Canadian Campus Wellbeing Survey | Bien-être sur les campus canadiens

Development of the Canadian Campus Wellbeing Survey (CCWS)

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Introduction

The Canadian Campus Wellbeing Survey (CCWS) was created to fulfill a vision to build and implement a comprehensive and coordinated Canadian Post-Secondary Health & Wellbeing Evaluation System that integrates public health policy, practice, evaluation, surveillance and research. To inform intervention at the post-secondary setting, a mechanism is required to assess the prevalence and correlates of mental health and physical health behaviours at a local level. In turn, this information guides intervention prioritization, selection, implementation, and ongoing evaluation and program/health service refinement. The CCWS consists of a 20-minute core module completed by students at participating institutions. Institutions may also elect to add additional items to the tool for their own specific needs. The CCWS core module consists of mental health and physical health behaviour questions. This technical report provides details on the development and selection of the measures used in the core module of the CCWS.

Methods

Identifying Content Areas for the Questionnaire

Stakeholder Delphi Mapping

Nineteen health service providers or mental health experts from 5 Canadian provinces participated in a 3-round modified Delphi survey by email and an in-person roundtable meeting to identify wellbeing and health behavior measurement priorities and indicators for the CCWS. Results from this process are described by Faulkner and colleagues (2019). Specifically, 9 core sections were identified including 1) mental health assets, 2) campus climate and student experience, 3) mental health deficits, 4) health service utilization/health seeking, 5) physical health/health behaviours, 6) academic achievement, 7) substance use, 8) food security, and 9) sexual health behaviours.

Expert Panel Meeting

In September 2018, our team members with expertise in survey development (Faulkner, Kwan, Ramanathan) and mental health (Faulkner), convened a working group of six research experts in psychiatric and health behaviour epidemiology and an additional institutional data analyst to identify the best measures reflecting the priorities identified during the stakeholder mapping process and to develop initial drafts of the questionnaire. Public health representatives were invited to ensure the tools address stakeholder needs, and produce relevant and useable information. To reflect both science- and practice-based concerns, initial conceptualization of the content areas were informed by past and ongoing research, national and provincial strategic priorities, school programming, and consultations with researchers, clinicians, public health professionals, and postsecondary stakeholders.

Primary Considerations for Selecting Measures for the Questionnaire

There were a number of considerations for determining which measures would be used in the CCWS to reflect the 9 core sections identified by stakeholders:

1) To minimize the burden on students and ensure survey completion (addressing limitations of other national post-secondary health surveys), our team was challenged with having to select items that balanced both the depth of the data required for measuring each core outcome and

the breadth of data that could be measured for each core outcome within this brief tool (about 20 minutes).

2) In order to make cross-study comparisons to existing population-based surveys, items were largely derived from well-established and short self-report scales from youth/young adult nonclinical populations, and/or used in large and long-running national and provincial surveys (e.g., the Healthy Minds Study [HMS], the Canadian Community Health Survey [CCHS], and the National Survey of Student Experience [NSSE]). A particular consideration was aligning the CCWS with the Positive Mental Health Surveillance Indicator Framework (PMHSIF) of the Public Health Agency of Canada (https://health-infobase.canada.ca/positive-mental-health/).
3) As a means for helping stakeholders and researchers to place CCWS data and results into an appropriate context for action, the CCWS team wanted the core measures to provide data that would also be compatible with benchmarking against existing national (or international) public health guidelines or recommendations for young adult populations.

Core Measures for the Questionnaire

Applying the above considerations, the core measures (and specific items) were chosen for the draft CCWS:

1) Mental Health Assets

Emotional, social and psychological wellbeing were assessed using Keyes' Mental Health Continuum-Short Form (MHC-SF; Keyes, 2005). The MHC-SF is a 14-item self-report questionnaire designed to assess and evaluate positive mental health symptoms over a one-month period. The short form of the MHC has shown excellent internal consistency (> .80) and discriminant validity in adolescents (ages 12-18) (Keyes, 2006; Lamers et al., 2011). A French Canadian version of the MHC-SF has also demonstrated evidence of internal consistency and reliability in postsecondary students in Quebec (Doré et al., 2017). In the CCWS, item 6 was modified from the original questionnaire according to Keyes suggestion: "society is becoming a better place for all people" (Keyes, 2009).

