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Disability Findings from the 2010 Survey on Transition to Civilian Life

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Disability Findings from the 2010 Survey on Transition to Civilian Life

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Disability Findings in the *Survey on Transition to Civilian Life*

Executive Summary

A key advancement of the 2006 New Veterans Charter is the provision of rehabilitation services for CAF (Canadian Armed Forces) Veterans[1] who have chronic effects of service-related illness and injury that limit functioning. The purpose of NVC rehabilitation and vocational services is to restore functioning in transition to civilian life and thereby mitigate disability in work, home and community life. There are no publications describing the extent and nature activity limitations in CAF Veterans who are not participating in VAC programs.

The 2010 *Survey on Transition to Civilian Life* (STCL) examined the health, activity limitations and determinants of health of former Canadian Armed Forces (CAF) Regular Force personnel (Veterans) who released from service in 1998-2007, 2-12 years after leaving service. STCL 2010 was the first comprehensive study not only of Veterans participating in Veterans Affairs Canada (VAC) programs (VAC clients for short) but also the larger majority living in the general Canadian population. Initial findings from STCL are available in other reports (see References). Previous reports focused on income, health, general adjustment to civilian life and other topics, but not activity limitations.

This report is the first comprehensive descriptive analysis of the STCL activity limitation findings. The Veterans were surveyed in 2010 at a time when significant advancements in services for serving personnel and Veterans experiencing disability were being put into place by VAC, DND (Department of National Defence) and CAF. Most in the study population had released from service prior to the New Veterans Charter programs in 2006, and prior to additional significant advancements in services for serving personnel and Veterans with mental health problems that were established later.

The Survey

The STCL was the first comprehensive, national, statistically representative survey of former CAF Regular Force personnel living in the general Canadian population. The survey measured activity limitations, health and determinants of health including socioeconomic characteristics (age, gender, income and education); military characteristics (rank, deployment, length of service); stress, coping and satisfaction with life; social support; and healthcare and rehabilitation.

Study Goal, Objectives and Research Questions

The plan for this analysis was determined in consultation with VAC staff in policy and program and service delivery, at head office and in the field. Specific questions were identified in our consultations with VAC staff and within the author group.

Goal: Explore the activity limitation findings from the Survey on Transition to Civilian Life to provide evidence that will inform Veteran services and programs in the immediate and middle horizon time frames, and to provide a baseline for further work to support long range planning.

[1] Veteran = Former CAF member regardless of length of service.

Specific Objectives

1. Develop an analysis framework consistent with VAC's operational disability framework and the WHO (World Health Organization) ICF (International Classification of Functioning and Health).
2. Describe the prevalence of activity limitations in relation to socioeconomics, health, stress and coping, and other determinants of health; including VAC clients and non-clients and those in the Rehabilitation program.
3. Identify subgroups of Veterans to focus resources for mitigating disability and further statistical analysis to identify risk and protective factors for activity limitation.

Analysis Framework

The survey design was based on the Veterans' well-being conceptual framework, which views disability as one of the core concepts. This analysis used the World Health Organization ICF (International Classification of Functioning and Health) conceptual framework for disability in order to be consistent with national health and disability surveys in Canada and other nations, current disability research paradigms, and VAC's approach to disability. Disability is viewed as difficulty functioning in work, community or family roles owing to interactions of factors within the person (health conditions, impairments and personal factors such as sociodemographic characteristics and coping) and factors in their external social and physical environments (barriers and facilitators). Activity limitation is a key factor in the experience of disability. The survey did not provide information on either specific role participation limitations or environmental barriers and facilitators.

Prevalence of Activity Limitations in Relation to Socioeconomics, Health, Determinants of Health

No Average Veteran

No "average" CAF Regular Force Veteran released in 1998-2007: They ranged in age from 20 to 67 and released in all ranks, with a wide range of lengths of service, socioeconomic, health and disability characteristics. Services supporting Veterans in transition to civilian life must account for this variability.

Activity Limitation More Prevalent in the Veterans than the Canadian Population

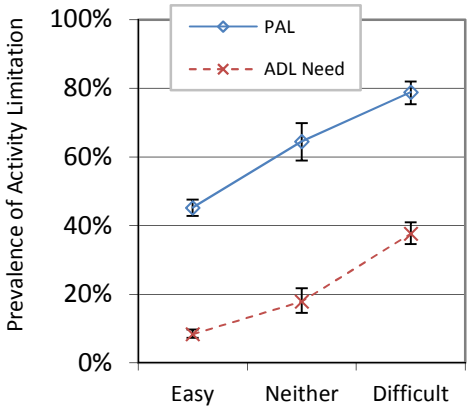
The majority of VAC clients (93%) and a third (38%) of non-clients had PAL (participation and activity limitation), as would be expected because Veterans primarily approach VAC for assistance with chronic health problems and related disability. Participation and activity limitation (PAL) was twice as prevalent in Veterans (56%) as in the general Canadian population (28%). ADL-need was about three times more prevalent in Veterans (17%) than the general population (5%). The most common need was doing everyday housework (14%), followed by getting to appointments and running errands (8%), and then other ADLs (3-5%). Chronic health problems reduced the amount or kind of activity much more commonly in Veterans than in the general Canadian population in all four major life domains:

- At home: 43% vs. 16%,
- At school in those at school 22% (comparator sample size too small for reliable estimate in those at school)
- At work in those at work: 35% vs. 13%,
- In other activities such as leisure and transportation: 44% vs. 16%.

