and 2.59 for those who did and those who did not report difficulty enjoying sex, respectively. The difference between these means was not significant ($p = 0.146$). Participants who reported difficulty enjoying sex did not report lower levels of sexual satisfaction than those who did not report this difficulty. The mean scores on sex drive were 2.54 and 2.81 for those who did and those who did not report difficulty enjoying sex, respectively. The difference between these means was significant ($p \leq .05$) supporting the hypothesis that those who reported difficulty enjoying sex also reported lower sex drive than those who did not report this difficulty. The mean scores on sexual pleasure were 2.82 and 3.10 for those who did and those who did not report difficulty enjoying sex, respectively. The difference between these means is significant ($p \leq .05$), supporting the hypothesis that those who reported difficulty enjoying sex also reported lower levels of sexual pleasure than those who did not report this difficulty. The mean scores on sexual arousal were 1.63 and 0.95 for those who did and those who did not report difficulty enjoying sex, respectively. The difference between these means was not significant ($p = 0.091$). Those who reported difficulty enjoying sex did not report significantly different ease of sexual arousal than do those who did not report this difficulty.

Separate analyses of males and females, of younger (16-18 years) and older (19-24 years) participants, and of participants from rural and urban areas yielded similar results. For each of these subgroups, mean scores on the strength of their sex drive and on the amount of sexual pleasure typically experienced were significantly lower for those that reported difficulty enjoying sex because of a medical condition than for those who did not report this difficulty.

TABLE 16. Independent samples T-tests for differences between mean scores on sexual satisfaction, sex drive, sexual pleasure, and sexual arousal of those who do and do not experience problems enjoying sex

Item	Test Group	Mean	T-test for Equality of Means
In general, even if you are not sexually active, how satisfied are you with the sexual part of your life?	No problems Problems enjoying sex	2.59 2.42	p = 0.146
How strong is your sex drive?	No problems Problems enjoying sex	2.81 2.54	p ≤ .05
In general, when you engage in sexual activity, how pleasurable is it for you?[a]	No problems Problems enjoying sex	3.10 2.82	p ≤ .05
How easily are you sexually aroused?	No problems Problems enjoying sex	0.95 1.63	p = 0.091

Note: [a] Those who had never engaged in sexual activity were not included in this analysis

Participants who indicated difficulty using protection because of various medical conditions and/or disabilities were hypothesized to report using condoms[12] in lower proportions than participants who did not report this difficulty. Chi-square tests of significance were conducted to measure the difference between the proportion of participants who did and the proportion of participants who did not report difficulties using protection, on their use of condoms during last vaginal and anal sex[13]. A significantly lower proportion of participants who reported difficulty using protection reported condom use at last vaginal intercourse with a female (38.1%) than those who did not report this difficulty (62.7%, $p \leq .05$). For last vaginal sex with a male, a significantly lower proportion of participants who reported difficulty using protection reported condom use (31.8%) than participants who did not report this difficulty (59.3%, $p \leq .05$). There were no significant differences on the use of condoms during last anal sex between those who did and those who did not report difficulty using protection. These results were similar for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas.

Participants who reported using condoms within the previous 12 months were hypothesized to have significantly higher scores on the "protection self-efficacy" scale[14] than participants who did not report using condoms in the previous 12 months. Independent samples T-tests were conducted to assess the difference in mean scores on "protection self-efficacy" between participants who did and who did not report using condoms in the previous 12 months. The mean scores on protection self-efficacy were 24 and 22.13 for those who did and those who did not report using condoms in the previous 12 months, respectively. The difference between these mean scores was significant ($p \leq .001$), supporting the hypothesis that those who reported using condoms in the previous 12 months have higher scores on the "protection self-efficacy" scale than those who did not report using condoms during this period. Separate analyses for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas showed similar results. Among each of these subgroups, mean scores on the protection self-efficacy scale were significantly higher for those that reported using condoms in the previous 12 months than for those who reported not using condoms during this period.

Those who reported getting tested for STIs in the previous 12 months were hypothesized to have higher scores on "STI/HIV testing self-efficacy" than those who did not report getting tested for STIs in the previous 12 months[15]. Independent samples T-tests were conducted to test the difference in mean scores on "STI/HIV testing self-efficacy" between those who did and those who did not report getting tested for STIs in the previous 12 months. The mean scores were 15.27 and 13.93 for those who did and those who did not report getting tested for STIs in the previous 12 months. The difference between these mean scores was significant ($p \leq .001$), supporting the hypothesis that those who reported getting tested for STIs in the previous 12 months have higher scores on the "STI/HIV testing self-efficacy" scale than those who did not report getting tested for STIs during this period. Separate analyses for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and

[12] Condoms were selected as the method of protection for this analysis because it was the most frequently reported method of protection for sex with a female and sex with a male. The proportions of respondents reporting the use of other methods of protection were too low to run similar analyses.

[13] Parallel differences were not examined for oral sex since the proportion of participants using various methods of protection for oral sex were significantly lower than for vaginal and anal sex.

[14] Higher scores on the "protection self-efficacy" scale represent higher protection self-efficacy.

[15] Higher scores on the "STI/HIV testing self-efficacy" scale represent higher STI/HIV testing self-efficacy.

urban areas showed similar results. Among each of these subgroups, mean scores on the STI/HIV testing self-efficacy scale were significantly higher for those that reported getting tested for STIs in the previous 12 months than for those who reported not being tested during this period.

Similar analyses were run to assess difference in mean scores on "STI/HIV testing self-efficacy" between those who did and those who did not report getting tested for HIV in the previous 12 months. The mean scores were 15.32 and 14.04 for those who did and those who did not report getting tested for HIV in the previous 12 months, respectively. The difference in these mean scores was significant ($p \leq .001$), supporting the hypothesis that those who reported getting tested for HIV in the previous 12 months have higher scores on "STI/HIV testing self-efficacy" than those who did not report getting tested for HIV during this period. Separate analyses for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas showed similar results. Among each of these subgroups, mean scores on the STI/HIV testing self-efficacy scale were significantly higher for those that reported getting tested for HIV in the previous 12 months than for those who reported not being tested during this period.

A significant correlation was hypothesized between participants' sexual orientation, persons to whom they are attracted, and the partners with whom they usually engage in sexual activity. Chi-square tests of significance were conducted to assess the degree of association among these survey items. A significant association ($p \leq .001$) was found between participants' sexual orientation and persons to whom they are attracted. The majority of those who identified as heterosexual (84.3%) also reported being attracted only to people of the opposite sex. Among those who identified as gay or lesbian, 50% reported being attracted only to those of the same sex, and 44.4% reported being attracted mostly to people of the same sex. The responses among those who identified as bisexual and two-spirit are distributed across the three middle categories: attracted equally to both same and opposite sex (42.9%), mostly same (17.1%) and mostly opposite (38.1%) sex partners. A significant association ($p \leq .001$) was found between participants' sexual orientation and partners with whom they usually engage in sexual activity, with patterns identical to what was found for persons to whom they are attracted. A significant association ($p \leq .001$) was likewise found between persons to whom participants are attracted and partners with whom they usually engage in sexual activity. These results were similar for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas.

Criterion Validity

There are various types of criterion validity. One type refers to the extent to which the data from a new survey correlate with data from an established survey that measures the same phenomenon. Typically this is achieved by administering the two different surveys to participants simultaneously and examining the statistical correlations in the data. Criterion validity in this strict sense was not assessed in this pilot study; however, the data can be compared with findings from specific items from recent studies to get a rough estimate of the validity of the data collected.

