Summary Report on the Manitoba Youth Health Survey Pilot Project 2011

Prepared: August 2012

INTRODUCTION TO THIS REPORT

The first implementation of the Manitoba Youth Health Survey (YHS) took place between 2006 and 2008, in over 400 schools across all eleven of Manitoba's regional health authorities (RHAs). The YHS process was led by the RHAs and overseen by Partners in Planning for Healthy Living (PPHL), a group of partners who share a common mandate for the prevention of chronic disease.

With the support of PPHL, the RHAs intend to implement the YHS again during the 2012-2013 school year. Over the course of two years, the YHS Working Group of PPHL consulted a variety of partners, experts and stakeholders in updating the survey tool and processes for the next implementation of the survey. These updated tools and processes were used in the spring of 2012 during the Manitoba YHS Pilot Project. This report reviews the design, analysis and results this pilot project.

PART A- OVERVIEW OF THE MANITOBA YHS PILOT PROJECT

Purpose and Objectives

The intent of this pilot was to test the updated YHS tool and processes with a small cohort of Grade 7-12 Manitoba students, in order to inform the larger YHS implementation planned for the fall of 2012. The YHS tool and processes were piloted in order to determine:

1. Face Validity
2. Test-retest Reliability
3. Effect of Student Codes
4. Response Burden
5. Implementation Feasibility
6. Analysis Feasibility

In order to assess these outcomes, students completed the survey as part of either a focus group or test-retest sample.

Funding

This project was conducted using funds provided by Healthy Schools Manitoba as well as in-kind human and financial resources from PPHL member organizations.

Ethical Approval

Participation in this pilot project was voluntary and there were no known risks to participants. This project was reviewed and approved by the University of Manitoba Health Research Ethics Board.

Youth Health Survey Tool

After lengthy consultation with PPHL stakeholders, YHS end-users and Manitoba experts, the original YHS was updated and expanded to include the two modules used in this pilot:

YHS Core Questionnaire-

Seventy-two self-report questions taken from national and international sources around health behaviours such as physical activity, nutrition, tobacco, alcohol and drug use, mental health, injury prevention, spirituality, sun safety and the Manitoba Physical Education/Health Education (PE/HE) curriculum. All students that participated in the pilot project completed the YHS core questions (see Appendix A).

YHS with Sexual Health Questions-

Based on feedback from stakeholders and experts, a need was identified to include a set of questions in the YHS relating to sexual health. Schools involved in the pilot were offered the opportunity to pilot the core YHS with an additional 12 questions relating to

sexual health (See Appendix B). For the purpose of this pilot project, the expanded survey with sexual health questions was only available for the focus group portion of the study.

Student Codes

The 2012 YHS will see the addition of student codes. The inclusion of these codes was suggested by experts and stakeholders in order to facilitate the ability to track students over time to monitor changes in health behaviours as well as study health outcomes in later life. Student code information collected during the YHS will be used in the future to connect the YHS dataset to other datasets (such as provincial Early Child Development data or future YHS datasets). This will only be done in a secure environment and only for projects that are approved by relevant research authorities (ie. University of Manitoba Health Research Ethics Board).

For the pilot project, each survey page was numbered with a unique random number in order to simulate the coding process. Students were asked to write their names on the front page of the survey which was then torn off and stored separately in order to assure confidentiality and comfort of the student. The data from the pilot study was not linked to any other datasets. The only purpose of including codes in the pilot was to test the process of using the codes and discuss student responses to them.

PART B- RECRUITMENT, CONSENT, ADMINISTRATION & ANALYSIS PROCEDURES

Recruitment

Recruitment for this pilot project took place at two levels:

School recruitment

RHAs contacted schools with whom they had an existing relationship from the previous YHS. Interested schools then indicated which grades they would like to have participate and whether they would like to be involved in the focus group or test-retest implementation. Recruitment continued until there was sufficient representation across the grade levels and methodologies.

Student recruitment

Once involved, schools recruited teachers and students from one or more classes in their school. In order to achieve a representative sample of grades 7-12, the researchers identified which grade they would ideally like the school to recruit.

Informed Consent

This pilot project used two different consent procedures depending on the survey module used.

Active Consent

Due to the sensitive nature of the sexual health module, schools that chose to implement this optional module followed active consent procedures in which a notification was sent home to parents. This form was signed and returned to the school in order for their child to participate in the pilot project.

Passive Consent

Schools that implemented the YHS without the sexual health module used passive consent procedures. Parents were notified about the pilot project through a letter sent home with their child and given a chance to opt their child out of participating by contacting the school.

Prior to undertaking any data collection, the nature and purpose of the research project was explained to participants. As part of this explanation, students were assured of the confidentiality of their individual survey and focus group responses and that only aggregate results and themes from focus groups would be used in reports. Participants were also informed that they could choose to not participate in any aspect of the pilot project regardless of parental consent. If students chose to not participate in the survey, they were instructed to do class work quietly during survey administration.