Resilience (control and self-efficacy coping) to overcome challenges were measured using Canadian Community Health Survey (CCHS) questions, on a 5-point likert scale from 1 (poor) to 5 (excellent). Global self-rated mental and physical wellbeing from the CCHS were measured using the same scale.

2) Campus Climate and Student Experience

To assess campus climate we drew conceptually from the work of the National School Climate Center (NSCC; https://www.schoolclimate.org) to map questions onto four essential dimensions of school climate (safety, teaching & learning, interpersonal relationships, and institutional environment). We did not find validated measures to assess these dimensions but have used eight items from the Healthy Minds Study 2017-2018 (HMS; http://healthymindsnetwork.org/research/hms) and Undergraduate Experience Survey from UBC (UES-UBC; http://pair.ubc.ca/surveys/undergraduate-experience-survey/). Response options included a 7-point likert-scale from 1 (strongly disagree) to 7 (strongly agree). We included a 'Neither agree nor disagree' option to the original scale.

Two items taken from the HMS assess feelings of safety on campus during the day and at night. The response options range from 1 (very safe) to 6 (very unsafe), and we included a 'Not applicable' and 'I don't know' option.

3) Mental Health Deficits

To measure depression and anxiety, CCWS makes use of the Kessler Psychological Distress Scale (K10). This 10-item scale yields a global measure of distress based on questions about anxiety and depressive symptoms that a person had experienced over that past month. This tool has shown good screening properties in detection, according to the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (DSM-IV), of mood and anxiety disorders in a range of epidemiological samples including non-Western and indigenous samples (Furukawa et al., 2003; Furukawa et al., 2008; Browne et al., 2010; Fassaert et al., 2009; Bougie et al., 2016).

The sources of perceived stress and extent of impact on academic progress items are consistent with those in the 2017 National Survey of Student Experience (NSSE; http://nsse.indiana.edu/). The 8-items are rated as 'as major obstacle' (1), 'a minor obstacle' (2), or 'not an obstacle' (3). The psychometrics properties of these measures derived from the NSSE are not available.

Two items from the Canadian Community Health Survey- Mental Health 2012 (CCHS-MH; http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5015) were included to assess suicidal ideation and planning over the past 12 months (three response options: yes (1)/no (2)/prefer not to answer (3)).

4) Health Service Utilization and Help-Seeking

Knowledge of mental health services available on/off-campus was modified from the HMS. We split the original question to differentiate between on- and off-campus. We also developed two similar items for the CCWS to assess student knowledge of physical health services on- and off-campus. Response options for these 4 items range from 1 (strongly agree) to 6 (strongly disagree).

The CCWS includes two HMS items assessing perceptions of support systems on campus (response options range from 1 (strongly agree) to 6 (strongly disagree)) and awareness of mental health outreach efforts on campus (response options: 0 (No) and Yes (1)).

We developed a new item to assess student use (yes (1)/no (0)) of campus health services for primary care (such as routine check-ups with a doctor).

From the HMS, we modified the 1-item question on help-seeking intentions to include professional clinicians as another response option. We also included 'I don't know anyone to talk to about this' and 'I prefer not to talk to anyone about this' as response options.

5) Physical Health/Health Behaviours

Sleep

Following evidence-informed recommendations to measure self-reported sleep health of Canadian adults for public health surveillance (Chaput, 2017), we adopted the suggested sleep module – short version (excluding questions regarding electronic use) in the CCWS.

Time to sleep and wake up on weekdays and weekends were modified from the HBSC (response options modified from every hour to every half hour). Total sleep on weekdays and weekend days are calculated from these 4-items. Quality of sleep rating was sourced from the National Health and Nutrition Examination Survey (NHANES; https://www.cdc.gov/nchs/nhanes/index.htm) and the International Study of Childhood Obesity, Lifestyle and the Environment *(*ISCOLE; Katzmarzyk et al., 2013), from 1 (very good) to 4 (very bad).