This cross-sectional survey cannot determine the cause of higher activity limitation prevalence rates in Veterans; however painful musculoskeletal conditions and anxiety disorders were more common in these Veterans than in the general population.

Ease of Adjustment to Civilian Life

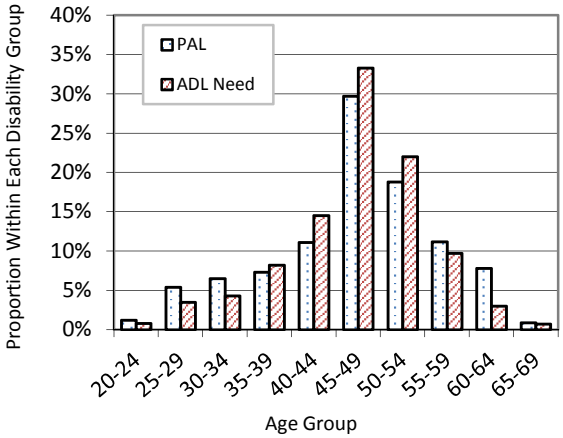
Ease of adjustment to civilian life was determined using a single self-report question. Although most had an easy adjustment, 38% did not. The prevalence rates of PAL and IADL-need were highest in those reporting difficult adjustment: nearly 80% had PAL and nearly 40% had ADL-need.



Age and Sex

Age and sex are two important factors to consider in understanding disability.

The STCL study population had two age peaks: 25-29 years and 45-49 years.[2] Nearly a fifth released as recruits and cadets with short lengths of service, and the majority of those in the older age groups were junior and senior non-commissioned members (NCMs). Many of the junior NCMs released with less than 20 years of service. Physical health conditions accumulate with age, but mental health conditions do not. The prevalence of mental health conditions peaked in the 40-59 age groups, the same age groups with the highest prevalence rates of activity limitation.



The majority of these Veterans were men; 12% were women. This limited what the survey could tell us about differences in disability between men and women, because the sample size of women was low.
There was no significant difference in PAL prevalence rates between men and women, but there was a slightly higher prevalence of ADL-need in women.

Sociodemographic and Socioeconomic Factors

Marital Status. PAL and ADL-need was most prevalent in those who were widowed/separated/divorced and least prevalent in those single/never married.

Education. PAL prevalence was not statistically different across levels of education. The prevalence of ADL-need was lower in those with some post-secondary education.

Income. PAL and ADL-need prevalence rates increased with decreasing household income.

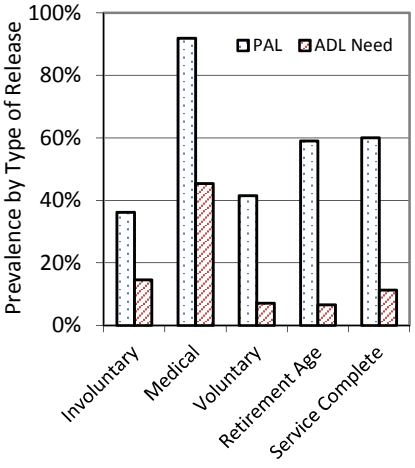
[2] In these age frequency histograms, the weighted population estimates for the youngest and oldest age groups are not reliable owing to small sample sizes (< 30).

Employment. In STCL study population: 74% were employed, 6% were unemployed, 17% were not in the workforce (not working, not absent from a job and did not do anything to find work), and 3% were permanently unable to work. Half of those who were employed (52%) or unemployed (50%) had PAL. The PAL rate was higher for those not in the workforce (70%) and highest for those who were permanently unable to work (100%). More than half (51%) of those not in the workforce had worked or attended school or training in the previous 12 months. ADL-need rates followed a similar pattern but were slightly higher in the unemployed (18%) than employed (12%). More than 80% of those who were unable to work had PAL and ADL-need. There was no direct measure of "precariously employed". There were significant differences between the four groups in well-being measured as health, activity limitation and determinants of health.

Military Characteristics

Rank. PAL and ADL-need were more prevalent in higher ranks within both officer and non-commissioned ranks, possibly reflecting the greater prevalence of physical health conditions with age. The highest PAL and ADL-need prevalence rates were in junior non-commissioned members, who also had the highest prevalence of the co-occurrence of physical and mental health conditions (34%).

Years of Service. Years of service is highly correlated with age, which explains the correlation of PAL and ADL-need rates with years of service. However the highest rates of both were in mid-career at 10-19 years of service and that group also had the highest rates of comorbid physical and mental health conditions (42%), more than double the comorbidity prevalence rates in the lower and higher years of release.



Type of Release. Not surprisingly, the highest prevalence rates of activity limitation were in those who had been released from service owing to “medical release” meaning those who had medically-based employment limitations (impairments related to physical or mental health conditions) that did not meet universality of service (24% of the study population).

Service Branch (Environment, Element). There was no statistically significant association between service branch (Army, Navy, Air Force) and either PAL or ADL-need.

Deployment. The prevalence rates of both PAL and ADL-need among those who had deployed outside Canada for 30+ days were significantly higher than in those who had not deployed. However, age-related health status might be an important factor in at least partially explaining this difference: Those who did not deploy were much younger on average and had lower prevalence rates of both physical health conditions (deployed = 76% vs. non-deployed = 47%) and mental health conditions (28% vs. 15%).