According to findings from the 2008 Adolescent Health Survey (Smith et al., 2009), the most common age of first intercourse reported by young people in British Columbia in grades 7 through 12, is 15 years of age. In the pilot test data, we found that the median age for first vaginal intercourse with either a male or a female was just over 15 years. The Adolescent Health Survey findings also suggest that 60% of youth report using a condom the last time they had sex. In the pilot test data, we found 60.1% of participants reported using a condom the last time they had vaginal sex with a female and 55.4% reported using a condom at last vaginal sex with a male. Slightly lower proportions reported

using a condom at last anal sex with a female (50%) and male (46.4%). Finally, the Adolescent Health Survey findings indicate that 5% of youth used the emergency contraceptive pill (the "morning after" pill) the last time they had sex. In the pilot test data, we found that 4.9% of participants reported using the emergency contraceptive pill at last vaginal sex with a female, and 9.0% reported using this method at last vaginal sex with a male.

In a study of Toronto youth, Flicker and colleagues (2009) found that the two most preferred places to go for sexual health information are healthcare professionals and friends. In the pilot test data, we likewise found that the two most preferred sources of sexual health information were healthcare professionals (31%) and friends (21%).

Test-retest Reliability

Reliability refers to the consistency of data. Test-retest reliability is a measurement of the consistency of data that should not change over time. There are several ways to assess this form of reliability. The method used in this pilot study was to ask participants for the same information at different points in the survey. Chi-square tests of association were used to measure the degree of association between responses at different points in the survey.

There was only one opportunity to measure test-retest in the survey tool. Participants were asked whether or not they had done anything sexual with a partner in two places in the survey – in the first third of the survey and again in the last third of the survey. About 95% of those who indicated in the first third of the survey that they had done something sexual with a partner were consistent with this response in the latter third of the survey ($p \leq .001$). These results were similar for males and females, for younger (16-18 years) and older (19-24 years) participants, and for participants from rural and urban areas.

Inter-rater Reliability

Inter-rater reliability refers to the consistency of data between participants taking different versions of the survey. In this pilot study, inter-rater reliability was assessed between participants taking the survey in English and French. In particular, the content and construct validity analyses described above were run first for the total sample, and then again for English and French respondents separately. The results for the separate analyses of English and French surveys were identical to that of the total sample in all but one instance. The "STI/HIV testing self-efficacy" does not demonstrate content validity in the multi-trait analysis and the principal components analysis in the French version of the survey. The items which loaded on a single factor for both the full sample and the English version of the survey do not load on a single factor for the French survey. This scale likewise does not demonstrate strong construct validity in the French survey. In the total sample and the English version of the survey, those who reported getting tested for STIs in the previous 12 months had significantly higher scores on the "STI/HIV testing self-efficacy" scale than those who did not report getting tested for STIs during this period. In the French version of the survey, there was no significant difference in "STI/HIV testing self-efficacy" scores between those who did and did not report getting tested for STIs in the previous 12 months ($p = 0.278$). This same pattern was found for the French version of the survey between those who did and did not report getting tested for HIV in the previous 12 months ($p = 0.383$).

QUALITATIVE DATA

Research Assistants (RAs) were asked to record their experiences with recruitment and data collection in journal format with a goal of keeping track of issues that arose. While no formal tracking forms were created, the RA manual indicated that at the end of each data collection session, RAs should record "any thoughts, feelings and good or bad experiences" that day. Examples such as the number of participants, their ages and "what worked" and "didn't work" were indicated.

A total of 13 RA manuals were received and reviewed. Information was grouped thematically to facilitate analysis. Similar issues were described across the four survey sites and were grouped into three themes: 1) Technical issues associated with the actual online survey process, 2) Methodological issues regarding the recruitment, administration and set up of data collection and 3) Content issues with the questions themselves. Within the Content theme, a sub-issue, regarding the perceived gendered nature of some questions also emerged in two sites.

Many participants indicated to the RAs that the survey was interesting and that they enjoyed completing it. Many RAs reported that some participants returned with friends they had recruited after completing the survey and others stated that they had friends that they wanted to complete the survey. Other comments on the overall experience included statements that the survey made them reflect on their experiences, and that, in some cases, reflection made them uncomfortable. RAs also reported that participants stated that they felt additional sexual education was needed.

Technical Issues

ONLINE CONSENT

The first technical issue to arise concerned the online consent process. In order to ensure that youth were consenting to participate and to acknowledge that some would be uncomfortable withdrawing during the written one-on-one meeting with the RA, participants were asked to click a button indicating their willingness to complete the survey on the first screen. The question was phrased with yes/no buttons but the "no" button was placed on the top so that reading from top to bottom, the response was "no" or "yes". As a result, many participants reported clicking on the "no" button unintentionally, and were logged out of the survey. They then identified themselves to the RAs who logged them in using a different login/password combination.

AGE RANGE SETTINGS

When determining how to ensure that participants fell within the target age range for the survey without requiring identification, the default setting for the question requesting participants' age was month/year of birth. The program was set to include the last day of the month for anyone born in the latest possible year and the first day of the month for participants born in the earliest possible year to qualify. As a result, some participants were excluded from the survey, despite the fact that they had not yet reached the age of 24 (their birth date was in the month they were completing the survey but had not yet passed), or that they had already turned 16 but took the survey in the same month as their birth date.

PASSWORD/LOGIN CODES

Some issues arose with the password/login codes which were required to access the survey. Many RAs reported logging people into the survey with new codes, only to have the screen indicate the end of the survey (as if the participant had completed) or to receive a message that the code was incorrect. These reports were followed up with the software manufacturer to attempt to determine if the issue arose from the technology (e.g., incompatible or outdated browsers or browser versions), although data on the computers used to administer the surveys were often incomplete and the issue could not be resolved thoroughly.

ONLINE CONNECTIVITY

Because the survey was administered using a secure online web site, at times Internet access was an issue. The speed of the connection and the strength of the (wireless) signal had an impact on the survey's functioning and on the participants' ability to complete the survey in one sitting without interruption. There were several reports of wireless connections being cut off in which case the participants were logged on again by the RAs (because of the login/password combinations being active for a 24 hour period). RAs reported that where there were multiple interruptions in connectivity, participant motivation to continue dwindled, with some choosing not to complete.

NEW TECHNOLOGIES

Some RAs reported that many participants expressed interest in completing the survey on their personal electronics including laptops, iPhones and iPads, because they were available and participants were comfortable using their own technology.

Methodological Issues

LITERACY

As described earlier in the report, the literacy level required to complete the survey was identified as an issue early on by the research team. Many RAs reported being asked by participants as to the meaning of words and questions despite the availability of roll-over definitions. Because the survey methodology precluded RAs from answering questions regarding the meaning of terms in order to ensure methodological consistency, many RAs noted that participants who asked many questions appeared to either take a long time to complete the survey or appeared to skip many questions and conclude quickly. Until the approval of the revised methodology which allowed for a Scribe to read the questions and log the responses for a participant, there was no provision for people whose literacy level was not compatible with the survey tool and RAs in all four sites documented participants who appeared to have difficulty reading the survey.

COMPENSATION/MOTIVATION

The survey administration procedure contained honoraria for participants in recognition of their contribution to the research. The availability of remuneration created the possibility that some participants may try to complete the survey more than once, which was expressly disallowed. Because the pilot test used a purposive sample and actively recruited in places where youth who may be marginalized access services, some RAs noted that some participants attempted to complete the survey more than once and indicated that they were in need of the remuneration.

Another issue arising from financial compensation was the actual distribution of funds. Because participants were paid in cash for their participation, RAs were required to carry cash with them every time they were collecting data. In some cases, where there was the possibility to administer the survey to tens of participants over the course of the day, this meant carrying large amounts of money and that data collection was limited in some cases by the amount of money the RA had at any given time.