Physical activity

Time spent in vigorous and moderate physical activities (average mins/day in last week) were

derived from the International Physical Activity Questionnaire (IPAQ), which has demonstrated moderate correlations and high levels of agreement with accelerometry, and moderate intraclass correlations (0.52; CI: 0.33 – 0.66) amongst University students (Murphy et al., 2017).

We developed a new item for CCWS to assess participation in organized sport (varsity, club/community sports/intramurals/none) over last year.

Sedentary behaviour/screen time

Three individual questions assessed time (hours, minutes) spent using screens (watching TV, using computers during leisure), in sedentary transportation, and total sitting time. These questions were sourced from Prince et al. (2017) who developed the International Sedentary Assessment Tool (ISAT) using modified individual questions from other questionnaires with acceptable reliability across population health surveys.

6) Academic Achievement/Experience

Three items from the UES-UBC 2018 were included to assess institutional learning environment ('*My institution provides a supportive learning environment*', '*My institution uses teaching strategies designed to support learners'*, and '*My institution provides opportunities for students to explore their full potential'*) and one item from HMS assessed confidence to overcome academic challenges ('*I am confident that I will be able to finish my degree no matter what challenges I may face*') on a 6-point likert-scale from 1 (strongly disagree) to 6 (strongly agree). We also included an 'I don't know' option.

7) Substance Use

Alcohol

Binge drinking over the last month was assessed using a question from Canadian Health Measures Survey (CHMS), but we modified the question to just five drinks (did not differentiate between males/females).

Tobacco use

Tobacco-use (cigarette smoking and vaping) questions included 5-items from the Canadian Postsecondary Education Alcohol and Drug Use Survey 2018 (CPADS; courtesy of Health Canada).

Cannabis

Lifetime and previous year cannabis use and types questions were from the CPADS.

Other drugs

One item from Public Health Agency of Canada (PHAC) assessed use of other drugs (e.g., opioids, study drugs; Response options: 'No, I have never done this', 'Yes, in last 12 months', 'Yes, but not in last 12 months').

Stimulants

Previous year stimulant use, duration and prescription were assessed using CCHS measures.

8) Food Security

Food insecurity (the inadequate or insecure access to food due to financial constraints) can contribute to a higher risk of poor physical and mental health (anxiety, depression, other mental health disorders) in University students ("Household Food Insecurity in Canada," 2018; Lee et al., 2018). Six-items from the CCHS Household Food Security Survey Module (HFSSM; https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-

surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/household-food-insecurity-canada-overview/household-food-security-survey-module-hfssm-health-nutrition-surveys-health-canada.html) were used to assess food security (physical availability of food, economic and physical access to food, food utilization, and stability of these dimensions over time). We modified response options in two questions to parse out 'I don't know' and 'I prefer not to answer'.

9) Sexual Health

Safe sex practice questions (ever and contraceptive use) were taken from the Sexual Behaviour module from CHMS. 'Sexual intercourse' was not defined for respondents and this is common in behavioural surveys of sexual activity (Hansen et al., 2004). A single item from the Golombok Rust Inventory of Sexual Satisfaction (GRISS; Rust & Golombok, 1985) was used to assess sexual satisfaction (rating from 1 (never) to 5 (always)). We also included an 'I prefer not to answer' option.

Demographic Measures for the Questionnaire

In order to gain a broader understanding of student experience from a variety of perspectives, the demographic measures in the CCWS include age (month and year of birth), ethnicity, immigrant status, place of residence, mode and length of commute to campus, hours of paid employment, gender identity, trans experience, sexual identity, relationship status, disabilities, mother/father education. Questions were recommended by the UBC Office of Equity and Inclusion.

Other demographic information (level (undergraduate/postgraduate), year of study, student status (full-time/part-time) and program and faculty of study, cumulative grade point average, domestic/international status) can be linked to data provided by the host institutions.