Enrolment Era. Enrolment era was significantly associated with PAL and ADL-need, probably owing to age. Those who enrolled in the 2000s were much younger than those who enrolled earlier, and chronic physical health conditions are much less prevalent in younger adults.

Year of Release. There was some variability in the prevalence rates of PAL and ADL-need by year of

release, but no clear trend over time.

Health Status and Conditions

Self-reported health status. There was association between health status and activity limitation, as would be expected since activity limitation in this context requires the presence of a health condition and related impairments. For both self-rated health and self-rated mental health, the prevalence rates of PAL and ADL-need were highest in those with fair/poor self-rated health.

Chronic Health Conditions. There was a clear association between both PAL and ADL-need and all chronic physical health conditions (PHCs) and all chronic mental health conditions (MHCs). Although activity limitation prevalence rates were higher for mental health conditions than most physical health conditions, particularly for ADL-need, the degree to which physical versus mental health contributes to the association with activity limitation is not clear, since most of those with MHCs had comorbid PHCs (95%) while less than a third with PHCs had MHCs (28%).

Comorbidity. Comorbidity means the co-occurrence of two or more health conditions in the same person. These comorbidity findings are very important findings to keep in mind when interpreting the activity limitation data from this survey:

- 81% had a PHC and 24% had a MHC.
- 28% with a PHC also had a MHC.
- 95% with a MHC also had a PHC.

Activity limitation was concentrated in those with the highest levels of comorbidity:

- Of those with PAL, 65% had 3+ PHCs (26% had 3+PHCs/at least one MHC).
- Of those with ADL-need, 76% had 3+ PHCs (48% had 3+PHCs/at least one MHC).

PAL and ADL-need prevalence rates were higher in Veterans with higher comorbidity of either:

- A higher number of physical or mental health conditions; or
- Having both physical and mental health conditions together.

Activity limitation was concentrated in those with the highest levels of comorbidity:

- Overall, 41% of these Veterans had 3+ PHCs (25% had 3+ PHCs and no MHC, 16% had 3+ PHCs and a MHC).
- Of those with PAL, 65% had 3+ PHCs (26% had 3+PHCs/at least one MHC).
- Of those with ADL-need, 76% had 3+ PHCs (48% had 3+PHCs/at least one MHC).

Comorbidity of PHC, chronic pain and a MHC had very high rates of activity limitation: 93% for PAL and 50% for ADL-need.

Quality of Life. QualityMetric's SF-12 Short Form Health Survey is a measure of general health or health-related quality of life (HRQoL) including functioning. Low SF-12 scores (poor quality of life) were correlated with higher prevalences of PAL and ADL-need.

Health Behaviours

Heavy Drinking. Heavy drinking and activity limitation were not correlated. The prevalence rates of PAL and ADL-need in those with heavy drinking were not significantly different from the overall STCL average prevalence rates for both types of activity limitation.

Stress, Coping and Satisfaction

The stress, coping and satisfaction indicators in STCL 2010 included social support, sense of community belonging, mastery, life stress, and satisfaction with life. All were correlated with both measures of activity limitation:

- *Low social support. P*revalence rates of PAL and ADL-need were higher in those with low social support. Low social support was correlated with health-related reduction of activity in all four major life domains (home, school, work, and leisure/other).
- *Sense of community belonging.* PAL and ADL-need were correlated with weak sense of community belonging.
- *Mastery.* Low mastery, meaning sense of control over one's life, was correlated with PAL and ADL-need.
- *Life Stress.* PAL and ADL-need were both correlated with higher degrees of life stress
- *Satisfaction with Life.* ADL-need was correlated with low life satisfaction.

Health Care

Veterans with both PAL and ADL-need consistently more often had a regular physician and insurance for drug prescriptions, dental care and eyeglasses although the differences were slight and in some cases might not be statistically significant.

Degree of Activity Limitation

We used two methods to estimate degree of activity limitation:

1. Whether Veterans had no PAL, or PAL only, or both PAL and ADL-need. In those with no PAL, 81% were employed, as were 75% who had PAL only, and 49% who had PAL and ADL-need. The majority with PAL had an easy adjustment to civilian life (58%) and only about a quarter had a difficult adjustment (27%), however the reverse was true for those with both PAL and ADL-need (30% and 57%). These findings support the approach and indicate that there is a broad range of disability experience within those who have PAL.
2. Number of ADLs for which Veterans needed help: The prevalence rates of many adverse health and determinants of health characteristics increased as the number of ADLs for which Veterans needed help also increased. For example, the proportions of Veterans with poor or very poor self-perceived health increased from 10% in those who needed help with no ADLs to 70% of those who needed help with 3 or more ADLs.

Self-Reported Causes of Participation and Activity Limitation

Belief in a military service cause for their activity limitations was very prevalent Asked to pick one from among several causes of their impairments, the majority chose military work conditions (75%), including both clients (86%) and non-clients (61%). More non-clients identified ageing (10%) and disease or illness (7%) than clients. Very few Veterans identified emotional or mental health problems or conditions (2%) as a cause for their impairments, perhaps because some with mental health problems instead chose military work conditions. Furthermore, most of the examples provided in the question invoked physical rather than mental health, and did not include impairments common in mental health conditions such

as fatigue, difficulty concentrating, altered mood and behavioural difficulties. Eligibility for most VAC benefits, programs and services requires a service relationship, which might have influenced choices.