PHYSICAL SET-UP

The pilot study design initially focussed on having participants in rooms with dedicated desk top computer terminals for the participants' use. Many areas where potential participants congregate did not have dedicated computer rooms. Additionally, in the field, participants often expressed an interest in completing the survey where they were, for example in a public area, using RA laptops. In this way, the presence of participants completing the survey allowed for the recruitment of other nearby students who saw the RA and the participant(s) and inquired as to the process. As a result, it was more practical for RAs to bring laptops with them and to administer the survey from laptops, situated so that no one but the participants themselves could see the screen.

RECRUITMENT

As outlined in the survey methodology, recruitment was primarily by word of mouth (snowball sampling) and posters with information about the survey. Feedback from the RA journals indicated that as the posters did not include information about remuneration, they were found to be less effective than word of mouth, since once participants were advised of the compensation, they recruited their friends, who often brought other friends to the data collection sites.

RAs also raised the possibility of using new technologies such as email lists and invitations and Facebook sites to recruit participants as they are venues which many youth use to receive and distribute information.

Content Issues

LENGTH AND FORMAT

Participants reported to RAs that the survey was too long, particularly if they had been sexually active (as more questions were available to them). One RA reported that a participant disclosed that although he was bisexual, he had abandoned the survey before answering the set of questions about sexual activities with male partners because it was too daunting after having answered them all for female partners.

Participants also routinely reported confusion with questions presented in a matrix format, saying that these questions were hard to understand, were confusing, and/or took too much time to complete.

CONSENT FORMS

Some RAs noted that participants were confused by the information on the consent forms referring to "potential harms associated with the survey". Although this was intended to advise participants that the survey contained questions about suicide and sexual assault, it did not contain explicit reference to those issues. In some cases, participants understood the harm to be negative service/program decisions arising from the survey.

DEMOGRAPHICS

Many RAs reported that participants asked about the distinction between "rural" and "urban" areas in the question asking about place of residence. This question had been changed post-focus group because, in the earlier version, participants were asked to identify their place of residence by population size, which also was problematic for many.

Participants indicated that despite being able to check all on the question about racial and ethnic identity, they did not find anything which reflected their identity. Specifically, a number of participants suggested including "Jewish" as an ethnic identity as they did not identify with the term "Middle Eastern/Arab".

Some participants noted that the choices regarding schooling did not allow for the inclusion of years of university or college if a degree was not obtained.

OBTAINING INFORMATION/SERVICES

RAs reported that some participants felt that more choices should be included regarding places where sexual health information was obtained, particularly regarding online information. Although the survey includes "Internet" as a possible choice, participants indicated that they would like to be more specific such as blogs or medical sites.

Similar comments were made regarding "pornography" in that some participants indicating that pornography was the only place in which they received information about safer sex practices.

RAs noted that participants also commented that asking questions about whether they had received "enough" information from a particular source was awkward in that there were different expectations/ obligations depending on the source (e.g., teachers vs. the Internet).

Another participant commented that it might be useful to ask whether financial restraints were an issue regarding access to services or whether the services would be available, if they had the money.

GENDERED QUESTIONS

RAs noted in several instances that participants commented that the survey seemed more geared to women than men. In particular, on several occasions, male participants commented that the questions regarding contraception were geared to women or that if they had accompanied a partner to access services (for emergency contraceptive pills or contraception) and/or contributed financially, there was no clear way to indicate these events.

Other participants noticed that the survey continued to reinforce binary notions of sexuality and that in particular, some transgendered participants did not feel that they could describe their partners accurately using the choices provided.

IV. CONCLUSION

DISCUSSION OF FINDINGS

Limitations

The results of this pilot study must be interpreted with consideration for the limitations of the methodology. First, while recruitment locations were selected to reflect the diversification of the sample along one or more of the purposive lines, participants themselves represent a self-selected convenience sample.

Second, the survey collects data through self-report measures. A common critique of self-report measures is the extent to which a participant will respond truthfully for behaviours that are sensitive or, in some cases, illegal. Several aspects of the methodology add to this concern about the accuracy of self-report measures. For example, many of the questions require participants to recall information to the last event, within the previous 12 months, to the first time they experienced an event, and within their lifetime. The accuracy of responses may be further compromised because these events are difficult to recall. The literature suggests that this inaccuracy is greatest for longer recall periods (Catania et al., 1993) and for events or behaviours that occur more frequently (McFarlane & Lawrence, 1999). Additionally, participants completed the survey on computers in rooms where other participants were completing the survey. The presence of others in the room and participants' perceptions of their level of privacy may have further compromised the accuracy of the self-reported data.

A review of the literature by Brener and colleagues (2003) suggests that the items that are most likely to have been affected by these situational factors are those that involve behaviours considered desirable to engage in or attributes considered desirable to possess. Studies suggest that, among young people, these include alcohol use, drug use, and sexual behaviour (Alexander et al., 1993; Winters, Stinchfield, Henly, & Schwartz, 1991). Measures to ensure participants realized that their responses could not be viewed by others in the room were the primary means of encouraging truthful responses. These measures included:

- having clear instructions on how the computer-assisted system ensured their confidentiality and anonymity;
- by noting that no identifying information would be included with the responses and there was no way for the researchers to tell what their responses were;
- by spacing computers in the room so that the screen was only visible to the participant[16]; and
- by having privacy carrels around individual computer terminals.

[16] The revised methodology which included the use of Scribes to ask questions and record participants' answers represented a compromise between the desire not to exclude participants as a result of their inability to read and the recognition that the presence of a Scribe may influence their responses. As a result, unique login/password codes were developed to be used in situations where the survey was read to participants with the goal of analyzing this data separately. Unfortunately, the single use of a Scribe did not allow for analysis.

The literature also suggests that using a computer-assisted self-interviewing mode of administration reduces the amount of social desirability bias of such data more so than other survey formats, including face-to-face interviewer-driven and self-administered pen-and-paper (Turner et al., 1998; Wright, Aquilino, & Supple, 1998).

Finally, as noted, the computer-assisted survey system did not collect data on the language in which the survey was completed for the first 90 participants. As a result, the separation of data into English and French was not possible for the first 90 participants who completed the survey. This issue was rectified after the first 90 participants.

Summary of Pilot Test Findings

The purpose of this pilot study of the *Canadian Sexual Health Indicators Survey* was to estimate the validity and reliability of the data collected with the survey instrument. Various types of validity were assessed including content validity (did the data measure what they were intended to), construct validity (to what extent measures which ought to be correlated, are correlated), and criterion validity (how well do the data compare to a criterion accepted in the literature to be valid). Both test-retest reliability (how consistent are the data across time) and inter-rater reliability (how consistent are the data between different versions) were also measured. Additionally, data were analyzed to assess the extent of missing data for each survey item, and to uncover any patterns in the missing data.

CONTENT VALIDITY

The content validity of the survey was assessed through descriptive statistics, multi-trait factor analysis and principal components analysis. Generally, the survey showed good content validity for most survey items. Individual items generally showed sufficient variation among response categories, with few exceptions. An examination of the specified alternative responses from participants indicated that the response categories for several questions were not exhaustive enough and were missing important response choices for this age group. Descriptive statistics for the individual survey items also suggested that 43 of the items yielded higher than acceptable standards for the proportions of missing values. There are various reasons for the high proportion of missing values on these items. First, the high proportion of missing data on these items may be due in part to their placement in the survey. The missing values analysis seems to support this notion since the items found at the end of the survey had a significantly higher proportion of missing values then those near the start of the survey. This is an indication that the survey is too long and that some participants were experiencing fatigue at the end of the survey. Other possible explanations for the high proportions of missing values on items, particularly on those placed earlier in the survey, include confusing wording, lack of exhaustive response choices, or the need for filter questions and skip patterns so as to present only relevant questions to each participant.