Pilot Testing the Questionnaire

Feasibility

The first stage of piloting the CCWS involved getting feedback from students to ensure that the questionnaire was easy to complete, understandable, and acceptable. Sixteen individuals (75% female, 63% undergraduates) completed the survey online in a lab setting and then participated in a short interview about their experiences of completing the survey. Three multiple choice questions asked students whether the questionnaire was easy to understand (not at all easy, not very easy, fairly easy, very easy), how they found the length of the questionnaire (much too long, a bit long, about right, a bit short) and how they thought the questions in the survey would make most students feel (very uncomfortable, somewhat uncomfortable, not at all uncomfortable). Five open-ended questions asked students to provide feedback on sections/questions that they found difficult to understand or preferred not to answer, to discuss the relevancy/irrelevancy of the sections/questions, and to provide suggestions for improvement.

The majority (94%) of students found the survey very easy to understand. Questions that students had more difficulty with included physical activity, sedentary time, and sleep. In these sections, students found the instructions confusing and unclear (e.g., differentiating between walking, moderate, and vigorous physical activity, distinguishing what constitutes leisure time reading as a student). Participants also thought that some of the terminology was vague (e.g., primary care, cooperative housing, academic regulation, administration, and differentiating between on/off campus). Based on this feedback, we made minor changes to the survey, including: providing clearer instructions (e.g., physical activity) and

minor word changes (e.g., academic regulation to academic workload), displaying some questions on the same/next page (e.g., vigorous and moderate physical activity), removing two questions regarding safety in community surrounding your campus, and re-ordering dropdown response options for sleep/wake time questions.

The majority (88%) of students felt that all sections included in the survey were relevant components when assessing wellbeing. Fifty-six percent of students found the length of the questionnaire about right. Thirty-eight percent found the survey a bit long but did not know how best to reduce the length. Two individuals suggested streamlining the questions that participants have to complete based on how they respond to similar questions (e.g., if the participant records that financial stressors are not an obstacle at all, do not ask the food security questions). While no questions were removed, one question was added based on participant feedback (relationship status).

Half of the students thought the questions in the survey would make most students not uncomfortable at all, while the other half thought they would make students somewhat uncomfortable. No participant personally found any of the questions too sensitive and all answered every question; however, some thought that a few of the questions (re: mental health, suicide, sex) would make some students uncomfortable. Students appreciated the disclaimer before the suicidal ideation questions, and also liked that each section explained the reasons the questions were being asked (i.e., how they relate to wellbeing).

Suggestions made by students to improve the survey included adding a back button, a progress bar, and a 'prefer not to answer' option for most questions. We included a progress bar (to minimize the chance of students stopping the survey early), and a 'prefer not to answer' option on more sensitive questions (e.g., suicide ideation, sexual health). We did not include a back button option but rearranged similar questions to be displayed on the same page.

Reliability

To ensure the CCWS consistently measures students' experiences/behaviours, 66 students from UBC completed the revised survey twice, one week apart, online and in their own time. The average time to complete the survey was 16.8 ± 7.6 and 13.5 ± 7.5 minutes at week 1 and week 2, respectively. The average number of days between survey completions was 8.3 ± 3.4 days.

Based on week 2 demographics, the sample had a mean age of 21.48 (SD= 2.40, range = 19-29), the majority of the sample identified as woman (84.8%), and of white (33.8%), Chinese (16.9%), or mixed (15.6%) ethnicity.

To demonstrate the relationship between week 1 and week 2 responses, intraclass correlation coefficients (ICC) were calculated. Based on Koo and Li (2016) guidelines for selecting ICCs, a two-way mixed effects model using single measures and absolute agreement ICC ($ICC_{3,1,A}$) was selected for continuous variables (including likert-style questions). ICC values less than 0.5 are indicative of poor reliability, values between 0.5 and 0.75 indicate moderate reliability, values between 0.75 and 0.9 indicate good reliability, and values greater than 0.90 indicate excellent reliability (Portney, Watkins, Hall, 2000). To measure intrarater reliability for categorical variables, Cohen's kappa statistic (1968) was calculated. Similar to correlation coefficients, kappa can range from −1 to +1, where 0 represents the amount of agreement that can be expected from random chance, and 1 represents perfect agreement. According to Altman (1991), agreement values less than 0.20 are indicative of poor agreement, 0.20-0.40 are fair agreement, 0.41-0.60 are moderate agreement, 0.61-0.80 are good agreement and 0.81-1.00 are very good agreement. An overview of these reliability results for CCWS items are presented according to their overarching core indicators.