VAC Rehabilitation Program Participants

At the time of the survey, 4% (95% CI = 3.8-4.4%) of the STCL study Veterans were in the Rehabilitation program (sample size = 330 representing about 1,298 Veterans, 95% CI = 1,089-1,409). This sample can be considered statistically representative of CAF Regular Force Veterans who released during 1998-2007 and were in the Rehabilitation program as of March 2009. About half of the Rehabilitation program clients (51%) had left service prior to 2006 when the Rehabilitation program was established under the *Canadian Forces Members and Veterans Compensation and Reestablishment Act*. Veterans released prior to 2006 can apply to the Program.

- Veterans of all ages participated in the Rehabilitation program.
- On average, Rehabilitation program clients were age 43 years were younger than other VAC clients (age 48), and similar to non-clients (age 42). Note that the modal age group in the Rehabilitation program (40-49) corresponds with the age groups with the highest rates of activity limitation.
- Of STCL Veterans in the Rehabilitation program, the great majority (98%) had PAL and a majority (65%) had ADL-need. The proportion needing help with ADLs was much higher than the study population average, indicating that the degree of activity limitation and therefore disability of those in the program was higher than those who were not.
- 7% of the STCL Veterans who had PAL were in the Rehabilitation program, as were 16% with ADL-need. Of STCL Veterans not in the Program, 54% had PAL and 15% had ADL-need, reflecting both the broad range of disability experience in these Veterans (some did not require ADL assistance while some did), and opportunities for outreach (some might have been eligible and could have benefited). Further work is required to estimate need for assistance with management of disability among those not in the Rehabilitation program. Many with mild PAL could have been adapted to their situations and were not experiencing significant role disability.
- There were significant differences between clients in the Rehabilitation program and other Veterans. As a group, the Rehabilitation program clients had worse indicators in all dimensions of well-being, reflecting the complex nature of the health, disability and social challenges they were dealing with. However, like other Veterans, Rehabilitation program clients had high rates of having regular doctors and health insurance coverage.

Identification of Subgroups to Focus Resources for Mitigating Disability

It has been clear since the first analysis of the STCL data that there is no "average Veteran" and that the CAF Regular Force Veteran population is very heterogeneous. This makes it challenging to deploy resources to support Veterans in transition to civilian life. We used two approaches to identify subgroups of Veterans to clarify the picture:

1. Characteristics of subgroups with unusual disability rates.
2. Clusters of subgroups with similar socioeconomic and disability challenges.

Subgroups with Unusual Disability Rates

The report contains a table showing prevalence rates of PAL and ADL-need for all the categories of all indicators measured in STCL, both higher (possibly protective against disability) and lower (possible risk factors). VAC staff and others who develop programs and policy or work with individual Veterans to mitigate disability can inspect these tables to identify characteristics that would be useful in targeting limited resources or identifying those more likely to be experiencing disability. Further statistical analysis using regression modeling is under way to clarify these relationships.

Subgroups with Similar Challenges

CAF Regular Force Veterans surveyed in STCL 2010 were not all long-career soldiers, airmen/women or sailors who retired to civilian life after many years of service. Instead, they ranged in age from 20 to 67; had short, medium and long years of service; came from all ranks; and most entered the civilian workforce (MacLean *et al.* 2011). We used inspection to identify clusters with similar characteristics and needs (called "segmenting" in the business world). The analysis identified 4 age groups and 12 subgroups with recognizable trends in terms of health status and determinants of health needs.

The analysis highlighted two broad types of subgroups that might benefit from special attention: those with similar needs in large numbers (Veterans aged 30-59 who released from service in mid-career with non-commissioned ranks and physical and/or mental health problems), and those with high needs in small numbers: very young Veterans with health problems and limited resources, and those in the oldest age group with significant disability. This information will aid in targeting support resources.

Age 20-29. This was the healthiest age group, with the least disability, and was the least established in either military or civilian life. On the whole, the majority of these younger Veterans were starting out in their working careers and beginning to build marriages and families and generally would be more likely to have needs related to education, social support and employment than to health and disability. However, those who did have health problems could be less likely to have access to financial, education and social resources than older people. This group had the lowest rates of activity limitation.

Age 30-39. This was the second largest age group (18%). They generally left service with junior ranks and shorter lengths of service than older age groups, but were more likely to be established in military life prior to leaving service than younger Veterans, and were much more likely to be married. However, 32% released as recruits, so this was a mixed group. Like those aged 40-59, 27% had a difficult adjustment to civilian life, and they had the second highest rate of medical release (16%) after those aged 40-59. They also had the second highest prevalence of PAL (33%) and PAL plus ADL-need (10%), and considerable rates of physical and mental health conditions.

Age 40-59. Most of the CAF Veterans who released in 1997-2008 were in this age group (58%). In contrast to the younger Veterans, 27% of those with activity limitation were in this age group and many had both PAL and ADL-need, as would be expected given they are older and physical health conditions accumulate with age. However, this age group was worse off overall that older Veterans in this study population. The prevalence of mental health conditions was highest in this group. They were predominantly junior and senior NCMs and most had 10 or more years of service. This age group was more often married. Those with activity limitation less often had a university degree and less often were employed. The rate of being disabled or on disability was much higher in those with both PAL and ADL-need.