Exclusion Criteria

It was at the discretion of the participating school and/or classroom teacher to decide whether a student was capable of participating in the YHS pilot project (e.g. if there were concerns about a developmental or learning disability that could prohibit participation). These students were asked to work quietly on other work during the survey administration.

Survey Administration

Teachers administered the survey in a classroom setting during school hours in order to simulate the process to be used in the provincial implementation of the YHS.

Honorarium

Each participating classroom had the choice of receiving a $100 cheque for use at their own discretion, or a treat lunch on the day of survey administration. All students in participating classrooms were invited to join the treat lunch regardless of participation in the pilot study.

PART C- STUDY DESIGN

Figure 1 below depicts the distribution of students within the study. Schools choose whether their students would participate in the Test Retest or or Focus Group. Students in the Test Retest group were randomly assigned to one of four sub-groups depending on their student code status. Schools who chose to participate in the Focus group were given the option of participating in the additional sexual health module.

Figure 1- Flow chart of study participation

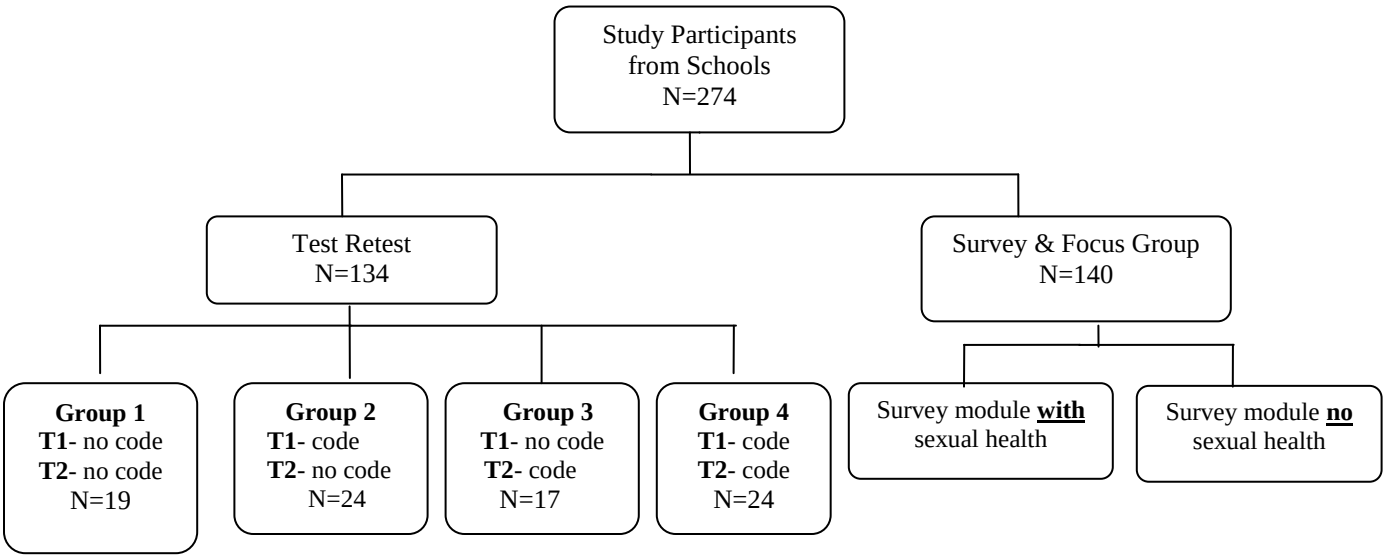

Figure 1. T1: First survey administration**; T2:** Second survey administration

Code: Student self-identifies on survey (i.e writes name on front of survey); **No code:** Student does not self identify on survey (i.e does not write name on front of survey)

*Note: only 84 students participated in the survey at T1 and T2

Data Analysis & Storage

All analyses for this project were performed by the study coordinator and statistical team at CancerCare Manitoba. All materials were stored in a secured folder on the CancerCare Manitoba server requiring security clearance for access. Further details of analysis used are given for each test in the methods, analysis and results section.

Sample Size

This project used convenience sampling to recruit a sub-sample of Manitoba students in Grades 7-12. Efforts were made to recruit students from three diverse geographic areas (northern MB, urban MB and rural MB), to have equal representation of male and female students, and to include students from each of the six grades involved in the study (7-12).

In total, 274 individual students from 10 schools participated in the pilot project. Of these, 140 participated in the focus group sample while 134 participated in the test-retest sample. Of those who participated in the latter group, 84 students participated in the survey at T1 and T2 (See Table 1).

Table 1- Pilot project sample size

Method	Participants
Focus Group	140
Test-Retest (T1 or T2)	134
Test-Retest (T1 and T2)	84

Pilot Demographics

Ten schools from five different RHAs participated in the pilot project. Table 2 shows the demographic breakdown of participants.

