

**Canadian Community Health Survey
Cycle 1.2**

Mental Health and Well-being - Canadian Forces

Master File Documentation

Statistics Canada

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1. Background

In Cycle 1.2 of the Canadian Community Health Survey (CCHS), an additional component was administered to a representative sample of the Canadian Forces (CF) population. This is known as the CF Component

One of the exclusions of the core CCHS target population is full-time members of the regular Canadian Forces. As the Department of National Defence (DND) wanted to be able to provide reliable, comparable information for the Canadian Forces, DND contracted Statistics Canada to undertake a special survey component with a representative sample of the Canadian Forces, both regular and reservist members.

Mental Health and Well-being – CF Component has analogous objectives to those of the CCHS, against which results can be compared – to estimate the prevalence of certain mental disorders in the Canadian Forces and record members' utilization of mental health services. This information is intended to assist in the determination of mental health care needs in the CF and to allow DND planners the crucial data they need to ensure adequate resources.

The following guide gives more information on the survey.

Readers requiring additional information specific to this additional component can contact:

Data Access Unit
Population Health Surveys
Health Statistics Division
Phone: 613.951.1653
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2. Survey Content

The first sub-section of this section provides a general discussion of the consultation process used in survey content development and gives a summary of the final content selected for inclusion in this study.

2.1 Consultation Processes

One of the survey's main objectives is to address priority mental health determinants, mental health status and mental health resources in the Canadian Forces. Topic selection for the content of the broader CCHS survey was conducted through a process of extensive consultations with regional, provincial, federal representatives and the research community. Expert consultation was seen as an integral part of the content development. The selection of priority areas in terms of mental disorders as well as mental well-being are a result of discussions within the Mental Health Expert Group assembled for the survey, the Population Health Advisory Committee and, in the case of the CF Component, the Department of National Defence. Consultations also include contacts with representatives of the World Health Organization, academia, federal and provincial governments, consumers and professional associations.

2.2 Content

The content for Cycle 1.2 and the CF Component is partly based on a selection of mental disorders from the WMH-CIDI (World Mental Health – Composite International Diagnostic Interview Instrument). The WMH-CIDI is a lay-administered psychiatric interview that generates a profile of those with a disorder according to the definitions of the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV), an international classification system. The well-being and determinants of health in the CF Component are based on sources used on such surveys as the National Population Health Survey (NPHS), the CCHS (Cycle 1.1), the Health Promotion Survey (HPS) and other surveys. The following Tables 2.1 and 2.2 provide a detailed breakdown of topics covered by the CCHS and CF Component questionnaire.

Table 2.1 Questionnaire Modules

Module	CCHS 1.2 Core Survey	Canadian Forces Component
Health Status		
General Health	Included	Included
Restriction of Activities	Included	Included
Chronic Conditions	Included	Excluded
Two-Week Disability	Included	Included
Module	CCHS 1.2 Core Survey	Canadian Forces Component
Mental Well-Being		
Psychological Well-being Manifestation Scale	Included	Excluded
Screening Section	Included	Included
Stress	Included	Included
Mental Illness - Anxiety Disorders		
Agoraphobia	Included	Excluded
General Anxiety Disorder	Excluded	Included
Panic Disorder	Included	Included
Post Traumatic Stress Disorder	Excluded	Included
Social Phobia	Included	Included
Mental Health Profiles*	Included	Included
Mental Illness -Mood Disorders		
Major-Depressive Episode	Included	Included
Dysthymia	Excluded	Included
Manic episode (Mania)	Included	Excluded
Mental Illness-Other Problems		
Distress	Included	Included
Eating Troubles Assessment	Included	Included
Pathological Gambling	Included	Excluded
Alcohol Dependence	Included	Included
Determinants of Mental Health		
Alcohol Use	Included	Included
Childhood & Adult Stressors	Excluded	Included
Height and Weight	Included	Excluded
Illicit Drug Use and Dependence	Included	Excluded
Physical Activities	Included	Excluded
Social Support	Included	Included
Work Stress	Included	Included
Health Care Utilization		
Mental Health Services Utilisation*	Included	Included
Medication Use	Included	Included
Demographic and other Related Variables		
Administration	Included	Excluded
Socio-demographic Characteristics*	Included	Included
Deployments	Excluded	Included
Household Contact and Demographics	Included	Included
Income	Included	Included
Labour Force Participation *	Included	Included
Spiritual Values	Included	Included

* different versions specific to each of CCHS 1.2 and CF Component

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
	Introduction		Social survey standards.	Social survey standards.		
1 DHH	Household/ Entry	CCHS 1.1	Information collected on each household member: Date of birth Sex Marital status Relationship of everyone to everyone else in the household Highest grade of elementary or high school completed Highest degree, certificate or diploma CF Dwelling Type of dwelling Owner/tenant Number of bedrooms in dwelling Language of interview			
2 GEN	General Health	CCHS 1.1	Respondent's general health status. General health status compared to one year ago. Sleep patterns. General level of stress in life. Sense of belonging to one's community.	Respondent's general health status. General health status compared to one year ago. Sleep patterns. General level of stress in life. Sense of belonging to one's community.	GENB_04 – GENB_06: Replaced scale with one that is used in Social support. New scale : None of the time A little of the time Some of the time Most of the time All of the time Old scale : Most of the time Sometimes Never	Scale was replaced with more specific/definitive one to give respondents more options; better capture what they are feeling.
3 SCR	Screeener for mental disorders	WMH-CIDI	In order to reduce response burden, screening questions are used to identify and filter respondents who may experience symptoms that are associated with specific mental disorders.		New module	Screeener questions are found for both mania and agoraphobia, even though the Canadian Forces 2002 Canadian Community Health Survey Supplement on Mental Health did not collect other information about these specific disorders. Only the

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
			<p>The screening questions are grouped in one module, which is located near the beginning of the questionnaire, to avoid false negatives and learning pattern where a respondent answers 'no' in order to screen out of a subsequent module.</p> <p>The screening questions ask if the respondent has experienced general symptoms that are usually associated with different affective and anxiety disorders. Positive answers are flagged for further questioning within disorder-specific modules. These modules contain more in-depth questions and relate to more specific symptoms associated with the mental disorder. The purpose of these additional questions is to evaluate if the respondent has experienced symptoms that are identified with the clinical diagnosis associated with the reviewed mental disorder.</p> <p>SCRB_081: Self-perceived rating of physical health.</p> <p>SCRB_082: Self-perceived rating of mental health.</p> <p>SCRB_20 through SCRIB_35: WMH-CIDI screener questions (excluding suicide, eating troubles, alcohol use and dependence and Post-traumatic stress disorder).</p>			<p>CCHS 1.2 Core Survey collected information on these disorders.</p> <p>Screeener questions should not be used as a proxy measure for the disorder.</p>
4 DPL	Deployment (Specific to CF)	New	Number of years been a CF member Deployments of at least 3 months Number of deployments during			