The descriptive statistics also pointed to the style of survey items that are a source of invalid data. Questions which asked respondents for the age at which they first experienced something and the number of partners with whom they experienced something allowed for responses of zero years and zero partners (invalid responses). Matrix style questions which inquired about three types of sexual behaviour simultaneously (oral sex, vaginal sex and anal sex) were also a source of invalid data. These questions were presented to those who indicated that they had ever experienced at least one of these. These items included a "not applicable" category with the intention that those who had only experienced one or two of these behaviours would indicate "not applicable" for those that they hadn't experienced. The descriptive statistics suggest that this "not applicable" category was not selected when it was intended to be by participants who had not engaged in the behaviour. The magnitude of this invalidity was substantial and occurred quite often among over 25% of the responses. Gathering data about these behaviours simultaneously in a matrix did not produce valid and reliable data.

Similarly, survey items which required participants to check beside each of the categories that were relevant to them did not collect valid and reliable data. This style of question was implemented after the focus testing of the survey, during which participants indicated that having to check either 'yes' or 'no' to each was burdensome. Changing the questions to require participants to check only those that applied, rather than 'yes' or 'no' to each, resulted in the inability to distinguish between participants for whom none of the categories were relevant, and participants who did not respond to the question. This question was used to inquire about the topics of sexual health education and the types of sexual health information participants had received, the types of sexual health services participants had accessed, and the strategies participants used in the past 12 months to protect their sexual health. As a result, these questions could not be validated for construct or criterion validity.

The multi-trait factor analysis produced nine concepts that mirrored what the items were intended to measure, suggesting good content validity in these items. The concepts included various types of self-efficacy (protection, STI/HIV testing, sexual limit-setting, sexual communication), sexual assertiveness, and experiences of partner violence and sexual coercion. Principal components analysis and inter-item statistics suggested that seven of these concepts were well represented by their constituent items. The two exceptions were items intended to represent sexual approach (e.g., attitudes towards casual sex) and sexual function (e.g., sexual arousal, sex drive, sexual pleasure). While these items may measure sexual approach and sexual function well on their own, they are neither valid nor reliable as composite indicators of these aspects of sexual health. Separate analyses by sub-group demonstrated that these items are valid and reliable for male and female, younger (16-18 years) and older (19-24 years), and rural and urban participants.

CONSTRUCT VALIDITY

The survey also demonstrated good construct validity. Construct validity was assessed using chi-square tests of significance, independent samples T-tests, and bivariate correlation. The majority of expected associations between survey items were found to be statistically significant. There were three notable exceptions in which the expected associations were not statistically significant. These were associations between difficulty enjoying sex, sexual arousal and sexual satisfaction, and between difficulty having sex and reports of sexual pleasure. That these associations were not statistically significant should not be taken as evidence for the lack of construct validity in these items. It is conceivable that participants who experience difficulty enjoying sex are just as satisfied with the sexual parts of their life, and experience the same ease of sexual arousal as those who do not experience this difficulty. There is a growing literature in the field of sexuality and disability that suggests that those who experience difficulty having sex can still have satisfying and fulfilling sexual lives (Kedde & van Berlo, 2006; Mendes, Cardoso, & Savall, 2008). The construct validity was found to be consistent for male and female, younger (16-18 years) and older (19-24 years), and rural and urban participants.

CRITERION VALIDITY

As much as possible, findings from this pilot study were compared to the limited questions on sexual health in two recent studies on the health of youth in Canada that are widely cited in the literature. These included findings from the 2008 Adolescent Health Survey in British Columbia (Smith et al., 2009) and the 2009 Toronto Teen Survey conducted in Toronto, Ontario (Flicker et al., 2009). The findings from this pilot study were comparable to those from these established surveys with respect to the median ages of first vaginal and anal sex; the proportion of youth

who reported using condoms at last vaginal and anal sex; the proportion of youth who reported using the emergency contraceptive pill at last intercourse; and the preferred places for youth to receive sexual health information. Similar trends in the data between this survey and established surveys indicate that the participants were taking the survey seriously and providing valid data.

RELIABILITY

The survey demonstrated good test-retest reliability as evidenced by the correlation of data gathered at different points in the survey. This test-retest reliability was consistent for male and female, younger (16-18 years) and older (19-24 years), and rural and urban participants.

Finally, a comparison of results from the English and French versions of the survey suggests that the data show good inter-rater reliability. The analyses of content and construct validity did not differ between versions of the survey, with one exception. The items intended to measure "STI/HIV testing self-efficacy" do not well represent this concept within the French data. Two explanations are possible for these findings. With respect to the lack of content validity, it may be that the translation of these items gives them a different interpretation in French than they are intended to, and different than they have in English. With respect to the lack of construct validity, social norms and expectations, policies and practices around STI and HIV testing in the province of Quebec (where all of the French surveys were administered) may differ from the English-speaking provinces to an extent that self-efficacy has no predictive value in whether youth get tested for STIs.

Recommended Revisions to the Survey Tool

The survey tool appears to gather valid and reliable data on the majority of the intended indicators and the analysis is based on robust sample data. In order to obtain quality data on all intended indicators, some revisions to the tool are provided below.

1. **Response categories:** The findings suggest that the response categories of specific questions need to be condensed in some cases, due to lack of variation in responses, and expanded upon in others to ensure that they are exhaustive. In particular, where several participants suggested the same alternative response, serious consideration should be given to including these as response choices.
2. **Length:** The findings from the missing values analyses suggest that the survey is too long and participants are skipping items at the end of the survey with greater frequency than they do earlier in the survey. The fact that the most sensitive items in the survey are placed at the end further exacerbates this problem. There are several options for increasing the quality of data at the end of the survey. The first is to move the most sensitive items to earlier in the survey. The second is to shorten the survey by deleting items that were shown to be invalid and/or that are redundant.

3. **Addressing missing responses:** Particular attention should be paid to those survey items which yielded more than 8% missing data to determine reasons for the high proportion of missing responses. Confusing wording, inadequate response choices and/or the irrelevance of the item for specific subgroups should be considered. Future focus-testing with youth of these specific survey items may point to reasons for the high proportions of missing data.
4. **Question styles:** The findings also suggest that certain question styles did not work well in this survey. Consideration should be given to having 'yes' and 'no' check boxes for the five survey items for which it was impossible to distinguish between non-responders and those for whom none of the categories applied. Presenting material in the form of a matrix should also be reconsidered. More valid data would be gathered by asking the material separately for each behaviour and filtering out the behaviours which do not apply to each participant. Alternatively, only those columns of the matrix that apply to a given participant should be presented in the matrix. The "not applicable" category presented in these matrix style questions should be deleted as it yields invalid data. Finally, the items which require a numeric response from participants (e.g., age of first experience, number of partners) should be set to only accept responses greater than or equal to a value of 1.
5. **Skip patterns:** Finally, some of the skip patterns did not navigate two participants through the survey as intended. Reasons as to why this did not work for these two participants should be researched and extensive testing done on the CASI system to ensure skip patterns function in the same way for all participants.