Table 2-Pilot demographics by methodology

		Focus Group (%)	Test-Retest* (%)
Gender	Male	67 (48)	41 (49)
	Female	67 (48)	37 (44)
	Missing	6 (4)	6 (7)
Grade	7 & 8	43 (30)	17 (20)
	9 & 10	51 (36)	54 (64)
	11 & 12	45 (32)	12 (14)
	Missing	1 (1)	1 (1)
Location	Urban	27 (19)	4 (5)
	Rural	113 (81)	80 (95)
Geography	North	27 (19)	8 (10)
	South	113 (81)	76 (90)
	Total	**140**	**84**

*Test-retest only includes students with a complete survey at T1 & T2 (N=84)

PART D- METHODS, ANALYSIS AND RESULTS

The purpose of this pilot project was to test the updated YHS tool for face validity, test-retest reliability, the effect of student codes, response burden, implementation feasibility and analysis feasibility. The results presented here were used to refine the final YHS tool as well as adjust the planning process for the upcoming YHS implementation.

1. Face Validity- Focus Group sample

Face validity is an estimate of whether a survey appears to measure what it intends to measure. Face validity of the YHS was tested through focus groups with students in order to determine their level of understanding with the survey and its processes. Schools in this group had the option of piloting the YHS with or without the sexual health module.

Methods

Focus groups with students were conducted by the study coordinator and trained data collectors directly following the completion of the survey. In addition to written notes, the focus groups were tape recorded so that researchers could engage in repeated listening of the sessions during analysis. Recordings were labelled with a code, rather the school name in order to retain confidentiality for the participants.

Researchers found that students felt more comfortable sharing ideas in groups that were homogenous by age and gender. As such, efforts were made to ensure that focus groups consisted of students of the same age and were divided by gender when possible. Additionally, efforts were made to keep group sizes below 15 students.

Each focus group was semi-structured and took approximately 20-40 minutes. At the beginning of the session, students were given a brief background of the YHS and the upcoming implementation in the fall of 2012. All students were assured of confidentiality and teachers/supervisors were asked to remain out of the room during the focus group in order to reduce influence on student responses.

Focus group questions were intended to assess student comprehension and comfort level with both the overall survey and some of its specific questions. The semi-structured nature of the focus group ensured that targeted areas of interest were explored but also gave space for students to introduce new topics of discussion.

Focus Group Questions

Students in each focus group were asked a series questions relating to the overall survey including:

1) General impressions of the survey
2) Honesty and confidentiality around the survey
3) Length of the survey

4) Front cover and its instructions
5) Comfort with "sensitive" questions (facilitators were careful to not be specific but rather focused on general impressions around sensitive topics)
6) Use and understanding of matrices in the survey
7) Instructions for the PE/HE curriculum portion of the survey
8) Spacing of the survey and placement of response categories
9) Use of certain terminology (for example- past 30 days versus past month)
10) Understanding of instructional techniques in the survey (for example- "choose one" and "choose all that apply" instructions)
11) Impressions and understanding of student codes

In addition, each group was directed to specific questions on the survey and asked about their understanding of these questions:

1) Height and weight
2) Moderate and vigorous physical activity

Analysis

All focus group analysis was done using NVivo 9 software to condense notes into a set of thematic codes. From these, broader concepts surrounding student comprehension and comfort in filling out the survey were explored. Particular attention was paid to areas of confusion or discomfort by the students as well as any barriers the students had to completing the survey.

Results

Focus group results fell into four broad categories: survey format and layout, survey comprehension, confidentiality and survey implementation. Overall, student responses were fairly consistent across all categories with the exception of confidentiality in which there was a broader range of thoughts and impressions. Despite this, researchers felt that by the end of the focus group sessions saturation had been reached for each category. A detailed list of the specific changes that were made to the survey tool and implementation based on student feedback can be found in Appendices A and B.

Student comments relating to survey format and layout included ideas to improve visual spacing and clarity (ie.- use of single response columns, removing the two page split between linked physical activity questions), suggestions to use circles instead of boxes for shading and the option of bullet points to shorten and clarify instructions. Overall, students seemed to find the survey visually easy to understand and suggestions for change were consistent across different groups.

Students discussed comprehension of the overall survey as well as comprehension of specific questions. Themes emerged quickly with regards to the questions and areas that students found confusing and these were consistent across age groups and genders. Students suggested wording improvements for section headings, response categories and questions as well the addition of examples to certain questions in order to improve clarity. Questions that were misunderstood by a broad range of students were considered for exclusion from the final survey (e.g.- spirituality section).

Feedback relating to the use of students codes and the confidential nature of the survey was discussed at length in each focus group with students offering a wide range of opinions on the topic. Overall, students did not feel that the questions were too sensitive in nature although there was some mention that questions relating to sexual health were slightly more "awkward". A more detailed look at these discussions and the changes made in response to student feedback can be found in Section 3- Effect of Student Codes.

Participants were not asked any direct questions relating to the survey implementation but multiple students offered comments on this topic. Feedback included ideal places to use verbal prompts (eg- prompt younger students to ignore the PE/HE section) and ways to make sure that the survey remains private (eg- keep teacher at front of the room and treat it like a test to promote privacy).