Age 60-69. Only 8% of the study population was in this age group, which makes sense because the study included only those who had released from service 2-12 years prior. Overall they were better off than the younger Veterans in this study population. Many released with senior ranks (36% of the senior officers and 53% of the senior NCMs were in this age group) and almost all had 20 or more years of service. Only 11% had medically released, compared to 34% of those age 40-59. They had the highest rate of easy adjustment to civilian life (77%). They had the highest rates of physical health conditions, but such the rates of mental health conditions were too low to estimate reliably. Although 54% had PAL, only 8% had both PAL and ADL-need, far lower than the rate for those aged 40-59 (32%). It is possible that this age group of recently released Veterans were generally relatively healthy throughout their long careers, leaving service with lower rates of activity limitations as a group.

Interpretation Guidance

- STCL was a point-in-time, cross-sectional survey, therefore no conclusion can be drawn from this study alone about (a) whether military service played a role in disability reported by respondents, and (b) the effect of VAC programs, services and benefits. Many services were established after most of these Veterans released.
- Use caution about generalizing findings to all Veterans because the survey included only former Regular Force personnel who released during 1998-2007 and were surveyed in 2010.
- Do not conclude that differences exist when statistical testing is not reported.
- This is a descriptive study, so be cautious about drawing conclusions about associations. Inferential statistical methodology (e.g. regression modeling) is being conducted to account for the confounding effects of multiple variables, for example physical health conditions accumulate with age, and age is related to years of service, number of deployments and rank.

Conclusions relatives aux limitations d'activités du *Sondage sur la transition à la vie civile*

Sommaire exécutif

L'un des principaux progrès qu'a permis de réaliser la Nouvelle Charte des anciens combattants (la Nouvelle Charte) de 2006 tient à l'instauration de services de réadaptation pour les vétérans des Forces armées canadiennes (FAC))[3] qui souffrent d'effets chroniques de maladies et de blessures liées au service qui limitent leur fonctionnement. L'objet des services de réadaptation physique et professionnelle prévus en vertu de la Nouvelle Charte est de rétablir le fonctionnement à l'étape de la transition à la vie civile, atténuant ainsi les répercussions de l'invalidité sur le plan de la vie au travail, à domicile et au sein de la collectivité. Aucune publication ne décrit l'étendue et la nature des limitations d'activités qui affligent les vétérans des FAC qui ne participent pas aux programmes d'Anciens Combattants Canada (ACC).

Le *Sondage sur la transition à la vie civile* (STVC) de 2010 avait pour but d'examiner la santé, les limitations d'activités et les déterminants de la santé d'ex-membres de la Force régulière (vétérans) des FAC ayant quitté le service entre 1998 et 2007, entre deux et douze ans après leur départ. Le STVC de 2010 représente la première étude exhaustive portant non seulement sur les vétérans participant à des programmes d'Anciens Combattants Canada (c.-à-d. des clients d'ACC), mais aussi sur la majorité plus importante que l'on retrouve au sein de la population canadienne en général. On trouvera les conclusions initiales du STVC dans d'autres rapports (voir Références).Les rapports antérieurs portaient plus particulièrement sur le revenu, la santé, l'adaptation générale à la vie civile ainsi que sur d'autres thèmes, mais non sur les limitations d'activités.

Le présent rapport constitue la première analyse descriptive exhaustive portant sur les conclusions relatives aux limitations d'activités du STVC. Le sondage a été mené auprès des vétérans en 2010, à l'époque où ACC, le ministère de la Défense nationale (MDN) et les FAC avaient entrepris de réaliser d'importants progrès au plan des services aux militaires ainsi qu'aux vétérans atteints d'invalidité. La plupart des participants au sondage avaient quitté le service militaire avant la mise en place des programmes prévus en vertu de la Nouvelle Charte en 2006 et avant les autres progrès significatifs qui furent apportés au plan des services à l'intention des militaires et des vétérans souffrant de problèmes de santé mentale par la suite.

Le Sondage

Le STVC constitue la première étude exhaustive, de portée nationale, qui soit statistiquement représentative d'ex-membres des Forces régulières des FAC vivant au sein de la population canadienne en général. Le sondage a permis de mesurer les limitations d'activités, la santé et les déterminants de la santé au rang desquels figurent les caractéristiques socioéconomiques (âge, sexe, revenu et éducation), les caractéristiques militaires (grade, déploiement, durée du service), le stress, la capacité d'adaptation et le niveau de satisfaction dans la vie, le soutien social ainsi que les soins de santé et la réadaptation.

But de l'étude, objectifs et questions de recherche

Le plan de la présente analyse a été déterminé en consultation avec le personnel d'ACC qui intervient

[3] Vétéran = Ancien membre des FAC, quelle que soit la durée de son service.

aux plans des politiques ainsi que de la prestation des services et de l'exécution des programmes, tant à l'Administration centrale que localement. Les consultations menées auprès du personnel d'ACC ainsi qu'avec le groupe des auteurs ont permis de formuler des questions spécifiques.

But : explorer les conclusions concernant les limitations d'activités du Sondage sur la transition à la vie civile afin d'en tirer des éléments de preuve qui permettront d'éclairer les services et les programmes offerts aux vétérans tant à court terme qu'à moyen terme, en plus de servir de référence aux travaux futurs qui permettront d'appuyer la planification à long terme.