Mental Health Assets

ICC scores for the 14 individual items in Keyes' MHC-SF were poorly to moderately reliable (ICC range: 0.32-0.56). Categorization of individuals as flourishing, having moderate mental health, or languishing across time points only showed fair agreement (κ = 0.24, *p* <.0005).

Resilience (control and self-efficacy coping) to overcome challenges showed moderate and good reliability (ICCs = 0.59, 0.77). Global self-rated mental and physical wellbeing from the CCHS were both moderately reliable (ICCs = 0.70, 0.74, respectively).

Campus Climate and Student Experience

ICC scores for the eight campus climate items ranged from 0.54-0.71, indicating moderate reliability. Similarly, items regarding perceptions of student safety on- and off-campus were moderately reliable (ICCs= 0.51 and 0.79, respectively).

Mental Health Deficits

The sources of perceived stress and extent of impact on academic progress items displayed moderate to good reliability (ICC range: 0.55-0.83).

ICCs for the 10 individual items in the K10 ranged from 0.54 (moderate) to 0.81 (good). Reliability of the summed score was good (ICC=0.85; 95% CI: 0.76-0.91). Cronbach's alpha at week 1 and week 2 were 0.91 and 0.92, respectively.

Suicidal ideation over the past 12 months displayed good agreement from week 1 to week 2 (κ = 0.65, *p* <.0005). Reliability of suicidal planning could not be calculated due to too few individuals answering this question.

Mental Health Service Utilization and Help-Seeking

ICCs for knowledge of mental health services available on- and off-campus were 0.78 and 0.54, respectively. ICCs for knowledge of physical health services on- and off-campus were 0.64 and 0.66, respectively.

The item assessing perceptions of support systems on campus was moderately reliable (ICC = 0.71; 95% CI: 0.55-0.82). The items assessing awareness of mental health outreach efforts on campus and student use of campus health services for primary care both showed poor agreement (κ = 0.03, *p* = .40; κ = 0.10, *p* =.22, respectively).

The number of response options selected for help-seeking intentions was summed and ICC was calculated on this summed variable, which showed moderate reliability (ICC= 0.69; 95% CI: 0.54-0.80).

Physical Health/Health Behaviours

Sleep

ICCs were calculated for total sleep on weekdays and weekend days (calculated variables), which displayed poor reliability (0.25 and 0.27, respectively). Quality of sleep rating showed moderate reliability (ICC = 0.59; 95% CI: 0.41-0.73).

Physical activity

Minutes of moderate-to-vigorous physical activity per week was calculated from the IPAQ items and the scored variable displayed moderate reliability (ICC = 0.60; 95% CI: 0.40-0.74). When this variable was transformed to a dichotomous variable of meeting the Canadian physical activity guidelines (yes/no), there was poor agreement (κ = 0.17, *p* =.179) from week 1 to week 2.

Participation in organized athletics over the last year showed very good agreement (κ = 0.85, *p* <.0005).

Sedentary behaviour/screen time

Time spent using screens and in sedentary transportation (calculated from hours and minutes variables) showed poor reliability (ICCs = 0.29 and 0.20, respectively). The calculated variable for total sitting time was moderately reliable (ICC = 0.53; 95% CI: 0.33-0.69).

Academic Achievement/Experiences

Institutional learning environment items were only moderately reliable (ICC range: 0.55-0.59), whereas confidence to overcome academic challenges displayed good reliability (ICC= 0.83).

Substance Use

Alcohol

Binge drinking over the last month demonstrated good reliability (ICC = 0.86; 95% CI: 0.78-0.91).