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			career Notice received prior to deployment Family concerns to deployment Months spent away from home			
5 DIS	Distress	CCHS 1.1 NPHS Cycle 4	<p>Kessler’s scale called the K10 measuring the frequency of feeling: Sad Nervous Restless Hopeless Worthless Everything was an effort</p> <p>And: Tired for no good reason So nervous that nothing could calm down “...or fidgety” So restless couldn’t sit still “...or depressed”</p> <p>Chronic aspects of distress are also examined (i.e. more often, less often, or same as usual in the past month).</p>	<p>Kessler and Mroczek scale called the K6 measures frequency of feeling: Sad Nervous Restless or fidgety Hopeless Worthless Everything was an effort</p> <p>Chronic aspects of distress are also examined (i.e. more often, less often, or same as usual in the past month).</p>	<p>Replaced by Kessler’s 10-items scale (very similar to the old one): Frequency of feeling: Tired for no good reason Nervous So nervous that nothing could calm down Hopeless Restless or fidgety So restless couldn’t sit still Sad or depressed So depressed that nothing could cheer up Everything was an effort Worthless</p> <p>New question order: DISB_10A (so sad...) became DISB_10H (so depressed...) DISB_10C became DISB_10E. DISB_10E became DISB_10J. DISB_10F became DISB_10I</p> <p>Added: INT: intro text emphasising the 1 month reference period DISB_10A: tired out for no good reason DISB_10C: so nervous that nothing could calm you DISB_10F: so restless you could not sit still DISB_10G: sad or depressed DISB_10N: text emphasising 1 month reference period</p>	<p>Replaced with new scale to be consistent with Kessler (K10). Measures important aspect of mental health and can be superimposed with diagnostic modules.</p> <p>Clear emphasis on reference periods is important because there are so many different reference periods in the survey.</p>
6	Stress	New	STRB_1: Rating of the ability to		New module	Items for ways of coping questions

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STR			<p>handle unexpected and difficult problems (adapted from NPHS 96).</p> <p>STRB_2: Rating of the ability to handle the day-to-day demands of life (adapted from NPHS 96).</p> <p>STRB_3: Respondent's self report of the source of stress in day-to-day life contributing most to feelings of stress: Time pressures / not enough time Own physical health problem or condition Own emotional or mental health problem or condition Financial situation (e.g., not enough money, debt) Own work situation (e.g., hours of work, working conditions) School Employment status (e.g., unemployment) Caring for own children Caring for others Other personal or family responsibilities Personal relationships Discrimination Personal and Family's safety</p> <p>Frequency use of ways of dealing with stress: STRB_61: Try to solve the problem STRB_62: Talk to others STRB_63: Avoid being with people STRB_64: Sleep more than usual STRB_65A: Try to feel better by eating more or less than usual STRB_65B: Try to feel better by smoking more cigarettes than usual</p>			<p>(STRB_61 to STRB_611) are derived and modified in wording from several coping scales. The majority of questions are selected from Folkman and Lazarus (1985) Ways of Coping Revisited (WOC-R). Several questions are selected from Amirkhan (1990) Coping Strategy Indicator (CSI), and Carver et al. (1989) COPE scale.</p>

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
			<p>STRB_65C: Try to feel better by drinking alcohol</p> <p>STRB_65D: Try to feel better by using drugs or medication.</p> <p>STRB_66: Jog or do other exercise</p> <p>STRB_67: Pray or seek spiritual help</p> <p>STRB_68: Try to relax by doing something enjoyable</p> <p>STRB_69: Try to look on the bright side of things</p> <p>STRB_610: Blame oneself</p> <p>STRB_611: Wish the situation would go away or somehow be finished</p>			
7 MHP	Each of the following “disorders” (7A Major Depressive Episode, 7B Dysthymia, 7C Panic Disorder, 7D Social Phobia, 7E General Anxiety Disorder, 7F Post Traumatic Stress Disorder)	WMH-CIDI	<p>NOTE: CCHS 1.2 questionnaire is based on a modified version of the WMH-CIDI instrument recognized by the WMH2000 Project.</p> <p>Disorders were selected based on DND’s particular interest. CCHS 1.2 disorders were selected on the basis that they were prevalent enough to provide reliable estimates, that they were balanced across disorders, that they were treatable and program/policy relevant and were guided by recommendations from the Survey’s Expert Committee.</p>	N/A	New modules	
7A DEP	Major depressive episode (including suicide thoughts ant attempts)	WMH-CIDI	<p>Episodes of: Being “sad, empty or depressed” Losing interest in most things Feeling discouraged about how things are going in life</p> <p>Duration: Episodes of 2 weeks or longer recurring month after month for a year or longer</p>	Used short CIDI scale for major depressive episode. This is a subscale of an earlier version of the CIDI instrument..	<p>New module</p> <p>Note that the Suicide module was integrated into Major depressive episode (see Suicide below).</p> <p>Streamlined skips and wording for services section of major depressive episode to take into consideration services mentioned in suicide section.</p>	Integrating suicide into major depressive episode facilitates programming, ensures consistency in questions (between those who go through major depressive episode and those who don’t), and keeps sensitive questions on a similar topic together (instead of asking about suicide in major depressive episode

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			<p>Frequency: Most of the day, nearly everyday</p> <p>Severity: Worst and most recent episodes</p> <p>Specific symptoms: At least 5 symptoms such as change in weight or appetite, energy level, ability to concentrate</p>		<p>Added booklet for suicide questions and refer to thoughts of suicide, suicide plan, and attempted suicide as Experience A, B, and C.</p> <p>Added word “seriously” to thoughts of suicide.</p>	<p>and again in the suicide module).</p> <p>Booklet increases confidentiality if others within earshot of interview, eases respondent discomfort with potentially sensitive topic.</p> <p>Qualitative testing showed its necessity. Many people said it is normal to think of suicide as teenagers but that they did not “seriously” consider it.</p>
7a SUI	Suicidal thoughts and attempts	CCHS 1.1 WMH-CIDI	<p>Measure of lifetime and past 12 months suicidal thoughts, plan and attempt.</p> <p>Age when experiences happened/ last happened.</p> <p>Most recent time when experiences happened (in relation to the last or worst event).</p> <p>Medical attention received because of attempt.</p> <p>Hospitalization overnight or longer because of attempt.</p> <p>Professional resources sought or talked to after suicide attempt.</p> <p>Location where contacts took place.</p>	<p>Considered committing suicide or taking own life in past 12 months.</p> <p>Attempted to commit suicide or tried taking own life in past 12 months.</p> <p>Medical attention received following suicide attempt.</p>	New module	<p>Questions on suicide are integrated in the major depressive episode module (see Major depressive episode above).</p> <p>A confidential approach was used to collect this information through the reference to various experiences (suicidal thoughts, plan and attempt) as Experience A, B, C and the use of a booklet.</p>
7B DYS	Dysthymia (Specific to CF)	WMH-CIDI	<p>Episodes of chronic depression</p> <p>Duration: Episodes lasting for 2 years or longer</p> <p>Specific symptoms: At least 2 symptoms such as change in weight or appetite, energy level, ability to concentrate.</p>		<p>New module</p> <p>Asked only to members of the CF</p> <p>This module is used independently of depression module. Most skips that use depression questions were deleted.</p> <p>2 screener questions added to</p>	<p>NOTE: This module was adapted specifically for the CF population</p> <p>Dysthymia module was not finalized by WMH 2000 and they are not currently supporting it. It has been</p>

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			Note: A flow error in the screener portion of the questionnaire, discovered after data collection, has resulted in the Dysthymia module being rendered inoperable.		<p>screener section.</p> <p>Added wording throughout for respondents who had also answered depression module to acknowledge the similarity of these questions to ones already answered and to clarify the difference between the dysthymia questions and the depression ones (longer duration; fewer and less severe symptoms)</p>	<p>finalized in this survey (fixed some skips, deleted some questions that were not consistent with other modules and the algorithm, added some variables asked in all other modules (e.g. close relatives))</p> <p>Module is used independently from depression because (1) applies only to CF population and (2) the questions in depression were not adequate to meet the diagnostic criteria and (3) it is important to make the distinction between dysthymia symptoms and depression symptoms</p> <p>It is important to clarify the differences between depression and dysthymia so that respondents don't feel the questions are redundant and so respondents don't misreport symptoms of depression as symptoms of dysthymia – the time period is critical</p>
7C PAD	Panic Disorder	WMH-CIDI	<p>Episodes of: “Attacks of fear or panic” and “attacks of suddenly experiencing symptoms associated with a panic disorder”</p> <p>Duration: Multiple sudden, short attacks</p> <p>Severity: Number of symptoms and episodes.</p> <p>Specific symptoms: At least 4 worsening symptoms such</p>		New module	