Conclusion

Having a validated survey instrument for measuring various aspects of the sexual health of youth in Canada provide valuable data to policy-makers and decision-makers upon which to base policies and decisions. Educators and academic researchers at universities and colleges may be able to use the data from a national survey using this tool to improve their understanding of the trends in sexual health and issues facing youth. Canada lags behind several other countries in its ability to collect national, comprehensive data on this important aspect of the health of youth. The pilot-testing and validation of this survey provides the opportunity for Canada to meet this challenge posed by other countries that currently collect national data on sexual health.

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APPENDIX A

CONSENT FORM AND INFORMATION LETTER FOR FOCUS GROUP PARTICIPANTS

Consent Form

[Site Institution Logo]
[Site Institution Name]
[Site Expert's Departmental Affiliation]

CONSENT TO PARTICIPATE IN RESEARCH

Discussion Group Consent Form

Project Title: Indicators of Sexual Health: A nine component framework to assess the sexual health of Canadians aged 16 to 24

Investigators: [site expert's name and departmental affiliation],
[institutional affiliation of all other co-investigators]

Sponsor: Public Health Agency of Canada

You have been invited to take part in a research study. This study is voluntary and it is up to you to decide to participate or not. Before you decide, it is important to understand what the study is for, and what benefits and harms you might experience from this study. This consent form provides you with that information.

The researchers will:

- discuss the details of the study with you
- answer any questions you might have
- make sure that your name does NOT appear with your responses
- be available during the study to help you with any problems

If you decide not to take part or to leave the study before it is complete, this will NOT affect the health care services and treatment you receive.

1. **Why are we doing this study?**

We want to help youth to have positive sexual experiences and to stay healthy. We want to create programs that will work for youth. To do this, we need to find out about young people like you. We need to know things that will help you stay healthy and to have positive sexual experiences if you choose to have sex. The only information we have right now about young people like you is about things like the number of sexually transmitted infections, number of pregnancies, or using condoms. We need more information about the experiences, attitudes, and knowledge of young people. The first thing we need to do to get this information is to ask young people to fill out a survey. This survey is only a draft. We want to find out if this survey gives us the information that we need.

2. **Who is doing this study?**

A group of researchers from the University of Alberta, Dalhousie University, l'Université du Québec à Montréal and Options for Sexual Health are doing this research. We are working with a federal government agency called the Public Health Agency of Canada.

3. **Who is being given this survey?**

We are giving the survey to young people living in Canada who are between the ages of 16 and 24 years old.

4. **What do you have to do to take part in this study?**

You sign this consent form to let us know that you agree to participate voluntarily. Then we will ask that you complete a survey on a computer. You will complete this survey on your own. No one will disturb you, and no one will be looking at your answers as you complete the survey. The survey includes a lot of questions, but you should be able to complete it in approximately 45 minutes. You will then sit in a group with 4 or 5 other young people between 16 and 24 years of age, and discuss your opinions of the survey and your experience of filling it out. This should take approximately one hour.

5. **Do I have to fill out the survey? Do I have to answer all of the questions?**

No you do not! It is your choice to fill out the survey or not. You do not have to answer all of the questions. You can answer as many or as few as you like. You can leave at any time.

6. **How will you benefit from this study?**

Your answers will give us important information to help improve the sexual health of young people in Canada. You will receive $15 (Canadian) when you are finished the survey. You will NOT benefit from this study directly in any other way.

7. **Do you need to worry about anything because of filling out this survey?**

There are no medical procedures involved in this study. We are not taking any blood or other samples from you. We are only asking for your response to the survey. Some of the questions we ask in the survey may bring up painful things from your past. We know that these memories could upset you. We will give you phone numbers of people in your community who can help you. You do not have to worry about who sees your survey answers because the researchers are the only ones who will see your answers, and when you are finished, no one will know which form is yours.

Comments made during your discussion with the group will be kept confidential. It is possible though that some of the other people in your group may repeat comments made in the group to other people outside of the group at some time in the future. You should be aware that there may be some risk to the confidentiality of your discussions in the group.

8. **What happens to this survey when I finish it?**

When you finish filling out the survey, the responses will be saved and only the researcher will have access to the results. We will NOT tell people who took part in this study, but we will share responses with other researchers and with people that are creating programs to improve the sexual health of young people in Canada.

9. **What if I want to talk to somebody about this form?**

If you want to talk to someone about this study, you can call or email:

[site researcher's name
address
phone number
email]

You can also talk to the main researcher:

Dr. Maryanne Doherty
Associate Dean of Alternate Programs
University of Alberta
832 Education S
Edmonton, AB
T6G 2G5
Phone: (780) 492-0243
Email: mdoherty@ualberta.ca

10. Other Questions?

If you have any questions or would like to talk to someone about your rights in this study or about how you have been treated, you can talk to:

[site expert's institutional REB contact info]

To be filled out by you:

Please circle either 'yes' or 'no' for each of the following:

I have read this consent form completely	YES	NO
I have had the chance to ask questions/talk about this study	YES	NO
I have received satisfactory answers to my questions	YES	NO
I have received enough information about this study	YES	NO
I understand that I am free to stop taking part in this study	YES	NO
› at any time		
› without having to give a reason		
I understand the possible harms and benefits of this study	YES	NO
I have received a copy of this consent form	YES	NO

I agree to take part in this study.

_____	_____	_____
Participant's Name (Printed)	Participant's Signature	Date
_____	_____	_____
Researcher's Name	Researcher's Signature	Date

Information Letter

[Site Institution Logo]
[Site Institution Name]
[Site Expert's Departmental Affiliation]

DISCUSSION GROUP INFORMATION LETTER

Project Title: Indicators of Sexual Health: A nine component framework to assess the sexual health of Canadians aged 16 to 24

Investigators: [site expert's name and departmental affiliation],
[institutional affiliation of all other co-investigators]

Sponsor: Public Health Agency of Canada

You have been invited to take part in a research study. This study is voluntary and it is up to you to decide to participate or not. Before you decide, it is important to understand what the study is for, and what benefits and harms you might experience from this study. This consent form provides you with that information.

The researchers will:

- discuss the details of the study with you
- answer any questions you might have
- make sure that your name does NOT appear with your responses
- be available during the study to help you with any problems

If you decide not to take part or to leave the study before it is complete, this will NOT affect the health care services and treatment you receive.

1. **Why are we doing this study?**

We want to help youth to have positive sexual experiences and to stay healthy. We want to create programs that will work for youth. To do this, we need to find out about young people like you. We need to know things that will help you stay healthy and to have positive sexual experiences if you choose to have sex. The only information we have right now about young people like you is about things like the number of sexually transmitted infections, number of pregnancies, or using condoms. We need more information about the experiences, attitudes, and knowledge of young people. The first thing we need to do to get this information is to ask young people to fill out a survey. This survey is only a draft. We want to find out if this survey gives us the information that we need.

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4. **What do you have to do to take part in this study?**

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5. **Do I have to fill out the survey? Do I have to answer all of the questions?**

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There are no medical procedures involved in this study. We are not taking any blood or other samples from you. We are only asking for your response to the survey. Some of the questions we ask in the survey may bring up painful things from your past. We know that these memories could upset you. We will give you phone numbers of people in your community who can help you. You do not have to worry about who sees your survey answers because the researchers are the only ones who will see your answers, and when you are finished, no one will know which form is yours.

Comments made during your discussion with the group will be kept confidential. It is possible though that some of the other people in your group may repeat comments made in the group to other people outside of the group at some time in the future. You should be aware that there may be some risk to the confidentiality of your discussions in the group.

8. **What happens to this survey when I finish it?**

When you finish filling out the survey, the responses will be saved and only the researcher will have access to the results. We will NOT tell people who took part in this study, but we will share responses with other researchers and with people that are creating programs to improve the sexual health of young people in Canada.