Objectifs spécifiques

1. Élaborer un cadre d'analyse qui soit cohérent avec le cadre opérationnel de l'invalidité d'ACC ainsi qu'avec la Classification internationale du fonctionnement, du handicap et de la santé (CIF) de l'Organisation mondiale de la santé (OMS).
2. Décrire la prévalence des limitations d'activités par rapport aux caractéristiques socioéconomiques, à la santé, au stress et à la capacité d'adaptation ainsi qu'à d'autres déterminants de la santé, en incluant tant les clients et les nons-clients d'ACC que ceux qui participent au Programme de réadaptation.
3. Définir des sous-groupes de vétérans afin de cibler les ressources en vue d'atténuer les invalidités et d'approfondir les analyses statistiques afin de relever les facteurs de risque et de protection liés aux limitations d'activités.

Cadre d'analyse

La méthodologie du Sondage repose sur le cadre conceptuel du bien-être des vétérans, pour lequel l'invalidité représente l'un des concepts fondamentaux. Cette analyse s'est appuyée sur le cadre conceptuel de l'invalidité de la CIF de l'OMS afin d'assurer une certaine cohérence avec les sondages nationaux portant sur la santé et l'invalidité menés tant au Canada que dans d'autres nations, les paradigmes actuels en matière de recherche sur l'invalidité ainsi qu'avec l'approche retenue par ACC, à l'égard des questions concernant l'invalidité. Par « invalidité », on entend une difficulté à fonctionner au travail, à assumer son rôle au sein de la collectivité ou de la famille du fait d'une multiplicité de facteurs que doit gérer la personne concernée (état de santé, handicaps et facteurs personnels comme les caractéristiques sociodémographiques et la capacité d'adaptation) ainsi que des facteurs propres à ses milieux physique et social externes (obstacles et facilitateurs). La limitation d'activités représente un facteur clé dans le contexte de l'invalidité. Le sondage n'a pas fourni d'information sur des limitations à la participation propres à un rôle spécifique non plus que sur les facilitateurs et les obstacles propres au milieu.

Prévalence des limitations d'activités par rapport aux caractéristiques socioéconomiques, à la santé et aux déterminants de la santé

Il n'existe pas de vétéran « moyen »

Aucun vétéran de la Force régulière des FAC « moyen » n'a quitté le service entre 1998 et 2007. L'âge des vétérans variait de 20 à 67 ans et ceux-ci provenaient de tous les grades, en plus de présenter des profils variant considérablement au plan de la durée du service, des caractéristiques socioéconomiques, de la santé et de l'invalidité. Les services appuyant la transition à la vie civile des vétérans doivent tenir compte de cette variabilité.

Les limitations d'activités sont plus prévalentes chez les vétérans qu'elles ne le sont au sein de la population canadienne

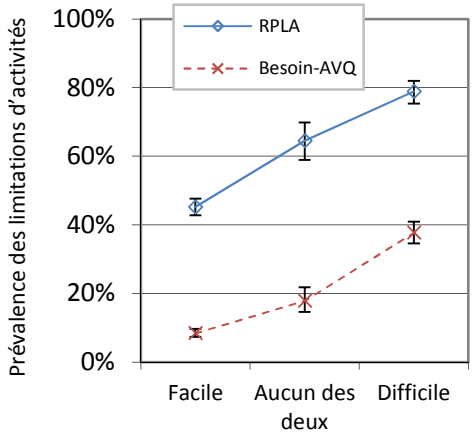
La majorité des clients d'ACC (93 %) et un tiers (38 %) des non-clients ont des restrictions à la participation ou des limitations d'activités (RPLA), comme on pourrait s'y attendre du fait que les vétérans se mettent principalement en rapport avec ACC pour obtenir de l'aide à l'égard de problèmes de santé chroniques et d'une invalidité connexe. Les RPLA sont deux fois plus prévalentes chez les vétérans (56 %) qu'elles ne le sont au sein de la population canadienne en général (28 %). Les besoins liés à une activité de la vie quotidienne (besoins-AVQ) sont trois fois plus prévalents chez les vétérans (17 %) qu'ils ne le sont au sein de la population en général (5 %). Le besoin le plus courant touche l'exécution des tâches ménagères quotidiennes (14 %). Il est suivi de la nécessité de se rendre aux rendez-vous et de faire des emplettes (8 %) et d'autres AVQ (3-5 %). Les problèmes de santé chroniques réduisent beaucoup plus couramment l'étendue ou les types d'activités chez les vétérans que ce n'est le cas au sein de la population canadienne en général dans chacun des quatre principaux domaines de la vie :

- À la maison : 43 % par rapport à 16 %
- À l'école, chez ceux qui fréquentent l'école : 22 % (la taille de l'échantillon du groupe comparatif est trop petite pour estimer de façon fiable).
- Au travail, chez ceux qui travaillent : 35 % par rapport à 13 %
- En marge d'autres activités, comme dans le cas des loisirs et du transport : 44 % par rapport à 16 %

Cette enquête transversale ne permet pas de déterminer la cause des taux de prévalence de limitations d'activités plus élevés chez les vétérans. Cependant, les troubles anxieux et les problèmes musculo-squelettiques douloureux sont beaucoup plus courants chez ces vétérans qu'ils ne le sont au sein de la population en général.