2. Survey Reliability- Test-retest sample

Reliability refers to the consistency of a set of measures. A survey is said to have high test-retest reliability when participants give the same responses to the survey questions on two different occasions separated by a short time frame.

Methods

In order to assess the reliability of the survey, one half of the pilot project sample completed the survey twice. Students in this group completed the survey during school hours and then again one week following. Schools that participated in test-retest completed the YHS Core Questions module (without Sexual Health).

Analysis

Kappa and weighted Kappa statistics are commonly used to assess reliability. However, due to small sample sizes, percent agreements were used for this project. The percent agreement between responses at T1 and T2 were calculated for each question or derived variable. Due to time constraints, reliability analyses were not completed prior to the full implementation of the YHS and therefore no changes were made to the final tool based on these results.

Results

Percent agreements were calculated for 116 relevant questions and variables. The percentages ranged from 46.4% to 100.00%

Table 3- Percent Agreements

Range of % agreement	# of questions with % agreement in this range (%)
< 49.9%	1 (1.0)
50.0- 74.9%	38 (32.8)
>75.0%	77 (66.4)
Total # of Questions	116

3. Effect of Student Codes- Focus Group and Test-retest samples

Methods

In order to test the effect of student codes on responses to sensitive questions, test-retest students were randomly placed into one of four coding groups. Students were randomly assigned to each group in order to avoid clustering within a classroom. Unlike participants in the focus group methodology, test-retest students were not verbally instructed by the teacher to write their name on the front page. Instead they were given their survey and told to read the front instructions. Those assigned to have a student code had written instructions to print their name and then remove the front page, those assigned to have no student code did not print their name on the front.

1) Group 1- these students did not have student codes on either their first (T1) or second (T2) survey.
2) Group 2- these students had student codes at T1 but not at T2
3) Group 3- these students had student codes at T2 but not at T1
4) Group 4- these students had student codes at both T1 and T2

Table 3 shows the design and breakdown for these groups. Table 4 shows the demographic profiles of the student code groupings.

Table 4- Design of student code groups

	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%)
T1	No code	Code	No code	Code
T2	No code	No code	Code	Code
Total	19 (23)	24 (29)	17 (20)	24 (29)

Table 5- Demographics for student code groups

	Group 1 (%)	Group 2 (%)	Group 3 (%)	Group 4 (%)
Male	8 (42)	10 (42)	10 (59)	13 (54)
Female	9 (47)	12 (50)	6 (35)	10 (42)
Missing	2 (11)	2 (8)	1 (6)	1 (4)
7 & 8	4 (21)	4 (17)	4 (24)	5 (21)
9 & 10	12 (63)	16 (67)	9 (53)	17 (71)
11 & 12	3 (16)	4 (17)	3 (18)	2 (8)
Missing	0 (0)	0 (0)	1 (6)	0 (0)
Total	**19**	**24**	**17**	**24**

Test 1- Association between Students with Codes and Students without Codes within T1

Analysis

Analysis was performed on students at T1 in order to test whether there was a difference in how coded and non-coded students answered 18 sensitive questions within the same testing time period. This analysis was performed on all students with data at T1 (N=99), regardless of T2 completion status. T1 students were categorized into a no-code group (Group 1 & Group 3, N=45) and a code group (2's & 4's, N= 54).

Fisher's Exact test was used to assess differences with alpha set at 0.05. Sensitive questions included those relating to tobacco, alcohol and substance use, injury prevention, school connectedness, mental health, feelings of hopelessness, tanning behaviours, Body Mass Index (BMI), body image and bullying.

Results

Seventeen of the eighteen tests were insignificant indicating that there was no difference in how the two groups answered the sensitive questions.

However, BMI, as determined by self-reported height and weight was found to be significantly different between the coded and non-coded groups (p= 0.022). Interestingly, within this group, a larger proportion of students with student codes reported being overweight or obese. It should be noted that 38% of the data was missing for this variable leading to small numbers for each category, which may indicate the instability of the variable and explain these results. Table 5 shows the results for this analysis.

Table 6- Association between student code and no student code for sensitive questions at T1

Question Topic	P-value for Fisher's Exact Test
Smoking status	0.705
Cigar use	0.319
Marijuana use over past month	0.792
Marijuana use over past year	0.723
Alcohol use	0.527
Driven under the influence of alcohol	0.464
Ridden with a driver under the influence of alcohol	0.989
Use of artificial tanning	0.258
Been asked for personal info over the internet	0.790
Been threatened with a weapon	0.864
Been bullied	0.978
Feel safe at school	0.467
Seatbelt use	0.800
Use of bike helmet	0.247
Mental health continuum	0.080
Feelings of hopelessness	0.806
Body image	0.919
BMI	0.022*

*Significant with alpha set at 0.05

Test 2- Reliability between T1 and T2 by Code Group

Analysis

Analysis was also performed on the 84 students who completed surveys at T1 and T2 to determine if their code group placement (Groups 1-4) affected whether their answers on 12 sensitive questions changed between T1 and T2. For this analysis, a "different" answer between T1 and T2 included any change in answer regardless of direction and also included any change from missing to not missing and vice versa. While some of the sensitive questions chosen overlapped with those looked at in Test 1, others were unique to Test 2.