9. **What if I want to talk to somebody about this form?**

If you want to talk to someone about this study, you can call or email:

[site researcher's name
address
phone number
email]

You can also talk to the main researcher:

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Associate Dean of Alternate Programs
University of Alberta
832 Education S
Edmonton, AB
T6G 2G5
Phone: (780) 492-0243
Email: mdoherty@ualberta.ca

10. Other Questions?

If you have any questions or would like to talk to someone about your rights in this study or about how you have been treated, you can talk to:

[site expert's institutional REB contact info]

APPENDIX B

FOCUS GROUP DISCUSSION GUIDE

Objectives: what do we want to know?

How does the survey 'work' for youth participants?

- How does survey readability fare?
- How does survey comprehension fare?
- Is survey language appropriate or too 'high lit'? What language would be more appropriate?
- Is the survey inclusive and respectful of youth respondents?
- Are the definitions understandable?
- Are the concepts understandable; if not, which ones?
- Are the items developed sufficiently?
- Are important questions missing?
- What does this survey mean to the study population?

Discussion Group Method

SELECTION OF PARTICIPANTS

- 30 participants (15 in BC and 15 in Quebec) will be invited to complete and discuss the Canadian Sexual Health Indicators Survey.
- Snowball sampling will be used to find voluntary participants.
- There will be a total of 6 discussion groups ideally containing 5 participants:
  - Participants will be grouped by gender and orientation/identity
  - In each of BC and Quebec, there will be one male-only group, one female-only group, and one group of queer and trans-identified youth.

CONDUCTING DISCUSSION GROUPS

- Discussion groups will last from between 60 and 120 minutes, depending on enthusiasm of group (not including the time taken to complete the survey)
- RAs will recruit discussion group participants, and arrange times and places for the discussion group to take place.
  - Suggested Activity: Using flip charts and post-it Notes, the Facilitator can visually analyze the qualitative data with the participants (see throughout for more specific detail on this suggestion)
- RAs will provide resource lists/goodie bags to be distributed to participants at discussion group close.

COLLECTING AND ANALYZING RESULTS

- Notes will be collated from flip charts, the sessions will be audio-recorded, but the sessions will not be transcribed.

Part 1: Completing the survey

THE FACILITATOR WILL:

- Walk the participants through the steps of completing the survey (outlined below)
- Note how long it takes each participant to complete the survey.

THE PARTICIPANTS WILL BE:

› Greeted at the door, introduced to the facilitator, given the consent forms and information letter, and will sign the consent form for the discussion group

> **Suggested Text:** *Everything that you tell us today is totally confidential. As researchers, we are bound by ethical guidelines. Part of those ethical guidelines include ensuring that you know what your rights as participants in research are. I would like to go over the information in your consent letter so that you fully understand that you are allowed to refuse to answer any question at any time, either on the questionnaire or during our discussion, and that you can also withdraw from the questionnaire or discussion at any time. You don't have to participate if you don't feel comfortable.*

› Led to the computer terminal where they will be completing the survey.
› Taken to the home page of the survey and signed in by the RA using a password and username unique to each participant.
› Given instructions about how to answer the questionnaire including the ability to scroll over highlighted words for definition, terminating the survey before completion, skipping questions, and monitoring progress with the progress bar
› Lead to the group discussion room upon completion of the survey, and will be handed a paper copy of the survey to review and write down notes/thoughts on while they are waiting for the other participants to finish completing the survey

Suggested time: 45-60 minutes

Part 2: Introductions

Following the completion of the survey on the computer terminal, participants are seated in a group (preferably facing each other).

THE FACILITATOR SHOULD:

› place the audio-recorder in the centre of the group in a location away from windows, fans or anything else that would make noise during the session, so as to maximize the ability to clearly record all of the participants' voices.
› position themselves relative to the group so as to clearly record their own voice and not impede the recording of participants.

FACILITATOR'S INTRODUCTION WILL COVER:

› Introductions
› Purpose of discussion group session

> **Suggested text:** *Thank you for making your time available to attend this focus group. The purpose of this meeting is to obtain your feedback on a sexual health survey that will be filled out on-line by people your age. The feedback we receive from you today will help us improve the survey. We would like to record the session with an audio-recorder so that we have an accurate report of the information collected here today. Our conversations will not be written word for word, but the recordings will help us review something later if there is any confusion. The notes being taken by the researchers today will be collated and sent to the rest of the research team.*

› **Ground rules to create a safe discussion space** (TIP: can be written on poster beforehand to save time, and the group can add additional points they feel are missing)

› **Suggested ground rules:**
  - ✓ **Confidentiality** (everything discussed today stays in this room)
  - ✓ **Respecting** each other's privacy and boundaries
  - ✓ Speaking **one at a time**
  - ✓ There is **no such thing as a "stupid" question** or comment today
  - ✓ You have the **right to your own values, beliefs and opinions**. Today is not the day to change someone else's but it is a great day to embrace your own
  - ✓ You have the **right to "pass"**
› **Outline the agenda for the session**

Suggested time: 15 minutes

Part 3: Discussing the survey

After the survey is completed by everyone, all participants regroup together around a table/in a circle. They will have received a paper copy of the survey AFTER they complete the survey on the computer, so that their memories can be refreshed in the group discussion.

To facilitate the discussion, the facilitator could have flip charts laid out beside each other on a wall at the front of the room where themes and specific comments could be written throughout the session.

FACILITATOR'S DISCUSSION QUESTIONS

STAGE ONE DISCUSSION: open-end exploratory question. The purpose of the question is to gather a list of potential discussion points to explore.

The facilitator should:

› be noting and grouping the responses so they can be addressed. These general comments could form overall general themes or "headers" on each of the flip charts.

> **Suggested question:** *Welcome back everyone. How was that? What are your initial thoughts? I'll be keeping track, and we'll take some time to explore them after we have a bit of a list.*
>
> **Possible probes:**
> - ✓ *"What was the experience like for you …"*
> - ✓ *"How did it impact the way you were able to answer the questionnaire?"*
> - ✓ *"How did this impact on how you wanted to continue with the survey or the answers you were able to give?"*

› review the main themes identified at the top of the flip chart and do an audit with the participants:

> **Suggested Text:** *As we've been talking, I have written some words at the top of each page that might represent main groups of things you have identified in our conversation so far (Read the headings). Do you think these represent our discussion so far? Is anything missing?*

Suggested time: 20 minutes

STAGE 2 DISCUSSION: pre-determined questions raised by the research group. These questions should be raised if they have not already come up, or they were not sufficiently addressed already.

Suggested Text: *We're going to spend the next 20 minutes further exploring the points you've brought up.*

QUESTION 1: WHAT IMPORTANT SEXUAL HEALTH ISSUES THAT SHOULD HAVE BEEN ADDRESSED IN THE QUESTIONNAIRE, BUT WEREN'T?

The facilitator should:

› be listening for what those issues are, and why the participants consider them to be important and should be placing these under one or more of the headings on the flip charts.

Possible probes:

- ✓ *Is there stuff going on in you or your friend's lives that you did not see reflected in any of the questions?*
- ✓ *Do you think the questions in the survey are important to your age group?*
- ✓ *What is missing from the survey that should be asked?*

Suggested time: 5 minutes

QUESTION 2: WHAT DID YOU THINK ABOUT THE FLOW OF THE QUESTIONS AND SECTIONS?

The facilitator should:

› be listening for suggestions about how to reorder questions and/or sections

› writing down and placing these under one or more of the headings on the flip charts.