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			as shortness of breath, heart pounding, chest pain or discomfort, choking or smothering sensations			
7D SOP	Social Phobia	WMH-CIDI	<p>Episodes of: “Persistent and impairing fears of social and performance situations”</p> <p>Severity: Number of symptoms and episodes Feeling of disappointment with oneself</p> <p>Specific symptoms: At least 2 symptoms such as feeling dizzy, having chest pain or discomfort, trembling, sweating or having trouble breathing normally</p>		New module	
7E GAD	General Anxiety Disorder (Specific to CF)	WMH-CIDI	<p>Episodes of: “persistent and impairing worry about losing several things, such as one’s job, one’s life”.</p> <p>6 types of worries: Diffuse: everything Diffuse: nothing in particular Personal problems: e.g., health, job Worries about phobias or obsessive-compulsions Worries about close relationships Worries about societal problems (e.g., crime, war)</p> <p>Duration: Duration of worries</p> <p>Specific symptoms: At least 4 symptoms such as those related to social phobia.</p>		New Module	NOTE: This module was adapted specifically for the CF population
7F PTSD	Post Traumatic Stress Disorder	WMH-CIDI	Reactions to trauma exposure (e.g. life-threatening accident, combat		New Module No specific info is collected about	This module was developed specifically for the CF population

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	(Specific to the CF)		<p>experience, sexual assault)</p> <p>Duration: Total frequency of occurrences.</p> <p>Specific symptoms: At least 2 symptoms such as upsetting memories or dreams, feeling emotionally distant from other people, trouble sleeping or concentrating, and feeling jumpy or easily startled.</p> <p>Recency: Reaction to any trauma over the past 12 months; 30-day period within the past 12 months</p>		<p>any of the events.</p> <p>For worst event reactions, past 12 months reactions and past 30 days reactions, a question is asked to determine if it is related to a deployment.</p> <p>If there are multiple traumas, information on reactions is only collected about the worst trauma.</p>	<p>DND to make past 12 month diagnosis and explore relationship with deployment</p> <p>Info only on worst trauma collected to reduce respondent burden (compromise: delete random event, add 12 month reactions)</p>
8 ALC	Alcohol use	CCHS 1.1 NPHS Cycle 4	<p>Consumption of number of drinks in past 7 days. Rate of use in the past 12 months and lifetime. Indicator of 12 month period where once per month respondent drank 5 or more drinks in lifetime. Reason for reducing or stopping drinking.</p>	<p>Regular consumption of 5 drinks or more on one occasion. Consumption of number of drinks in past 7 days. Rate of use in the past 12 months. Regular consumption of 12 or more drinks a week in lifetime. Reason for reducing or stopping drinking.</p>	<p>New questions added: ALCB_4: regular consumption of more than 12 drinks a week during past 12 months ALCB_10: Lifetime occurrence of a period where there was regular consumption of 5 drinks or more in one single occasion, more than once a month for a 12 month period</p> <p>Modified : ALCA_6 became ALCB_10 in CCHS Cycle 1.2.</p>	<p>Questions were added to screen for high risk consumption patterns in respondents.</p>
9 ALD	Alcohol dependence	CCHS 1.1 WMH-CIDI	<p>Lifetime and past 12 months alcohol dependence.</p> <p>Questions measure Kessler and Mroczek CIDI short form for DSM-IIIIR Alcohol Dependence (7 symptoms).</p> <p>Added 5 symptoms from WMH-CIDI:</p>	<p>Past 12 months alcohol dependence.</p> <p>Questions measure Kessler and Mroczek CIDI short form for DSM-IIIIR Alcohol Dependence (7 symptoms).</p>	<p>Use of a booklet to display response categories.</p> <p>Added:</p>	<p>Will reduce interview time and response burden.</p> <p>Booklet also provides confidentiality for sensitive modules and is less intrusive (especially desired by young respondents during testing).</p> <p>To provide indication of respondents</p>

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			<p>drank more than intended, spent excessive time recovering from alcohol effects, reduced activities due to alcohol, drank despite exacerbating physical/mental condition</p> <p>Past 12 months interference in life and activities, such as: Home management activities Ability to attend school Ability to work at a job Ability to form and maintain close relationships Social life</p>		<p>ALDB_QINT2: new introduction.</p> <p>5 symptoms from WMH-CIDI (ALDB_10 through ALDB_14): Experience of symptoms or situations associated with alcohol dependence.</p> <p>Examine lifetime occurrence. New question: “Has that ever happened?”: ALDB_01A, ALDB_03A, ALDB_04A, ALDB_05A, ALDB_06A, ALDB_07A, ALDB_09A, ALDB_10A, ALDB_11A, ALDB_12A, ALDB_13A, ALDB_14A</p> <p>Past 12 months interference in life and activities, such as: Home management activities Ability to attend school Ability to work at a job Ability to form and maintain close relationships Social life</p>	<p>experiencing symptoms or situations associated with alcohol dependence occurring in their lifetime.</p> <p>Assess lifetime alcohol dependence.</p> <p>Add questions to be consistent with disorder modules.</p>
10 ETA	Eating Troubles	EAT-26 (Eating Attitude Test) WMH-CIDI	Non-diagnostic module using a health population approach to examine peoples' attitudes and behaviours in relation to food and their physical appearance.		<p>New module</p> <p>Added WMH-CIDI screener questions to filter people who have experienced eating problems (ETAB_01A, ETAB_01B).</p> <p>Underlined reference periods (last 12 months).</p>	<p>The EAT instrument is usually used with a target population who have eating problems. Without any screener, the questions appear irrelevant for many respondents.</p> <p>Will reduce misreporting and ambiguity; clarify questions.</p>
11 RAC	Restriction of activities	CCHS 1.1	Difficulty with hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities.	Difficulty with hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities.	RACB_6C: dropped the word “normal” in “doing normal everyday housework”.	Qualitative testing revealed that the word “normal” was not understood by everyone the same way (subjective definition).

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
			<p>Question asking respondents if they have a physical or mental condition or health problem that reduces the amount or the kind of activity that they can do at home, work, school or other activities (such transportation or leisure).</p> <p>The cause of the condition that reduces the kind or amount of activity the respondent can do is also asked.</p> <p>Embarrassment and discrimination experienced because of the condition.</p> <p>Questions identifying the type of activities of daily living which are limited because of the condition.</p> <p>Impact of condition (physical or mental) on everyday activities such as cooking, shopping, paying bills, transportation, leisure activities, etc.</p>	<p>Question asking respondents if they have a physical or mental condition or health problem that reduces the amount or the kind of activity that they can do at home, work/school or other activities (such transportation or leisure).</p> <p>The cause of the condition that reduces the kind or amount of activity the respondent can do is also asked.</p> <p>Impact of condition or health problem on everyday activities such as cooking, shopping, housework, personal care, moving about inside the house.</p>	<p>Added or modified: RACB_2B1 and RACB_2B2: Work and school environment broken down into 2 different questions.</p> <p>RACB_5: New answer categories listing the main cause of the condition responsible for the activity reduction. It now specifically identifies “emotional or mental health problem or condition” or “use of alcohol or drugs”.</p> <p>(New) RACB_5A1 and RACB_5A2: Experience of embarrassment because of a physical or mental condition or health problem.</p> <p>(New)RACB_5B1 and RACB_5B2: Experience of discrimination or unfair treatment because of a physical or mental condition.</p> <p>Modified: Type of help needed from another person because of any physical condition or mental condition or health problem.</p> <p>RACB_6B1: Added “help with getting to appointments and running errands such as shopping for groceries”.</p> <p>RACB_6D: Added: “such as spring cleaning” (Deleted “washing walls”). RACB_6E: help “or taking medication”.</p> <p>Added: RACB_6G: help with</p>	<p>To measure each concept separately.</p> <p>To identify those whose main cause was due to “emotional or mental health problem or condition” or “use of alcohol or drugs”.</p> <p>To identify those who needed help due to “emotional or mental health problem or condition”.</p> <p>To clarify question for respondents.</p>