Again, Fisher's Exact test was used to assess differences with alpha set at 0.05.

Results

Results show that the code group that a student was placed into did not have a significant effect on whether students changed their answers between T1 and T2 for eleven of the twelve sensitive questions chosen for study.

There was a significant difference between groups on the mental health continuum (p=0.043). However, the majority of students who changed their answers between T1 and T2 for this variable were in Groups 1 and 4 which were the two groups whose coding status remained the same between T1 and T2 (either coded at both or non-coded at both). Thus their change in answer between the two tests could not have been related to a change in coding status. Table 6 shows the results for this analysis.

Table 7- Reliability between answers at T1 and T2 by coding group

Question Topic	P-value for Fisher's Exact Test
Marijuana use over past month	0.950
Marijuana use over past year	0.950
Alcohol use	0.989
Binge drinking	0.892
Been asked for personal info over the internet	0.971
Been bullied	0.920
Been bullied over the internet	0.479
Seatbelt use	0.346
Use of bike helmet	0.257
Mental health status	0.043*
Feelings of hopelessness	1.000
BMI	0.981

*Significant with alpha set at 0.05

Test 3- Focus Group Results on the Effect of Student Codes

Method

All students that participated in the survey followed by focus group (see face validity section for further details on focus group methodology) were instructed to write their name on the front page of their survey before tearing this page off and handing it in separately. In addition, students were instructed to place their completed survey in their own individual envelope so that other students or their teacher could not see their answers. During each focus group session, students were asked the following:

"How did you feel about writing your name on the front page? How do you think that other kids would feel about this? What did you think about putting the survey in your own envelope?"

Results

The analysis of focus group transcripts showed that overall, students were divided about having their names on the front page. Some felt the envelopes and front page removal helped with confidentiality while others didn't think they made a difference. The following comments were from three students in the same focus group (Gr. 10-12):

"I didn't put my name." (Female)
"I put mine, but I didn't really want to." (Female)
"I didn't care." (Male)

Overall, students were very aware of the name on the front and although some stated that they did not mind writing their name, many wanted a clearer explanation of what the data would be used for and who would see their information.

"If you just said, 'oh here's a survey, read the front and do it' they wouldn't be as honest as like, when you guys talk about and you reiterate confidential and private a whole bunch of times. It helps for people to say, 'oh yeah, I guess no one is going to see this. I'll answer it more honestly." (Gr. 9-12 Male)

"I think that has to be a little bit more clear, cause it says your teacher won't see it, you family won't see it, but I'm just like well, what if?" (Gr. 10 Female)

In addition, students were also asked whether they thought that kids would answer the survey honestly. Again, the students were divided:

"If you didn't ask for the names at the start, then people would answer truly, but...if you got rid of that first page, then people wouldn't care because there's no way that you can know." (Grade 10-12 Male)

"Yeah, like when I saw that there were names, I was like "okay, well this is not anonymous, now I'm going to have to be careful what I answer." (Grade 10 Female)

Conclusions Related to the Student Code Process

Based on the pilot study results regarding student codes, efforts were made to increase transparency around the student code process. As such, the instructions on the front page of the survey as well as the verbal classroom instructions were adapted in order to more clearly outline the purpose and confidentiality of the survey. In addition, all parent and school materials were adapted to clearly outline the code process so that stakeholders could understand why student code information was being collected as well as how it would be stored and used. Although students placed their surveys in an individual envelope during the pilot project, this practice was not continued during the full implementation of the YHS due to financial considerations.

4. Response Burden- Focus Group & Test-retest Samples

Response burden is the effort required to respond to a survey and is often quantified as the time it takes to fill out a survey.

Methods

The YHS is completed in a school setting during class time. Prior to the pilot study, it was estimated that the survey would take 30-40 minutes to complete. In order to gain a better understanding of the specific time burden of the survey, the study coordinator recorded the start and finish times for each student in order to calculate a time to completion per student.

Analysis

Analyses looked at the time to completion (in minutes) for all students writing the survey for the first time. This included all focus group and T1 participants, as well as any T2 participants who had been absent on the day that their class had completed T1 of the test-retest schedule. Data was further explored to look for differences by age or gender.

Results

The mean and mode were the same for both modules of the survey and there was only a small age effect. Grade 11 and 12 students were more likely to finish the survey in less than 20 minutes while Grade 7 & 8 students were more likely to take more than 40 minutes to finish. However, this effect was minimal and the majority of all age groups took less than 40 minutes to complete the survey.