Tobacco use

Tobacco-use (cigarette smoking) showed good agreement ($\kappa = 0.65$, $p < .0005$) from week 1 to week 2. The item assessing how often individuals smoked over the last 30 days showed perfect agreement, however this was not significant as only 2 individuals reported ever smoking.

Lifetime e-cigarette use (vaping) displayed very good agreement ($\kappa = 0.82$, $p < .0005$). E-cigarette use over the past 30 days showed moderate agreement ($\kappa = 0.48$, $p < .005$). The item assessing whether the e-cigarette contained nicotine demonstrated very good agreement ($\kappa = 0.89$, $p < .0005$).

Cannabis

Lifetime cannabis use showed very good agreement ($\kappa = 0.88$, $p < .0005$), whereas previous year cannabis use showed good agreement ($\kappa = 0.67$, $p < .0005$). Reliability on types of cannabis used varied from poor (liquid: ICC=0.08; 95% CI: -0.61-0.46) to excellent (dried flower/leaf: ICC=0.97; 95% CI: 0.91-0.99).

Other drugs

Agreement for use of other drugs could not be calculated because there was no variation in responses.

Stimulants

Previous year stimulant use showed very good agreement ($\kappa = 0.90$, $p < .0005$). Agreement for stimulant use duration could not be calculated because there was an error in response option display. The item assessing whether the stimulants used were prescribed showed perfect agreement ($\kappa = 1.0$, $p < .05$).

Food Security

Agreement for the six-items used to assess food security ranged from moderate ($\kappa = 0.47$, $p < .0005$) to good ($\kappa = 0.62$, $p < .0005$).

Sexual health

The item assessing whether students ever had sex had very good agreement ($\kappa = 0.92$, $p < .0005$). Contraceptive use and sexual satisfaction showed good ($\kappa = 0.72$, $p < .0005$) and moderate ($\kappa = 0.60$, $p < .0005$) agreement, respectively.

Demographic Measures

Individuals who did not report the same month and year of birth were removed from the analyses. Perfect agreement was found for all selected ethnicities ($\kappa = 1.0$, $p < .0005$) except 'White' ($\kappa = 0.94$, $p < .0005$). No individuals selected 'Aboriginal peoples of Canada' or 'Indigenous (outside of Canada)'. Items assessing place of birth, place of residence, length of commute to campus, average cumulative grade, level of financial stress, gender identity, sexual orientation, relationship status, mother/father

education all showed very good agreement (κ range: 0.86-1.00, *p*'s <.0005). Mode of commute to campus and hours of paid employment displayed good agreement (κ = 0.78 and 0.62, respectively; *p*'s <.0005). The number of response options selected for disabilities was summed and ICC was calculated on this summed variable, which showed good reliability (ICC= 0.73; 95% CI: 0.59-0.83). Receiving help for disabilities on campus showed good agreement (κ = 0.80, *p* <.0005).

Summary of Changes Based on Reliability Testing

Based on the findings from the reliability testing, further refinements were made to the CCWS. Most notably, the Keyes' MHC-SF was replaced by the Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007). In addition to our results indicating poor reliability, the Public Health Agency of Canada recently identified poor psychometric properties of the psychological and social components of the MHC-SF and have decided to exclude this scale in future assessments of wellbeing. We adopted the WEMWBS to align with PHACs direction. The WEMWBS consists of 14-items that are all positively worded and relate to the main components (eudaimonic and hedonic) of mental wellbeing. The items are summed to provide a single score ranging from 14 to 70 with higher scores reflecting greater wellbeing. At development, the WEMWBS displayed content and criterion validity, and acceptable test-retest reliability over one week (Tennant et al., 2007). The scale has since been validated across different samples (overall populations, students, adolescents, clinical samples, ethnic minorities) and translated and validated in more than a dozen languages (Smith et al., 2017).

The "I don't know" response options were removed from less sensitive questions because very few students chose these response options in the pilot at UBC and students are instructed at the beginning of the survey to skip any questions they do not understand or want to answer making these response options redundant. The question about cannabis types was removed due to displaying a range of reliability scores (most poor) and replaced with frequency of use over last month (similar to tobacco-use question). Finally, the suicide questions were re-phrased to avoid using language that reinforced suicide as an act of committing a crime. An overview of the core measure indicators are presented in Table 1 (see appendix).