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					<p>looking after your personal finances such as making bank transactions or paying bills.</p> <p>Questions added concerning the difficulties experienced by the respondent because of any physical condition or mental condition or health problem. (New)</p> <p>RACB_7A: difficulty making new friends or maintaining friendships.</p> <p>RACB_7B: difficulty dealing with people you don't know well.</p> <p>RACB_7C: difficulty starting and maintaining a conversation.</p> <p>RACB_8: Cause of condition associated with required help or difficulty experienced by the respondent: Physical health Emotional or mental health Use of alcohol or drugs</p>	To measure difficulties experienced by the respondent because of any physical condition or mental condition or health problem.
12 TWD	2 week disability	CCHS 1.1	<p>Health during the past 14 days: Stay in bed because of illness or injury (number of days) Stay in bed was due to mental health or use of alcohol or drugs (number of days) Days when activities were cut down due to illness or injury (number of days) Days when activities were cut down due to mental health or use of alcohol or drugs (number of days)</p>	<p>Report on past 2 week disability.</p> <p>Number of days spent in bed.</p> <p>Number of days where respondent cut down on activities.</p>	<p>Deleted: TWDA_5: do you have a regular medical doctor?</p> <p>Added: TWDB_2A and TWDB_2B: # of days the respondent stayed in bed all day because of his/her emotional or mental health or use of alcohol or drugs. TWDB_4A and TWDB_4B: # of days the respondent cut down on things for all or most of the day because of his/her emotional or</p>	

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
					<p>mental health or use of alcohol or drugs.</p> <p>TWDB_5A, TWDB_6, TWDB_6A and TWDB_6B: # of days when it took extra effort for the respondent to perform to his/her usual level because of his/her emotional or mental health or use of alcohol or drugs.</p> <p>TWDB_1, TWDB_2: Replace “alite” with “dû garder le lit”.</p> <p>Moved: Entire module to the end of questionnaire so that respondents are more comfortable about reporting the cause of the two-week disability.</p>	<p>More familiar term for French respondents.</p> <p>Too much taboo/stigma associated with mental health to be easily reported as cause of two-week disability.</p>
13 SR1	Mental Health Services Utilisation (Specific to CF)	New	<p>Overnight hospitalizations, contacts with health professionals, location of contact</p> <p>List of professionals specific to CF environment</p> <p>Lifetime/past 12 month</p> <p>Lifetime/past 12 month use of internet support groups, self-help groups, telephone helplines, CF resources</p>			<p>Modified from CCHS 1.2 version to reflect needs of CF population</p> <p>NOTE: This module was adapted specifically for the CF population</p>
14 SR2	Mental Health Services Utilisation (Specific to CF)	New	<p>Different kinds of help received or thought was needed for problems with emotions, mental health or use of alcohol or drugs.</p> <p>Barriers to access</p>			<p>NOTE: This module was adapted specifically for the CF population. It is based on the “Perceived Need for Care” questionnaire by Meadows et. al.</p>
15 MED	Medication Use	NPHS Cycle 4 CCHS 1.1	<p>Past 12 month use of medication groups (sleep, diet pills, anxiety, mood stabilizers, anti-depressants, psychotic behaviours, stimulants).</p> <p>Dropped from NPHS/CCHS: Use of medication during past month: Pain relievers</p>	<p>Use of the following medication groups (med groups) during past month: Pain relievers</p>	<p>For each medication group, the list of examples of medications are stated in brackets which means they are not mandatory to be read by the interviewer but are there to clarify and provide examples of the medication group in question (i.e. not read automatically).</p>	

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
			Codeine, Demerol Allergy medicine Asthma medications Cough or cold remedies Penicillin or other antibiotics Medicine for the heart Diuretics or water pills Steroids Insulin Pills to control diabetes Stomach remedies Laxatives Birth control pills Hormones (type and date of start of hormone therapy) Thyroid medication Use of other health products, past 2 days	Tranquilizers Diet pills Anti-depressants Codeine, Demerol Allergy medicine Asthma medications Cough or cold remedies Penicillin or other antibiotics Medicine for the heart Diuretics or water pills Steroids Insulin Pills to control diabetes Sleeping pills Stomach remedies Laxatives Birth control pills Hormones (type and date of start of hormone therapy) Thyroid medication Other medication	Added: MEDB_n1- MEDB_n4J: For each medication group: Medication taken under the supervision of a health professional Type of professional who prescribed the medication Past 12 months misuse of medication (forgot to take or took less than supposed to) Reason why took less medication MEDB_4: Insurance coverage for prescribed medication. MEDB_5: Past 12 months use of other health products such as vitamins and herbs for problems related to emotions, alcohol or drug use, energy, concentration, sleep or ability to deal with stress. MEDB_6: List of other health products: St. John's Wort, Valerian, Chamomile, Ginseng, Kava Kava / Kava Root, Lavender, Chasteberry/Chaste Tree Berries, Black Cohosh, Ginkgo Biloba, NeuRecover – DA MEDB_7: Type of professional who recommended the use of other health	

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
					products.	
16 SSM	Social support	CCHS 1.1 NPHS Cycle 4 (MOS)	Type of support received (same as cycle 1.1). Availability of support. Frequency of use of different kinds of support.	Type of support received: To help you if you were confined to bed To listen to you when you need to talk To give you advice about a crisis To take you to the doctor Shows you love and affection To have a good time with Give you information to help you understand a situation Confide in or talk to about yourself or your problems Who hugs you To relax with To prepare your meals Whose advice you want Gets your mind off things Help with daily chores Share your private worries Turn to for suggestions To do enjoyable things with Understands your problems Love you and make you feel wanted	Added: For each domain of support used (support for activities of daily living, support through affection, social interaction support and informational support) follow-up questions were asked: SSMB_21A, SSMB_22A, SSMB_23A, SSMB_24A: In past 12 months, did you receive this kind of support? SSMB_21B, SSMB_22B, SSMB_23B, SSMB_24B: When you needed it, how often in the past 12 months did you receive this kind of support?	The follow-up questions were newly developed for 1.2. Questions were grouped to avoid repetition and response burden following complaints from interviewers and respondents.
17 SDC	Demographics	CCHS 1.1	Country of Birth Ethnic or cultural origin Current languages Mother tongue Cultural or racial background	Country of Birth Ethnic or cultural origin Current languages Mother tongue Cultural or racial background	Updated lists of: SDEB_1: Country of Birth (Sri Lanka) SDEB_4A-SDEB_4S: Ethnic or cultural origin (Black, Norwegian, Welsh, Swedish, Aboriginal) SDEB_5A- SDEB_5S: Current languages (Dutch, Hindi, Russian, Tamil) SDEB_6A- SDEB_6S: Mother tongue (Dutch, Hindi, Russian, Tamil)	Updated lists.
18 CAS	Childhood and Adult Stressors	CCHS 1.1	Respondents are asked to specify which of the following traumas has	Respondents are asked to specify which of the following traumas has	Not used: event that scared so much that the	Measures the same concept as PTSD-