Possible probes:

- ✓ *Did the flow of the questions and sections make sense?*
- ✓ *Was the flow of the questionnaire easy to follow?*

Suggested time: 5 minutes

QUESTION 3: WHAT QUESTIONS, ITEMS OR ISSUES DID YOU FIND UNCLEAR OR HAVE DIFFICULTY UNDERSTANDING?

The facilitator should:

› give the participants a few minutes to flip through the paper copy of the survey they were given AFTER they completed the computer version of the survey.

› encourage participants to make notes beside specific questions to jog their memory during discussions.

› be writing down specific suggestions under the appropriate headings on the flip charts

Possible probes:

- ✓ *How did you find the overall language and tone of the questions?*
- ✓ *How useful was the glossary (definitions sheet)?*

Suggested time allowed: 5 minutes

QUESTION 4: HOW DID IT FEEL FILLING OUT THE SURVEY?

The facilitator should:

› be writing down comments under the appropriate headings on the flip charts

Possible probes:

- ✓ *How did you feel about the way you completed the survey (e.g., on the computer)?*
- ✓ *Did you like doing the survey?*
- ✓ *Would you tell your friends to fill out the survey?*
- ✓ *What sort of follow-up resources do you think would be good for you and your friends after completing the survey?*

Suggested time: 5 minutes

STAGE 4 DISCUSSION: wrap-up question.

[Facillitator should be writing down specific comments under appropriate headings on the flip charts]

Suggested question: *We are nearing the end of our allotted time, but I promised earlier that we would return to any outstanding issues that you think we haven't addressed in our discussions today. Is there anything you'd like to mention or bring up before we break?*

Suggested time: 5 minutes

Part 4: Closing the discussion group.

The facilitator should:

- › Thank participants for their time
- › Remind participants how they can obtain research results and stay abreast of the project
- › Distribute resource lists/goodie bags to participants
- › Adjourn

Suggested time: 3 minutes

Part 5: After the session

Immediately after the session:

- › Verify tape recorder, if used, worked throughout session [rewind to the last few minutes of the discussion]
- › If the recorder didn't work, review the notes on the flip charts and record in your journal anything that might not be reflected on the charts (e.g., body language that indicated participants were uncomfortable, etc.)
- › Make any follow-up notes, clarify scratching or anything that doesn't make sense, ensure pages are numbered
- › Write down observations made during the session. For example, what was the nature of participation by the group? Were there any surprises during the session?

APPENDIX C

LIST OF RECRUITMENT SITES

British Columbia

Mount Pleasant Neighbourhood House
Collingwood Neighbourhood House
Kiwassa Neighbourhood House
Qmunity GAB Youth Services
YouthCO AIDS Society
Purple Thistle Centre
Frog Hollow Neighbourhood House
Cedar Cottage Neighbourhood House
Abbotsford Community Services Youth Resource Centre
ANKORS Nelson
ANKORS Cranbrook
BCIT student association
SFPirg
Fraser Valley Youth Society
Vancouver Art Institute health fair
Diversity fair
Fontana Cafe
Meraloma Rugby Club
UBC Campus
Options for Sexual Health website
Options for Sexual Health Cranbrook clinic
Options for Sexual Health Creston clinic
Options for Sexual Health Kootenay Loop clinic

Alberta

Portage College
Institute for Sexual Minority Studies and Services (University of Alberta)
Education Students' Association
Big Brothers Big Sisters Organization
Old Strathcona Youth Society
YMCA (Bill Rees site)
Inner City Youth Housing Project
iHuman

Quebec

McGill University
Jeunesse Lambda
Coalition Sherbrookoise pour le travail de rue
l'Université de Sherbrooke
Le Tremplin 16-30
l'Université du Québec à Montréal
Collège Édouard-Montpetit
Cegep Saint-Jean-sur-Richelieu
La Piaule

Nova Scotia

Phoenix Learning and Employment Centre
Black Student Advising Centre
Halifax Sexual Health Centre
Addiction Services Cape Breton
Heartwood Centre for Community Youth Development
Dalhousie University residences
Dalhousie Women's Centre
Dalhousie Counselling Services Centre
North End Community Health Centre
African Canadian youth conference (Mission Critical: Our Future Excellence Without Excuse)
The Halifax Shopping Centre
Student Union Building (Dalhousie University)

APPENDIX D

SAMPLE RECRUITMENT POSTER

APPENDIX E

LIST OF DATA COLLECTION SITES

British Columbia

Abbotsford Community Services Youth Resource Centre
ANKORS Cranbrook
ANKORS Nelson
Mount Pleasant Neighbourhood House
Collingwood Neighbourhood House
Frog Hollow Neighbourhood House
Kiwassa Neighbourhood House
Kootenay Employment Services
Qmunity GAB Youth Services
Fraser Valley Youth Society
Fraser Valley Regional Library
Meralom Rugby Club
YouthCO AIDS Society
Purple Thistle Centre
UBC campus
BCIT Student Association
SFPirg
Options for Sexual Health Clinics Kootenay Loop clinic
Vancouver Public Library
Two Starbucks locations
coffeeshops with open wireless (i.e., JJ Bean coffeeshop, WAVES coffeeshop)

Alberta

Portage College
University of Alberta (Faculty of Education Buildings)
Old Strathcona Youth Society
YMCA (Bill Rees site)
Inner City Youth Housing Project
Office of the Child and Youth Advocate, Children's Services
iHuman

Quebec

l'Université de Sherbrooke
McGill University
Jeunesse Lambda
Coalition Sherbrookoise pour le travail de rue
Le Tremplin 16-30
l'Université du Québec à Montréal
Collège Édouard-Montpetit
Cegep Saint-Jean-sur-Richelieu
La Piaule

Nova Scotia

The Youth Project
Halifax Sexual Health Centre
Heartwood Centre for Community Youth Development
Student Union Building (Dalhousie University)
Youth Drop-In Centre (Halifax Shopping Centre)

APPENDIX F

CONSENT AND INFORMATION FORMS FOR STUDY PARTICIPANTS

Consent Form

[Site Institution Logo]
[Site Institution Name]
[Site Expert's Departmental Affiliation]

CONSENT TO PARTICIPATE IN RESEARCH

Project Title: Indicators of Sexual Health: A nine component framework to assess the sexual health of Canadians aged 16 to 24

Investigators: [site expert's name and departmental affiliation],
[institutional affiliation of all other co-investigators]

Sponsor: Public Health Agency of Canada

You have been invited to take part in a research study. This study is voluntary and it is up to you to decide to participate or not. Before you decide, it is important to understand what the study is for, and what benefits and harms you might experience from this study. This consent form provides you with that information.

The researchers will:

- discuss the details of the study with you
- answer any questions you might have
- make sure that your name does NOT appear with your responses
- be available during the study to help you with any problems

If you decide not to take part or to leave the study before it is complete, this will NOT affect the health care services and treatment you receive.

1. **Why are we doing this study?**

We want to help youth to have positive sexual experiences and to stay healthy. We want to create programs that will work for youth. To do this, we need to find out about young people like you. We need to know things that will help you stay healthy and to have positive sexual experiences if you choose to have sex. The only information we have right now about young people like you is about things like the number of sexually transmitted infections, number of pregnancies, or using condoms. We need more information about the experiences, attitudes, and knowledge of young people. The first thing we need to do to get this information is to ask young people to fill out a survey. This survey is only a draft. We want to find out if this survey gives us the information that we need.

2. **Who is doing this study?**

A group of researchers from the University of Alberta, Dalhousie University, L'Université du Québec à Montréal and Options for Sexual Health are doing this research. We are working with a federal government agency called the Public Health Agency of Canada.