Facilité d'adaptation à la vie civile

On a déterminé la facilité d'adaptation à la vie civile en s'appuyant sur une seule question d'auto-évaluation. Si la plupart des personnes interrogées se sont adaptées facilement, tel ne fut pas le cas de 38 % d'entre elles. Les taux de prévalence des RPLA et des besoins-AVQ s'avèrent les plus élevés parmi ceux qui font état d'une adaptation difficile : près de 80 % d'entre eux ont des RPLA et près de 40 % d'entre eux ont un besoin-AVQ.



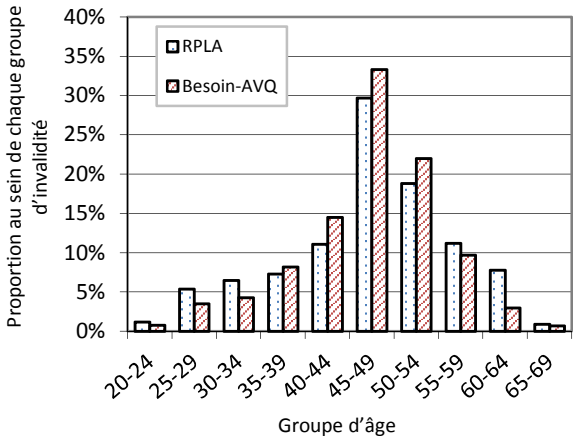
Âge et sexe

L'âge et le sexe sont deux facteurs importants dont il faut tenir compte pour mieux comprendre l'invalidité.

Les personnes ayant participé au STVC présentaient deux pointes d'âge, soit entre 25 et 29 ans et entre 45 et 49 ans[4]. Près d'un cinquième des participants ont quitté le service comme recrues ou cadets, après

[4] Dans ces histogrammes de fréquence des âges, les estimations pondérées de la population des groupes d'âge les plus jeunes et les plus âgés ne sont pas fiables, du fait de la petite taille des échantillons (moins de 30 personnes).

relativement peu de temps; la majorité de ceux qui faisaient partie des groupes plus âgés étaient des membres du rang (MR) de grades subalternes et supérieurs. Plusieurs des MR de grades subalternes ne comptaient pas 20 années de service. Si les affections physiques se multiplient avec l'âge, tel n'est pas le cas des affections mentales. La prévalence des affections mentales connaît un sommet parmi les groupes d'âge de 40 à 59 ans, soit les mêmes groupes d'âge qui présentent les taux de prévalence de limitations d'activités les plus élevés.



La majorité de ces vétérans étaient des hommes et 12 % étaient des femmes. Ce fait limite quelque peu ce que l'on a pu tirer du sondage quant aux différences entre les hommes et les femmes au plan de l'invalidité, du fait que l'échantillon de femmes est petit.

Si l'on n'a pas trouvé de différence majeure dans les taux de prévalence des RPLA entre les hommes et les femmes, on note cependant une prévalence légèrement plus marquée des besoins-AVQ chez les femmes.

Facteurs socioéconomiques

État civil. Les RPLA et les besoins-AVQ sont les plus prévalents chez les veufs/veuves, les personnes séparées et divorcées et les moins prévalents chez les célibataires et ceux qui ne se sont jamais mariés.

Éducation. La prévalence des RPLA ne présente pas de différence statistique significative selon le niveau d'éducation. La prévalence des besoins-AVQ est inférieure chez ceux qui ont effectué des études postsecondaires.

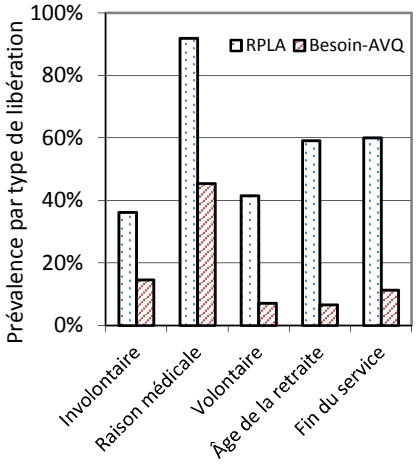
Revenu. Les taux de prévalence des RPLA et des besoins-AVQ augmentent avec la réduction du revenu du ménage.

Emploi. La cohorte qui a participé au STVC présentait le profil suivant : 74 % avaient un emploi, 6 % étaient au chômage, 17 % ne faisaient pas partie de la population active (c.-à-d. qu'ils ne travaillaient pas, qu'ils ne s'étaient pas absentés d'un emploi et qu'ils ne faisaient rien pour trouver un emploi) et 3 % étaient incapables de trouver un emploi de manière permanente. La moitié de ceux qui travaillent (52 %) ou qui ne travaillent pas (50 %) ont des RPLA. Le taux des RPLA est plus élevé parmi ceux qui ne font pas partie de la population active (70 %) et le plus élevé chez ceux qui ne sont définitivement plus en mesure de travailler (100 %). Plus de la moitié (51 %) de ceux qui ne font pas partie de la population active ont travaillé, fréquenté l'école ou suivi une formation au cours des 12 mois précédents. Les taux des besoins-AVQ suivent un modèle similaire, mais sont légèrement plus élevés chez les personnes au chômage (18 %) que chez les personnes qui travaillent (12 %). Plus de 80 % de ceux qui ne sont pas en mesure de travailler ont des RPLA et un besoin-AVQ. Il n'y a pas de mesure directe de la catégorie « emploi précaire ». On note d'importantes différences entre les quatre groupes sur le plan du bien-être mesuré par rapport à la santé, aux limitations d'activités et aux déterminants de la santé.