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
	(Specific to CF)		<p>occurred at any time in their life: Hospital stay of 2 weeks or more Divorce/separation of parents Father or mother did not have a job for a long time when they wanted to be working Respondent was sent away from home because he/she did something wrong One or both of parents drank or used drugs so often that it caused problems for the family The respondent, as a child, was apprehended by a child protection service</p>	<p>occurred at any time in their life (and specify age when trauma occurred): Hospital stay of 2 weeks or more Divorce/separation of parents Father or mother did not have a job for a long time when they wanted to be working Something happened that scared you so much you thought about it for years after Respondent was sent away from home because he/she did something wrong One or both of parents drank or used drugs so often that it caused problems for the family</p>	<p>respondent thought about it for years Respondent has been divorced or ended a relationship with someone he/she was still in love with Witness of violence to someone or seen someone killed Physically abused by someone close</p> <p>Added or modified: CAS_Q2 (TR_Q302): Parents were divorced or “split up” CAS_Q6: The respondent, as a child, was apprehended by a child protection service.</p>	<p>already covered</p> <p>NOTE: This module was adapted specifically for the CF population and represents a break with past modules. Therefore, it cannot be compared historically.</p>
19 SPV	Spiritual Values	CCHS 1.1	<p>Questions on the role of spirituality in the respondent’s life: Past 12 months religious services attendance Role of spirituality in life Extent to which spirituality gives meaning to life, strength to face difficulties and help to understand difficulties in life Religious affiliation Self-perception of religious identity</p>	<p>Questions on the role of spirituality in the respondent’s life: Past 12 months religious services attendance Role of spirituality in life Self-perception of religious identity</p>	<p>Not included: SPRA_3: Self perception of how religious or spiritual the respondent is.</p> <p>Added: SPVB_2: Extent to which thought that spirituality helps find a meaning to life SPVB_3: Extent to which thought that spirituality gives strength to face everyday difficulties SPVB_4: Extent to which thought that spirituality helps understand the difficulties of life SPVB_5: Religion, if any SPVB_7: Self-perception of religious identity</p> <p>Modified: SPVB_QINT1, SPVB_1, SPVB_2, SPVB_3, SPVB_4: changed “spirituality” for “spiritual values”.</p>	<p>Qualitative testing revealed that respondents associated very religious connotation to “spirituality” whereas “spiritual values” had a more general meaning. To deal with this,</p>

Order	Modules	Source/ past use	Summary Description (CCHS 1.2)	Summary Description (NPHS Cycle 4/CCHS 1.1)	Changes from source / past use	Reason(s) for change / Additional Comments
						significant changes were made to the module.
20 FLF	Labour Force (Specific to CF)	CCHS 1.1	CCHS 1.2 Labour Force module adapted for CF. Current employment status Multiple job status Occupation in civilian job Work pattern past 7 days Questions relating to CF and civilian job Health reason – not currently working; absent from work; not looking for work.	Current employment status Occupation Work pattern past 12 months	Work pattern past 7 days Questions relating to CF and civilian job Deleted: Questions related to job search	Modified from CCHS 1.2 version to reflect needs of CF population NOTE: This module was adapted specifically for the CF population and represents a break with past modules and therefore cannot be compared historically.
21 WST	Work stress	CCHS 1.1	Derived scale which measures different aspects related to work stress, including: Decision latitude Psychological job demand Physical workload Job insecurity Social support at work Job satisfaction	Derived scale which measures different aspects related to work stress, including: Decision latitude Psychological job demand Physical workload Job insecurity Social support at work Job satisfaction	Added: Use of a booklet to display response categories.	Reduce interview time and response burden.
22 INC	Income	CCHS 1.1 NPHS Cycle 4	Personal and household income.	Personal and household income.		
23	Exit	CCHS 1.1	Standard module.		No change.	

3. Sample Design

3.1 Target Population

The target population for the CF Component was all full time regular members of the Canadian Forces, and reservists who have paraded at least once in the past six months. As of May 2001, the Canadian Forces had approximately 57,000 full time regular force members and 24,000 reserve force members.

3.2 Sample Size

One of the key considerations in designing a survey is the size of the sample. Since every survey is different, there are no exact rules for determining sample size. Generally factors like cost, time, operational constraints and the desired precision of the final estimates have to be appraised and balanced before making a final decision. After looking at various scenarios it was decided that 5,000 responding full time members and 3,000 responding reservists would be required at survey completion to enable the analysis sought at satisfactory precision levels. To ensure the survey ended with the targeted responding populations, the sample sizes were enlarged before data collection to take into account out-of-scope persons and anticipated non-response. For this reason a sample size of 8,000 full time members and 4,800 reservists were initially selected.

3.3 Sample Frame

The sample frame used for this component was an administrative list of all regular and reserve force members as of May 2001. This list was provided to Statistics Canada by the Department of National Defence (DND) and was taken from the Canadian Forces Peoplesoft Human Resource Database. This sample frame contained some information on each person such as gender, region, rank, military base, environment, mother tongue, etc.

3.4 Stratification and Sample Allocation

In order to improve the efficiency of a survey design, samplers usually partition the target population further into strata, from which samples are then selected independently. If the population units in each stratum are relatively homogeneous, then the size of the sample required to obtain estimates of a specified precision will be much smaller than the size needed under an unstratified design. There are however some factors to consider before stratifying the population units.

First, defining a large number of design strata for a relatively small target population could result in several very small strata. Second and most important, the volatility of some characteristics used to stratify the population units over time could generate several stratum jumpers at the time of the interview which will furthermore result in an increased variance (less precision) of the final estimates. A stratum jumper is a sample unit that has to be assigned to a different design stratum at the time of interview because of a change in one of the characteristics. This often occurs when there is an extended period of time between the creation of the source used to stratify and select the sample and the date of the interview. For this survey, each target population (regular force members and reservists) was stratified by gender and rank. To avoid very small cells the rank characteristic was collapsed into three categories for the male group and two categories for the female group.

Once the stratification criteria are established the total sample has to be allocated between the strata. For this survey it was decided that a good balance between the reliability of the estimates for each design stratum and for the entire target population was required. To achieve this goal a well-known allocation scheme called power allocation¹ was applied using a power $q=0.3$.

Tables 3.1 and 3.2 give the population and the targeted sample sizes for each design stratum. Note that these figures represent responding sample units to be obtained at survey completion meaning that they will be inflated to take into account expected non-response before going in the field for data collection.

Table 3.1. Population size and targeted (responding) sample size for regular force members by design strata

Gender	Rank	Population size	Sample size
Male	Pte-MCpl	28,121	1,418
	Sgt-CWO	11,184	1,077
	Officers	10,790	1,065
	Total	50,095	3,560
Female	Pte-CWO	4,796	834
	Officers	1,661	606
	Total	6,457	1,440
Total		56,552	5,000

¹ Bankier, M. (1988). Power Allocations: Determining Sample Sizes for Subnational Areas. *The American Statistician*, Vol. 42, 174-177.

Table 3.2. Population size and targeted (responding) sample size for reserve force members by design strata

Gender	Rank	Population size	Sample size
Male	Pte-MCpl	12,162	860
	Sgt-CWO	2,872	557
	Officers	3,555	595
	Total	18,589	2,012
Female	Pte-CWO	4,263	627
	Officers	676	361
	Total	4,939	988
Total		23,528	3,000

3.5 Sample Selection

The sample was selected from the sample frame using a systematic sampling approach within each design stratum. Within each design stratum, the units were sorted by region (Atlantic, Quebec, Ontario, Prairies) and CF environment (land, air, sea) and the final sample was obtained using a systematic sampling scheme. Such an approach guaranteed a proportional representation of units for each region and CF environment although these criteria were not explicitly included in the stratification.