3. **Who is being given this survey?**

We are giving the survey to young people living in Canada who are between the ages of 16 and 24 years old.

4. **What do you have to do to take part in this study?**

You sign this consent form to let us know that you agree to participate voluntarily. Then we will ask that you complete a survey on a computer. You will complete this survey on your own. No one will disturb you, and no one will be looking at your answers as you complete the survey. The survey includes a lot of questions, but you should be able to complete it in approximately 45 minutes.

5. **Do I have to fill out the survey? Do I have to answer all of the questions?**

No you do not! It is your choice to fill out the survey or not. You do not have to answer all of the questions. You can answer as many or as few as you like. You can leave at any time.

6. **How will you benefit from this study?**

Your answers will give us important information to help improve the sexual health of young people in Canada. You will receive $15 (Canadian) when you are finished the survey. You will NOT benefit from this study directly in any other way.

7. **Do you need to worry about anything because of filling out this survey?**

There are no medical procedures involved in this study. We are not taking any blood or other samples from you. We are only asking for your response to the survey. Some of the questions we ask in the survey may bring up painful things from your past. We know that these memories could upset you. We will give you phone numbers of people in your community who can help you. You do not have to worry about who sees your survey answers because the researchers are the only ones who will see your answers, and when you are finished, no one will know which form is yours.

8. **What happens to this survey when I finish it?**

When you finish filling out the survey, the responses will be saved and only the researcher will have access to the results. We will NOT tell people who took part in this study, but we will share responses with other researchers and with people that are creating programs to improve the sexual health of young people in Canada.

9. **What if I want to talk to somebody about this form?**

If you want to talk to someone about this study, you can call or email:

[site researcher's name
address
phone number
email]

You can also talk to the main researcher:

Dr. Maryanne Doherty
Associate Dean of Alternate Programs
University of Alberta
832 Education S
Edmonton, AB
T6G 2G5
Phone: (780) 492-0243
Email: mdoherty@ualberta.ca

10. Other Questions?

If you have any questions or would like to talk to someone about your rights in this study or about how you have been treated, you can talk to:

[site expert's institutional REB contact info]

To be filled out by you:

Please circle either 'yes' or 'no' for each of the following:

I have read this consent form completely	YES	NO
I have had the chance to ask questions/talk about this study	YES	NO
I have received satisfactory answers to my questions	YES	NO
I have received enough information about this study	YES	NO
I understand that I am free to stop taking part in this study	YES	NO
› at any time		
› without having to give a reason		
I understand the possible harms and benefits of this study	YES	NO
I have received a copy of this consent form	YES	NO

I agree to take part in this study.

_____	_____	_____
Participant's Name (Printed)	Participant's Signature	Date
_____	_____	_____
Researcher's Name	Researcher's Signature	Date

Information Letter

[Site Institution Logo]
[Site Institution Name]
[Site Expert's Departmental Affiliation]

Project Title: Indicators of Sexual Health: A nine component framework to assess the sexual health of Canadians aged 16 to 24

Investigators: [site expert's name and departmental affiliation], [institutional affiliation of all other co-investigators]

Sponsor: Public Health Agency of Canada

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3. **Who is being given this survey?**

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4. **What do you have to do to take part in this study?**

You sign this consent form to let us know that you agree to participate voluntarily. Then we will ask that you complete a survey on a computer. You will complete this survey on your own. No one will disturb you, and no one will be looking at your answers as you complete the survey. The survey includes a lot of questions, but you should be able to complete it in approximately 45 minutes.

5. **Do I have to fill out the survey? Do I have to answer all of the questions?**

No you do not! It is your choice to fill out the survey or not. You do not have to answer all of the questions. You can answer as many or as few as you like. You can leave at any time.

6. **How will you benefit from this study?**

Your answers will give us important information to help improve the sexual health of young people in Canada. You will receive $15 (Canadian) when you are finished the survey. You will NOT benefit from this study directly in any other way.

7. **Do you need to worry about anything because of filling out this survey?**

There are no medical procedures involved in this study. We are not taking any blood or other samples from you. We are only asking for your response to the survey. Some of the questions we ask in the survey may bring up painful things from your past. We know that these memories could upset you. We will give you phone numbers of people in your community who can help you. You do not have to worry about who sees your survey answers because the researchers are the only ones who will see your answers, and when you are finished, no one will know which form is yours.

8. **What happens to this survey when I finish it?**

When you finish filling out the survey, the responses will be saved and only the researcher will have access to the results. We will NOT tell people who took part in this study, but we will share responses with other researchers and with people that are creating programs to improve the sexual health of young people in Canada.

9. **What if I want to talk to somebody about this form?**

If you want to talk to someone about this study, you can call or email:

[site researcher's name
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phone number
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You can also talk to the main researcher:
Dr. Maryanne Doherty
Associate Dean of Alternate Programs
University of Alberta
832 Education S
Edmonton, AB
T6G 2G5
Phone: (780) 492-0243
Email: mdoherty@ualberta.ca

10. **Other Questions?**

If you have any questions or would like to talk to someone about your rights in this study or about how you have been treated, you can talk to:

[site expert's institutional REB contact info]

APPENDIX G

FOCUS GROUP FEEDBACK

Technical Issues

"*I accidently clicked a wrong answer but couldn't go back to change it."*

"Often questions were worded slightly different but I didn't realize they were worded differently. It wasn't until I filled out the female experiences that I realized I filled out previous questions incorrectly."

"Knowing I couldn't go back made me not want to screw up!"

"…when I tried to scroll down, the green dot moves. Every time I click on the dot, I need to move the mouse off so I can scroll. This really slowed me down."

"Why can't I unselect an answer on the round dots/circles? Sometimes I wanted to unselect, but couldn't."

"The percentage [status bar at the top of the page] *doesn't work. I was stuck at 38% for ages. It was very discouraging and made me despair I wouldn't finish."*

Survey Structure and Content

"I felt pressured to pick an answer that didn't really fit my experience, or skip these questions."

"On pages 13 and 14, question 41 asks to describe your relationship. Lots of relationship options are missing."

"I felt frustrated that I could only pick ONE of the choices. I wanted to mark more than one choice!"

"I speak English with my brother, and Chinese with my parents. We speak more than one language at home."

One participant indicated early on in the survey that he was homeless and expressed frustration when he was asked a series of questions about his home later in the survey. Others stated:

"I really hated the questions asking me if I felt confident in my ability to…I don't know if I feel confident…I haven't had that experience!"

"There is a question, "would you be able to use protection if you were high" – I spent a lot of time on this question. I don't use drugs. There needs to be a 'not applicable' response option."

"There were some questions that asked me if I did this or I did that but I already answered that I didn't. The person reading this in the future is going to think that I'm lying or something."

"The repetitive questions were confusing. Because so many questions were similar, I was worried what if my answers were inconsistent?"

"If you are going to ask 5 questions asking the same thing, please put it on the same page!"

Survey Flow and Organization

"I felt that the survey…a lot of the questions on the survey were meant for older people, not teenagers."

"…it was unclear to me what exactly was being asked."

"Some of the questions around protection in the sexual experiences section were confusing."

"Simple English please!"

"The question asking about if I have a quiet place, or 100 books in my house didn't make sense. I felt insulted too, like insinuating that I wasn't smart."

"The ranges were on the low side. I felt judged." [speaking of the numeric ranges in questions regarding the number of times they had engaged in an activity]

"There were parts during the survey when I felt bad about myself. Sometimes my sexual practices aren't the best."

"I had to rack my brain for answers with numerical value."

"I felt pressured to provide exact numbers of sexual partners to satisfy the survey requirements."