Additional Changes Based on Stakeholder Feedback

Other changes were made to the survey after reliability testing based on feedback from various stakeholders. Most notably, the substance use questions (cannabis, pain relievers and stimulants) were modified based on recommendations from Health Canada to align with CPADS 2019 questionnaire. Specifically, we removed lifetime use of cannabis since recent use is more relevant to institutions, and included questions about whether pain relievers and stimulants were prescribed and used for reasons other than their intended use. We also revised our tobacco use questions based on feedback provided by the Tobacco Control Directorate within Health Canada. The five questions now correspond to content on the CPADS (one question regarding tobacco use and four regarding e-cigarette use and contents). To align with Canadian Low Risk Drinking Guidelines, we specified binge drinking as 4 or more drinks for females or 5 or more drinks for males (in one question).

We also refined existing items. We removed the 'Neither agree nor disagree' response option in the student experience questions to align with the other 6-point likert-scale questions (back to original scale). The 'male' and 'female' terms were removed from the contraceptive use question to be inclusive of all sexual activity.

We added a question to the demographics section to identify if a student was currently or recently had been participating in a co-op placement, practicum, residency, or study abroad term. We reduced father and mother education (2 questions) to parent/guardian in one question.

Discussion

The goal for the team in developing the brief CCWS tool was to ensure that it included questions that a) were comparable to other population-based studies for consistency and reporting purposes; b) would produce results that could be directly compared to national benchmarks; and c) would engage post-secondary institutions and other stakeholders to encourage action. Our initial results confirm that the CCWS was acceptable to students who completed the survey and for the majority was 'easy to understand'. Time to completion was within the target of 20 minutes. Reliability analyses demonstrated that most items were at least moderately reliable. However, some items demonstrated poor reliability including measures related to screen time and items assessing awareness of mental health outreach efforts on campus and student use of campus health services for primary care. These items will be retained for now given their importance to stakeholders in the first phase of CCWS development (Faulkner et al., 2019).

The CCWS is planned for piloting at three institutions in November 2019. Further analyses will examine time to completion and construct validity of the CCWS items. An additional test-retest project may be conducted with a sub-sample to test the reliability of the Warwick-Edinburgh Mental Well-being Scale within the context of the CCWS survey.

Overall, the first iteration of the CCWS is ready for piloting at multiple institutions. It should provide reliable estimates of a number of important wellbeing indicators that are comparable to nationally and/or provincially representative samples where available.

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Appendix

Table 1. Overview of CCWS Core Measures and Indicators

Core Measures	Indicator
1. Mental Health Assets	Warwick-Edinburgh Mental Well-being Scale
	Resilience (control and self-efficacy coping)
	Self-rated Mental Health
2. Campus Climate and Student Experience	School climate - safety
	School climate – teaching & learning
	School climate – interpersonal relationships
	School climate – institutional environment
3. Mental Health Deficits	Kessler Psychological Distress Scale (K10)
	Sources of perceived stress and extent of impact on academic performance
	Suicidal ideation and planning
4. Mental Health Service Utilization and Help-Seeking	Knowledge of mental health services available on- and off-campus
	Knowledge of physical health services on- and off-campus
	Perceptions of support systems on campus
	Student use of campus health services for primary care
5. Physical Health/Health Behaviours	Time to sleep and wake up on weekdays and weekends
	Quality of sleep rating
	Time spent in vigorous and moderate physical activities
	Participation in organized athletics (varsity, club/community sports/intramurals/none) over last year
	Time spent using screens (watching TV, using computers during leisure), in sedentary transportation, and total sitting time
6. Academic Achievement/Experience	Institutional learning environment
7. Substance Use	Binge drinking
	Tobacco-use (cigarette smoking and vaping)
	Lifetime and previous year cannabis use
	Use of opioids
	Use of stimulants
8. Food Security	Food Security
9. Sexual Health	Safe sex practice (ever and contraceptive use)
	Sexual satisfaction