3.6 Sample allocation over collection period

Because of the bulk of the work for the interviewers and the availability of CF members to participate in the survey, the sample of the CF regular force members was divided into two collection periods: May to August and September to November 2002. The allocation over the two collection periods was not done randomly but according to the availability of each selected person instead. This was possible because once the sample was selected, a tracing of all selected persons in the sample was conducted in order to determine the actual contact information of each member. During that tracing, the availability of each member was asked and then the sample was to either of the two collection periods using that information. For reserve members of CF, there was only one collection period (May to November 2002). So, the reserve sample was all sent in May 2002.

Also, for both the regular and reserve samples, a random 10% of the initial sample was put aside and not sent into the field for collection. This was done to counterbalance a higher response rate than originally forecast and incurring a collection budget deficit. In the case of low response rates, it was planned to send this held-back sample into the

field in the second half of survey collection. In the end, as the response rates attained were very good, it was not necessary to send the held-back sample into the field for either the regular or reserve samples.

4. Data Collection

4.1 Questionnaire Design and Data Collection Method

Data collection took place monthly between May and December 2002. Those durations allowed for spreading the workload in the field and more time in which to contact respondents who might be departing or returning from field deployments and or training courses. The vast majority of CF Component interviews were conducted face-to-face during working hours in private on-base rooms, reserved by DND for survey interviewing.

The computer-assisted interviewing method (CAI) was used and the questionnaire was programmed in BLAISE.

CAI offers a number of data quality advantages over other collection methods. First, question text, including reference periods and pronouns, are customised automatically based on factors such as the age and sex of the respondent, the date of the interview and answers to previous questions.

Second, edits to check for inconsistent answers or out-of-range responses are applied automatically and on-screen prompts are shown when an invalid entry is recorded. Immediate feedback is given to the respondent and the interviewer is able to correct any inconsistencies.

Third, questions that are not applicable to the respondent are skipped automatically.

A total of 5,155 Regular Force members were interviewed, yielding a response rate of 79.5%. For the Reserve Force the analogous numbers were 3,286 members interviewed and a response rate of 83.5%.

4.2 Supervision and Control

CAPI interviewers worked independently from their homes using laptop computers and were supervised from a distance by senior interviewers. Completed interviews were transmitted daily to Statistics Canada's head office using a secure telephone transmission directly from the interviewer's home.

4.3 Testing

Due to the complex nature of this survey content as well as to the rather probing nature of the questions, qualitative testing was undertaken for both the CCHS and separately for the CF Component. This qualitative testing consisted of one-on-one interviews and

was organized by the Questionnaire Design Resource Centre at Statistics Canada. Its main purpose was to test acceptance of survey content and procedures and to test questionnaire wording and flow. The qualitative testing specific to the CF Component was principally testing acceptance of the PTSD survey content and procedures.

Pilot testing of both the CCHS and CF Component was also conducted. The objectives of these tests were to:

- Determine the respondents willingness and ability to provide the information
- Provide an indication of the flow, the length of the interview and the response rates
- Test the computer application
- Determine the effectiveness of the procedures designed to contact the respondents (principally of the CF Component)

The CF Component also conducted focus group testing. The purpose of this testing was to:

- Again, obtain information on the respondents willingness and ability to provide the information and determine what would encourage response
- Determine how the CF membership would react to Statistics Canada, an external agency, collecting the survey information
- When to best and how to best contact the member
- What measures that the membership would like to see to ensure confidentiality of the information
- How the membership wanted the results to be made available

4.4 Interviewing

Data collection took place monthly for both the CCHS and the CF Component between May and December 2002. Those interviewing durations allowed the interviewer workload to be spread out in the field while eliminating possible seasonality effects on some mental health characteristics. They also, in the case of the CF Component allowed for more time in which to contact respondents who might be departing/returning from field deployments and/or training courses. The vast majority of CF Component interviews were conducted face-to-face during working hours in private on-base rooms, reserved by DND for survey interviewing. The computer-assisted interviewing method was used. Proxy reporting was not permitted.

4.5 Minimising Non-response

All regular force sample originally identified by Statistics Canada were traced by the CF to ensure that the Statistics Canada interviewer had the most recent work contact numbers. When confirmed by the CF, the numbers were passed to Statistics Canada's interviewers to make telephone contact and arrange a convenient interview time. Interviewers contacted reserve force members directly either at their parade site or their place of residence. Again, once the interviewer had made contact they would arrange a convenient time to conduct the interview. If the contact numbers provided were invalid, Statistics Canada would ask the CF to track the selected respondent. Reserve force members, participating in the survey who did so on a night not their regular parade night, were permitted to charge the CF as if it were a regular parade night.

Overall, the CF Component achieved excellent response rates: approximately 80% and 83% respectively for the regular and reserve forces. A large part of this success was due to the tracing/tracking operation and the many communications activities undertaken to ensure the CF membership was aware of the survey (its objectives, when it was being conducted, the randomness of the sample selection process, how selected members were to be contacted, that responding to the survey was voluntary, that the data were being collected under the authority of the Statistics Act and the confidentiality of the data and the survey process).

The interview was conducted in the language of choice of the member. This was determined at the beginning of the interview.

4.6 Special Circumstances during CF Component Collection Operations

Data collection took place between May 2002 and December 2002, a period of 7 months. This plan was carefully designed to ensure that the survey's quality objectives would be met. The final month of collection was planned to provide interviewers with an opportunity for a final attempt to convert non-responding cases.

For most of Statistics Canada's household surveys, collection operations proceed smoothly and within the established parameters. For Cycle 1.2, the total workload imposed by the lengthy interview, complex content and difficult respondent burden in some cases, proved to be a challenge for the data collection infrastructure in place. To ensure the success of collection operations, a number of strategies were put into place. Among these were, specialized training on mental illness and how to conduct difficult interviews for interviewers, careful planning of collection periods and interviewer

assignment sizes, addition of staff in key areas and, only in very special circumstances, the decision to allow limited data collection by telephone.

To ensure that data quality was maintained during collection, a monitoring system was put in place. Various aspects related to the interview process were monitored at the interviewer level such as average interview time and item non-response. Regular weekly feedback from Head Office to the Regional Offices helped maintain and correct problems as they occurred. A validation process was also put in place in the field to monitor the quality of the work performed by the interviewers.

5. Data Processing

5.1 Editing

Most editing of the data was performed at the time of the interview by the computer-assisted interviewing (CAI) application. It was not possible for interviewers to enter out-of-range values and flow errors were controlled through programmed skip patterns. Also, CAI ensured that questions that did not apply to the respondent were not asked.

In response to some types of inconsistent or unusual reporting, warning messages were invoked but no corrective action was taken at the time of the interview. Where appropriate, edits were instead developed to be performed after data collection at Head Office. Inconsistencies were usually corrected by setting one or both of the variables in question to “not stated”.

5.2 Coding

Pre-coded answer categories were supplied for all suitable variables. Several questions in the CF Component questionnaire allowed write-in responses. For some of these questions, write-in responses were either coded into one of the existing listed categories if the write-in information duplicated a listed category or into new unique categories.

5.3 Creation of Derived and Grouped Variables

To facilitate data analysis, a number of variables on the file have been derived using items found on the questionnaire. Derived variables generally have a “D” or “F” in the fifth character of the variable name. In some cases, the derived variables are straightforward, involving collapsing of response categories. In other cases, several variables have been combined to create a new variable. The Derived Variable document (Appendix D) provides details on how these more complex variables were derived.