Table 8- Time to Complete Survey

	Without Sexual Health	With Sexual Health
Mean	28.3 mins	28.26 mins
Mode	30.0 mins	30.0 mins
Range	11.0-61.0 mins	20.0-35.0 mins

Table 9- Time to completion by module

	Without SH- N (%)	With SH- N (%)
<20 mins	24 (10)	0 (0)
20-29 mins	121 (49)	12 (44)
30-39 mins	83 (34)	15 (56)
>40 mins	19 (8)	0 (0)
Total	**247 (100)**	**27 (100)**

Table 10- Time to completion by age (modules combined)

	Grade 7 & 8	Grade 9 & 10	Grade 11 & 12
<20 mins	0 (0)	6 (5)	15 (28)
20-29 mins	23 (41)	65 (52)	29 (54)
30-39 mins	26 (46)	45 (36)	7 (13)
>40 mins	7 (13)	9 (8)	3 (6)
Total	**56 (100)**	**125 (100)**	**54 (100)**

Focus Group Results Relating to Response Burden

In addition to the calculated completion times, focus group students were asked what they thought of the length of the survey and whether they paid more attention to one particular part of the survey (eg- beginning or end). Although some students felt that the survey may be a little long for younger students, overall, students indicated that they were fine with the length:

"When it started, it started easy and then it just flowed with it so it was easy to answer the other questions." (Gr. 7-9 Male)

"Yeah, I was pretty much focused all the way through." (Gr.7-9 Female)

"It was really, like to the point, not that the questions could have been broken up into more questions." (Gr. 7-9 Male)
"Like, it wasn't unreasonable but it was on the longer side of a survey. I've done surveys before and it was typical." (Gr. 9)

"I think for 7's that might still be pushing it a bit." (Gr. 9 Male)

Conclusions Relating to Response Burden

The results from the calculated completion times and the student feedback indicated that the survey was an appropriate length and could be finished by most students during a classroom period. It is worth noting however that one Grade 10 classroom of 27 students had 10 participants who did not have time to complete the full survey as the scheduled classroom period was only 33 minutes in length. This indicated that classroom periods that are scheduled for less than 35 minutes may have a larger proportion of students unable to complete the survey, especially among the younger grades. Despite some changes to the tool based on these pilot results, efforts were made to keep the final YHS a similar length to the pilot tool.

5. Implementation Feasibility- Teacher Feedback Forms and Focus Group

Implementation feasibility refers to the practicality of the process and protocols used during survey administration.

Methods

To test implementation feasibility of the YHS, teachers were asked to complete a feedback form to determine clarity and ease of survey implementation and instructions as well as comment on student behaviour during implementation. In addition, the study coordinator used direct observation to create notes throughout the pilot project recording both challenges and successes during the survey administration.

Results from Teacher Feedback Forms

Participating classroom teachers answered three questions about student behaviour during the survey implementation. The questions related to the noise level in the classroom, whether students were focused or unfocused and whether or not students were working independently on the survey. These Likert scale questions ranged from 1 to 5 with lower numbers indicating quiet noise level as well as focused and independent behaviour. In addition, teachers were asked open-ended questions about whether they found the survey instructions clear and helpful and whether they would change anything about the survey implementation. They were also given an open space for additional comments. If the teacher was unable to complete the feedback form, the survey coordinator filled it in instead.

In total, feedback forms were completed in five of the six FG classrooms, five of the six T1 classrooms and four of the six T2 classrooms. The mean Likert scores for all three

questions were <2.0 indicating a quiet classroom with focused and independently working students. There was some indication that classes were slightly louder and less focused during T2 implementations however this was small increase that may have indicated that students were completing the survey more quickly and working on other things.

Teacher comments on the feedback forms were predominantly positive and indicated that the instructions and information package for the survey were clear and easy to implement. They also indicated that although some students found the survey long (such as non-English speaking students), most seemed to take it seriously and understand the questions.

Results from Focus Groups Relating to Implementation

Although students were not asked specific focus group questions relating to the general implementation of the survey, some students mentioned the physical environment and spacing of desks during the survey implementation:

> *"Yeah, 'cause sometimes you don't have a choice who you sit beside and maybe you don't feel comfortable with the person you're beside or maybe they are the ones that are bullying you, so don't really want another reason for that." (Gr. 12 Female)*

> *"You could always do it as if you're writing an exam, you just move the desks really far apart from each other." (Gr. 7-9 Male)*

In addition, students also noted that they would like teachers to stay at the front of the classroom during implementation of the survey.

Conclusions Related to Implementation Feasibility

Overall, the survey was implemented with ease in the classroom setting. A few additions/changes were made to the survey protocol based on feedback. For example, there was one teacher comment that prompted changes to the pilot protocol during the course of the pilot project. The first was a question as to whether or not a classroom teacher should help the students if they had questions during the survey. In order to maintain confidentiality, it was decided that teachers should <u>not</u> help students in case the teacher presence prompted the student to answer differently. This teacher feedback came early in the pilot process and as a result, the teacher instructions were changed to include a **bolded** instruction not to help the students. This instruction also helped address the student desire for teachers to stay near the front of the classroom during the survey in order to increase privacy.