5.4 Imputation

Due to some technical problems in certain skip patterns of the suicide module, some respondents were not asked the questions required for the calculation of the derived variables ‘12-month suicidal thought’ and ‘12-month suicidal attempt’. Consequently, important information was missing for those individuals (this represented 5.02% of all respondents for the ‘12-month suicidal thought’ and 0.60% of all respondents for the ‘12-month suicidal attempt’). Moreover and because of their profiles, those individuals are more likely to have had a 12-month suicidal thought and/or a 12-month suicidal attempt which would have resulted in an underestimation of the prevalence. To fill in these missing responses, values were imputed using the approach described below.

Two methods of imputation were used, a deterministic method and one based on a logistic regression model. As it was possible to derive directly the missing value based on other responses for some respondents, a deterministic imputation method was first used. This was the case for all missing values for the 12-month suicidal attempt and for about one fourth of the missing values for the 12-month suicidal thought. For the remaining missing values of the 12-month suicidal thought, a logistic regression imputation method was used. The method consisted in fitting a logistic regression model between the variable to impute (the 12-month suicidal thought) and correlated characteristics using respondents without missing values who were similar to those to impute. Using the fitted model, a probability of response (yes or no) was calculated for each respondent who needed imputation; a response was then imputed based on that probability.

5.5 Weighting

The principle behind estimation in a probability sample such as the CF Component is that each person in the sample “represents”, besides himself or herself, several other persons not in the sample. For example, in a simple random 2% sample of the population, each person in the sample represents 50 persons in the population. In the terminology used here, it can be said that each person has a weight of 50.

The weighting phase is a step that calculates, for each person, his or her associated sampling weight. This weight appears on the file, and must be used to derive meaningful estimates from the survey. For example, if the number of individuals who had a major depressive episode is to be estimated, it is done by selecting the records referring to those individuals in the sample having that characteristic and summing the weights entered on those records. Details of the method used to calculate sampling weights are presented in Section 6.

6. Weighting

In order to produce estimates from survey data that are representative of the covered population, and not just the sample itself, a user must incorporate the survey weights into their calculations. A survey weight is given to each person included in the final sample, that is, the sample of persons having answered the survey. This weight corresponds to the number of persons represented by the respondent for the entire population. Table 6.1 presents an overview of the different adjustments, part of the weighting strategy, in the order in which they are applied for each of the two types of population.

Table 6.1. Weighting adjustments

Adjustments	Population	
	Regulars	Reservists
1 – Initial sampling weight	Yes	Yes
2 – Sample reduction	Yes	No
3 – Removal of out-of-scope units	Yes	Yes
4 – Person nonresponse	Yes	Yes

All these adjustments are explained in the following section.

6.1 Adjustments applied to the initial weight

Adjustment 1 – Initial sampling weight

As described in section 3, the CF Component used a list of regular members and a list of reservists of the Canadian Forces to select its sample. These two lists represent the regular members and reservist populations at the time of the survey. According to the sample design described in section 3, each of the two populations was divided into 5 strata based on gender and rank. A sample using a systematic sampling approach was selected in each of the 5 strata. Therefore, in each stratum, the initial sampling weight was calculated as follows:

$$\frac{\text{Number of persons in the population}}{\text{Number of persons in the sample}}$$

This weight is called weight 1.

Note: The number of persons in the sample represents the total number of persons selected minus the 10% hold back sample and never sent.

Adjustment 2 – Sample reduction

In addition to the 10% hold back sample before survey collection, there was another sample reduction for the regular members only for the units to send in the 2nd collection period (note: the regular members sample was divided into two collection periods once the tracing done to facilitate the collection operation, and to account for the availability of each person in the sample, was completed). This sample reduction was done because the response rate from the units sent in the 1st collection period was much higher than originally estimated. The reduction was necessary in order to not surpass the allocated collection budget for this survey. Consequently, some of the persons originally selected in the sample were not sent in the field for collection. Then, the weights of the persons affected by this reduction had to be adjusted to take into account the reduction in the sample size. The sample reduction was based on response rates observed during the 1st collection period and done using reduction classes (formed by regions and elements in each stratum). Therefore, a different reduction rate was applied within each reduction class. Within each class, the adjustment 2 was calculated as follows:

$$\frac{\text{Number of persons in the initial 2}^{\text{nd}} \text{ collection period sample}}{\text{Number of persons in the reduced 2}^{\text{nd}} \text{ collection period sample}}$$

This adjustment 2 applied to weight 1 gives the weight 2. Since, no reduction was done to the sample of the 1st collection period for regulars, nor to the reservist sample, the weight 2 is identical to weight 1 for these persons.

Adjustment 3 – Removal of out-of-scope units

Among all persons sampled, a certain proportion of them are identified during collection as being out-of-scope. Persons that were not members of the Canadian Forces at time of collection are considered out-of-scope for the survey. Records for these persons were simply removed from the sample, leaving only in-scope persons. They kept the same weight as in the previous step, which is now called weight 3

Adjustment 4 – Person nonresponse

During collection, a certain proportion of interviewed persons inevitably resulted in nonresponse. This usually occurred when a person refused to participate in the survey, provided unusable data, or could not be reached for an interview. Weights of nonresponding persons were distributed to respondents using response propensity classes. The CHAID (Chi-Square Automatic Interaction Detector) algorithm available

in Knowledge Seeker² was used to identify which characteristics best split the sample into groups that were dissimilar with respect to response/nonresponse. Note that groups were formed independently within each stratum of each population (regulars and reservists). The list of all CF members used to select the sample of regulars and reservists contained some information on the nonrespondents such as the gender, the rank, the military base, and the element. These variables were used in the creation of the response classes. An adjustment factor was therefore calculated within each class as follows:

$$\frac{\text{Sum of weight 3 for all persons}}{\text{Sum of weight 3 for all responding persons}}$$

The weight 3 for responding persons was multiplied by this factor to produce the weight 4. Nonresponding persons were dropped out of the process at this point.

Consequently, the weight 4 corresponds to the *final CF Component weight* that can be found on the master file with the variable name WTSB_M.

² ANGOSS Software (1995). Knowledge Seeker IV for Windows - User's Guide. ANGOSS Software International Limited.

7. Data Quality

7.1 Response Rates

In total and after removing the out-of-scope units, 6,487 regular members and 3,957 reservists were selected to participate in the CF Component. Out of these selected persons, a response was obtained for 5,155 regular members and 3,286 reservists which results in an overall response rate of 79.5% for regulars and 83.0% for reservists. Table 7.1 gives response rates by type of population for each of the 5 designed strata.

Table 7.1. Responses rates by stratum

Population	Stratum (Gender and Rank)	Number of persons in scope	Number of respondents	Response Rate
Regulars	Total	6,487	5,155	79.5
	Male Pte-MCpl	1,886	1,432	75.9
	Male Sgt-CWO	1,373	1,167	85.0
	Male Officers	1,382	1,066	77.1
	Female Pte-CWO	1,045	887	84.9
	Female Officers	801	603	75.3
Reservists	Total	3,957	3,286	83.0
	Male Pte-MCpl	1,104	853	77.3
	Male Sgt-CWO	763	666	87.3
	Male Officers	799	670	83.9
	Female Pte-CWO	832	697	83.8
	Female Officers	459	400	87.1

7.2 Survey Errors

The estimates derived from this survey are based on a sample of individuals. Somewhat different figures might have been obtained if a complete census had been taken using the same questionnaire, interviewers, supervisors, processing methods, etc. as those actually used. The difference between the estimates obtained from the sample

and the results from a complete count under similar conditions is called the sampling error of the estimate.

Errors which are not related to sampling may occur at almost every phase of a survey operation. Interviewers may misunderstand instructions, respondents may make errors in answering questions, the answers may be incorrectly entered on the computer and errors may be introduced in the processing and tabulation of the data. These are all examples of non-sampling errors.

7.2.1 Non-sampling Errors

Over a large number of observations, randomly occurring errors will have little effect on estimates derived from the survey. However, errors occurring systematically will contribute to biases in the survey estimates. Considerable time and effort was made to reduce non-sampling errors in the CF Component. Quality assurance measures were implemented at each step of data collection and processing to monitor the quality of the data. These measures included the use of highly skilled interviewers, extensive training with respect to the survey procedures and questionnaire, and the observation of interviewers to detect problems. Testing of the CAI application and field tests were also essential procedures to ensure that data collection errors were minimized.

A major source of non-sampling errors in surveys is the effect of non-response on the survey results. The extent of non-response varies from partial non-response (failure to answer just one or some questions) to total non-response. Partial non-response to the CF Component was minimal; once the questionnaire was started, it tended to be completed with very little non-response. Total non-response occurred either because a respondent refused to participate in the survey, or because the interviewer was unable to contact the selected respondent. Total non-response was handled by adjusting the weight of persons who responded to the survey to compensate for those who did not respond. See section 8 for details of the weight adjustment for non-response.

7.2.2 Sampling Errors

Since it is an unavoidable fact that estimates from a sample survey are subject to sampling error, sound statistical practice calls for researchers to provide users with some indication of the magnitude of this sampling error. The basis for measuring the potential size of sampling errors is the standard deviation of the estimates derived from survey results. However, because of the large variety of estimates that can be produced from a survey, the standard deviation of an estimate is usually expressed relative to the estimate to which it pertains. This resulting measure, known as the coefficient of variation (CV) of an estimate, is obtained by dividing the standard

deviation of the estimate by the estimate itself and is expressed as a percentage of the estimate.

For example, suppose hypothetically, that one estimates that 12% of regular members of the Canadian Forces aged 18 and over have had at least one major depressive episode during their life and that this estimate is found to have a standard deviation of .007. Then the CV of the estimate is calculated as:

$$(.007/.12) \times 100\% = 5.83\%.$$

Statistics Canada commonly uses CV results when analyzing data, and urges users producing estimates from the CF Component data files to also do so.

8. File Usage

This section starts by describing the weight variable and explains how it should be used when doing tabulations on the master file. This is followed by an explanation of the variable naming convention that is employed for the CCHS. The last part of the section discusses alternate approaches to data access available to analysts.

8.1 Use of Weights

Only one weight, WTSB_M, appears on the file. This weight is applicable to all age groups, provinces and territories. ALL VARIABLES ON THE FILE SHOULD BE ANALYZED USING THIS WEIGHT.

(For a more detailed explanation on the creation of this weight, see Section 6 of the documentation on weighting.)

8.2 Variable Naming Convention

The CF Component employs a variable naming convention that allows data users to easily use and identify the data based on module and cycle. The variable naming convention includes the following mandatory requirements: restrict variable names to a maximum of 8 characters for ease of use by analytical software products; identify the survey cycle (Cycle 1.1, 1.2 ...) in the name; and allow conceptually identical variables to be easily identifiable over survey cycles. The variable names for these identical modules and questions should only differ in the cycle position identifying the particular survey cycle in which they were collected.

8.2.1 Variable Name Component Structure in CF Component

Each of the eight characters in a variable name contains information about the type of data contained in the variable.

Positions 1-3:	Module/Questionnaire section name
Position 4:	Survey cycle
Position 5:	Variable type
Positions 6-8:	Question number

For example: The variable from question 38B, Major Depressive Episode Module, Cycle 1.2 (DEPB_38B):

Positions 1-3:	DEP major depressive episode module
Position 4:	B Cycle 1.2 <i>or</i> CF Component
Position 5:	_ (_ = collected data)
Positions 6-8:	38B question number and answer option

8.2.2 Positions 1-3: Variable / Questionnaire Section Name

The following values are used for the section name component of the variable name:

CF	Canadian Forces identifier	MED	Medication use
ADM	Administration	PAD	Panic disorder
ALC	Alcohol use	PTS	Post traumatic stress disorder
ALD	Alcohol dependence	RAC	Restriction of activities
CAS	Childhood and adult stressors	SAM	Sample identifiers
DEP	Major depressive episode	SCR	Screening section
DHH	Household contact and demographics	SDC	Socio-demographic characteristics
DIS	Distress	SOP	Social phobia
DPL	Deployments	SPV	Spiritual values
MHP	Mental health profile	SR1	Mental health services utilization
DYS	Dysthymia	SR2	Mental health services utilization
EDU	Education	SSM	Social support
ETA	Eating troubles assessment	STR	Stress
FLF	Canadian forces labour force	TWD	Two-week disability
GAD	General anxiety disorders	WST	Work stress
GEN	General health	WTS	Sample weights
INC	Income		

8.2.3 Position 4: Cycle

Cycle	Description
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A <u>Cycle 1.1:</u>	<u>Canadian Community Health Survey</u>
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:Regional level survey, stratified by health region;
 :Common content and optional content selected by health region;
 :Estimates for health regions, provinces, territories and Canada.

B Cycle 1.2: Canadian Community Health Survey, Mental Health and Well-Being

- : Provincial level survey;
- : Focus content with additional, general content;
- : Estimates for the provinces and Canada.

B Canadian Forces (CF) Component

- : National level survey;
- : Focus content with additional, general content;
- : Estimates by rank and CF element (land, air, sea)

8.2.4 Position 5: Variable Type

_	Collected variable	A variable that appeared directly on the questionnaire
C	Coded variable	A variable coded from one or more collected variables (e.g., SIC, Standard Industrial Classification code)
D	Cross-sectional derived variable	A variable calculated from one or more collected or coded variables, usually calculated during head office processing (e.g., Health Utility Index)
F	Flag variable	A variable calculated from one or more collected variables (like a derived variable), but usually calculated by the data collection computer application for later use during the interview (e.g., work flag)
G	Grouped variable	Collected, coded, suppressed or derived variables collapsed into groups (e.g., age groups)
I	Imputation flag variable	A flag variable associated with another variable in the data file and that indicates whether the latter was imputed or not. Refer to the data dictionary to identify which variable the flag variable is associated with.

8.2.5 Positions 6-8: Variable Name

In general, the last three positions follow the variable numbering used on the questionnaire. The letter "Q" used to represent the word "question" is removed, and all question numbers are presented in a two-digit format. For example, question Q01A in the questionnaire becomes simply 01A, and question Q15 becomes simply 15.

For questions which have more than one response option, the final position in the variable naming sequence is represented by a letter. For this type of question, new variables were created to differentiate between a "yes" or "no" answer for each response option. For example, if Q2 had 4 response options, the new questions would be named Q2A for option 1, Q2B for option 2, Q2C for option 3, etc. If only options 2 and 3 were selected, then Q2A = No, Q2B = Yes, Q2C = Yes and Q2D = No.

8.3 Access to Master File Data

The Research Data Centre's Program allows researchers to submit to Statistics Canada, a research project that uses data from the Master File. These projects are accepted based on a set of specific rules. When the project is accepted, the researcher is designated as a "deemed employee" of Statistics Canada for the duration of the research, and given access to the Master File data from designated Statistics Canada sites. For more information on this program, please consult the Statistics Canada website at the following address:

<http://www.statcan.ca/english/rdc/index.htm>. For any additional information contact the Data Access Unit at the following e-mail address: cchs-escc@statcan.ca.