A second teacher comment suggested that there should be an instruction added indicating what the students should do if they made a mistake on the survey and needed to change an answer. This instruction was added to the front page of the final YHS survey as well as to the classroom instructions read aloud by teachers at the beginning of the survey.

Again, this change addressed similar student concerns over what to do in case of a mistake.

6. Analysis Feasibility- Student surveys

In order to trial the analysis feasibility of the YHS, all surveys were scanned and then analyzed by the Epidemiology Department of CancerCare Manitoba using SAS 9.2. Methods for deriving variables such as smoking status, physical activity rate and fruit and vegetable consumption were adapted from the first implementation of the YHS. Specific details on changes made to the YHS tool based on results of the pilot study can be found in Appendices A and B.

Appendix A- Changes to the YHS tool based on pilot results

Table 11- Changes to specific questions based on pilot results

Question in Pilot YHS	Question in Final YHS	Change/Rationale
Q4: How old are you today?	Response option added: • 19 or older	Response option '19 or older" included so that analysis can be narrowed to 18 and younger if needed. This was seen as a more traditional definition of "youth."
Q5: What month were you born? Q6: What year were you born?	Removed from final YHS tool	Questions were originally included for calculation of BMI using CDC guidelines. Decision was made by analysis team to instead set all birthdays to June 30th and use year of birth calculated by age (Q 4). This was seen as a more realistic analysis option for population level statistics.
Q9: How much do you weigh **without** your shoes on? (Please write your weight on the line **AND** then fill in the appropriate numbers for your weight in pounds **OR** kilograms). Q10: How tall are you without your shoes on? (Please write your height on the line **AND** then fill in the appropriate numbers for your height in feet and inches OR centimeters).	Q7: Without my shoes on, I believe my weight is: [GRID STYLE RESPONSE] Q8: Without my shoes on, I think I am this tall: [GRID STYLE RESPONSE]	Focus groups suggested that students found presence of fill in the blank and grid confusing. Decision was made to include only the grid for both height and weight questions. In addition, the response bubbles for the inches section of Q8 were changed one vertical column of inches from 0-11 instead of two separate columns for ten's and one's. Focus groups suggested that the use of two columns in the pilot tool to represent 10 and 11 inches was confusing.

Q13: Do you have a part time job outside of school hours?	Q11: Do you have a part-time job outside of school hours? (baby-sitting, restaurant, etc.)	Focus groups suggested that adding examples would make the intent of this question clearer.
Q19: Do you have a belief in a creative source of meaning and purpose for life (eg God, Great Spirit, source and centre of spiritual energy, etc.)? Q20: Does this belief have a positive or negative impact on your life? Q21: Do you belong to a spiritual practice or faith community	Removed from final YHS tool	Focus group feedback indicated that these three questions caused a lot of confusion with students and were poorly understood. Decision was made to remove them from the final YHS tool.
Q25: How often do you wake up feeling refreshed?	Removed from final YHS tool	Decision was made to only keep two sleep quality questions. This one was removed.
Q26: How often do you find it difficult to stay awake during your normal waking hours when you want to?	Q21: How often do you find it difficult to stay awake during class or at school?	Feedback indicated that the wording of this question was confusing to students. It was decided that the behaviour of interest was lack of sleep leading to tiredness during a school day and was re-worded to reflect this.
Q38: In a typical week, mark how many hours (outside of school) you spend in front of a screen, for example, watching tv/movies, playing video/computer games, chatting, text messaging and surfing the internet (e.g. Facebook , Twitter, etc). Typical **weekday** (e.g. Monday)	Q35: In a typical week, mark how many hours **(outside of school)** you spend in front of a screen, for example, watching tv/movies, playing video/computer games, chatting, text messaging and surfing the internet (e.g. Facebook , Twitter, etc).	Response options for this question were changed from fill in the blank to grid style in order to make scanning and analysis more manageable. In addition, "outside of school" was bolded in the question stem in order to draw student's attention to it.

_____ hours a day Typical **weekend day** (e.g. Saturday) _____ hours a day	[GRID STYLE RESPONSE]	
Q41: Yesterday, how many times did you eat or drink the following: [Categorical time responses]	Q36: **Yesterday**, how many times did you eat or drink the following: [Continuous time responses]	Answer categories were changed from categorical (1-2 times, 3-4 times, etc.) to a continuous spectrum from 0-8+ in order to allow more options for analysis and comparison to the previous YHS implementation. In addition, "yesterday" was bolded in the question stem.
Q44: During school do you usually: **(Please choose one)** • Bring lunch from home • Eat lunch at home • Etc.	Q39: For lunch on school days do you: **(Choose all that apply)** • Bring lunch from home • Eat lunch at home • Etc.	Focus group students felt this question should allow them to choose more than one option as their lunch habits were dynamic. In addition, the question was re-worded to make the intent clearer.
Q56: During the past month, were you exposed to second hand smoke…	Response option added: e. in public?	Students suggested the inclusion of a fifth option "in public" as they felt that is where they are most often exposed to second hand smoke.
Q63: During the past month, how many times did you **drive** a car or other vehicle after you had been drinking alcohol? • I do not drink alcohol/I do not drive	Q58: During the **past month** (30 days), how many times did you **drive** a car or other vehicle after you had been drinking alcohol?	The first response option in the pilot question was seen as confusing to students because the two options were not mutually exclusive. It was simplified to "I have never done this" in the final tool. In addition, the last two option

• I have done this, but not in the past month • 1 time • 2 or 3 times • 4 or 5 times • 6 or more times	• I have never done this • I have done this, but not in the past month • 1 time • 2 or 3 times • 4 or more times	categories from the pilot were condensed to "4 or more times"
Q64: During the past month, how many times did you **ride in** a car or other vehicle **driven by someone** who had been drinking alcohol?	Q59: During the past month, how many times did you **ride in** a car or other vehicle **driven by someone** who had too much to drink?	Focus group feedback suggested that it was not clear whether to include cases where a driver had only a drink or two as per the legal limit (such as a parent having wine at dinner). Question was reworded to imply a driver who had too much to drink to be driving. In addition, the last two option categories from the pilot were condensed to "4 or more times"
Not included in pilot YHS	Q60: During the **past month** (30 days), how many times did you **drive** a car or other vehicle after you had been using illegal drugs including marijuana? Q61: During the **past month** (30 days), how many times did you **ride in** a car or other vehicle after **driven by someone** who had been using illegal drugs including marijuana?	Questions 60 and 61 were identified by stakeholders as important and added after the pilot study.

Q65: How many times in the **past year** (12 months) has anyone done any of the following **TO YOU:**	Response option added: • Everyday Response stem added: e. Said something bad about your sexual orientation or gender identity	Focus group feedback suggested the addition of response option "everyday" to the final tool. In addition, stakeholders included a response stem dealing with bullying in relation to sexual orientation/gender identity.
Q74: Which of the following are the **major reasons** you do not use condoms all the time? **Choose all that apply**.	Response option added: • I only have oral sex	Stakeholders included a response option pertaining to oral sex.
Not included in pilot YHS	Q73: How often do you feel comfortable talking to the person(s) you are having sex with about STIs?	Question was included based on stakeholder feedback.
Q78: What are your preferred sources of information about sexuality/puberty/birth control/STIs? **Choose all that apply**.	Response options changed: • Media (TV, movies, magazines, pamphelts) • School (teacher, nurse or counsellor, presenter) • Public health nurse/Women's Health Clinic/Nurse practitioner • Doctor	Response options were adapted based on stakeholder feedback.

Q79: As part of your Physical Education/Health Education (PE/HE) course this year, approximately how many hours of physical activity time outside of regular class time are or were you required to participate in and report to your teacher?	Response categories updated to: • This is not a requirement • Less than 10 hours • 10-19 hours • 20-49 hours • 50-74 hours • 75 or more hours • I don't know	Students indicated that the response options given in the pilot were hard to understand and that a range of hours might be easier to choose from.
Q82: Have you ever met with your PE/HE teacher to discuss your out-of-class physical activity?	Response option added: • Does not apply	Students and stakeholders felt that "does not apply" needed to be added as a response option.

Appendix B- Changes to the YHS format based on pilot results

Table 12- Changes to survey format based on pilot results

Pilot YHS	Final YHS	Change/Rationale
Check boxes used for all questions	Changed to bubbles for all questions	Focus group feedback indicated that boxes implied "checking" while bubbles implied "shading in." All boxes were changed to bubbles to increase likelihood of full shading to help with scanning.
Response options often appeared in two columns.	All response options moved to one column.	This was updated to reduce the likely that students would miss possible response options that appeared in a second column. In addition, it spread the spacing of the survey out to make easier to understand visually.
Section headings not numbered	Each section heading was numbered and capitalized (SECTION 1, SECTION 2, etc)	Updated for visual ease and clarity.
Only select matrix style questions included colour highlights.	All matrix style questions were updated to include a green highlight on every second horizontal line.	Focus group feedback indicated that highlighting every other line helped guide the eye so students didn't lose their place in the matrix.
"Past month"	All time periods that included "past month" were updated to read **past month** (30 days).	Bolding was used to highlight the time period in question and "30 days" added in so that students would all define "past month" in the same way.

Response options used: • Never • Rarely • Sometimes • Most of the time • All of the time • I don't know	Response options updated to: • Never • Rarely • Often • Always	Number of response options was narrowed down to remove similar options (eg- rarely, sometimes). This will help with analysis and reporting. In addition, "I don't know" was removed from all questions unless it was considered a valid response. This was to reduce likelihood that students automatically answered "I don't know" without considering other options.