Caractéristiques militaires

Grade. Les RPLA et les besoins-AVQ sont plus prévalents parmi les grades supérieurs tant au sein du groupe des officiers que de celui des MR, ce qui témoigne peut-être de la plus forte prévalence des affections physiques avec l'âge. Les taux de prévalence des RPLA et des besoins-AVQ les plus élevés se retrouvent parmi les MR de grades subalternes, qui présentent également le taux de prévalence le plus élevé de co-occurrence d'affections mentales et physiques (34 %).

Années de service. Il existe une forte corrélation entre les années de service et l'âge, ce qui explique la corrélation des taux de RPLA et de besoins-AVQ avec les années de service. Cependant, les taux les plus élevés dans ces deux cas se retrouvent parmi les employés se situant à mi-carrière et comptant de 10 à 19 années de service, ce groupe présentant également les taux d'affections mentales et physiques comormides (42 %) les plus élevés, ce qui représente plus du double des taux de prévalence de comorbidité parmi les groupes ayant accumulé le plus et le moins d'années de service.



Type de libération. Les taux de prévalence les plus élevés des limitations d'activités se retrouvent, d'une manière tout à fait prévisible, parmi ceux qui ont été libérés pour des « raisons médicales », c'est-à-dire ceux qui souffrent de limitations d'emploi à caractère médical (handicap lié à une affection physique ou mentale) qui ne satisfont pas au principe de l'universalité du service (24 % de la population ayant participé à l'étude).

Service (environnement, élément). Il n'existe aucun lien statistiquement pertinent entre le service (Armée canadienne, Marine royale canadienne, Aviation royale canadienne) et les RPLA ou les besoins-AVQ.

Déploiement. Les taux de prévalence des RPLA et des besoins-AVQ parmi les personnes ayant été déployées à l'étranger pendant une période d'au moins 30 jours sont nettement plus élevés que chez ceux qui n'ont pas fait l'objet d'un déploiement. Cependant, l'état de santé lié à l'âge pourrait constituer un facteur important pour à tout le moins expliquer en partie cette différence : les personnes qui n'ont pas fait l'objet d'un déploiement sont en moyenne beaucoup plus jeunes et présentent des taux de prévalence moindres à l'égard tant des affections physiques (déployés = 76 % par rapport à non déployés = 47 %) que des affections mentales (28 % par rapport à 15 %).

Moment de l'enrôlement. Le moment de l'enrôlement est nettement associé aux RPLA et aux besoins-AVQ, ce qui est probablement imputable à l'âge. Les membres qui se sont enrôlés au cours des années 2000 sont beaucoup plus jeunes que ceux qui se sont enrôlés plus tôt et les affections physiques chroniques sont nettement moins prévalentes chez les adultes plus jeunes.

Année de la libération. On note une certaine variabilité dans les taux de prévalence des RPLA et des besoins-AVQ par rapport à l'année de la libération, bien qu'aucune tendance claire n'ait pu être relevée au fil du temps.

État de santé et affections

État de santé auto-déclaré. On note un lien entre l'état de santé et les limitations d'activités, comme on pourrait s'y attendre puisque dans ce contexte, à ces dernières sont forcément associés un trouble de santé et les handicaps correspondants. Tant dans le cas de la santé physique que de la santé mentale auto-déclarées, les taux de prévalence des RPLA et des besoins-AVQ sont les plus élevés chez ceux qui considèrent que leur état de santé est adéquat/mauvais.

Affections chroniques. On note un lien clair entre tant les RPLA, les besoins-AVQ et toutes les affections physiques (AP) chroniques et toutes les affections mentales (AM) chroniques. Bien que les taux de prévalence des limitations d'activités soient plus élevés pour les affections mentales que pour la plupart des affections physiques, tout particulièrement dans le cas des besoins-AVQ, la mesure dans laquelle les affections physiques ou mentales sont responsables du lien avec la limitation d'activités ne peut être établie clairement puisque la plupart de ceux qui souffrent d'une AM sont également affligés d'une AP concomitante (95 %), alors que moins du tiers de ceux qui souffrent d'une AP sont également affligés d'une AM (28 %).

Comorbidité. Par « comorbidité », on entend que la même personne est affligée à la fois d'au moins deux affections. Il est très important de garder en tête ces conclusions relatives à la comorbidité dans l'interprétation des données relatives aux limitations d'activités tirées de cette étude :

- 81 % souffrent d'une AP et 24 % souffrent d'une AM.
- 28 % des personnes souffrant d'une AP souffrent aussi d'une AM.
- 95 % des personnes souffrant d'une AM souffrent aussi d'une AP.

Les taux de prévalence des RPLA et des besoins-AVQ sont les plus élevés chez les vétérans présentant des signes de comorbidité plus élevés prenant l'une des formes suivantes :

- un nombre plus élevé d'affections physiques ou mentales;
- la présence simultanée d'affections physiques et mentales.

Les limitations d'activités se retrouvent principalement chez ceux qui présentent les niveaux de comorbidité les plus élevés :

- Chez ceux auxquels sont associées des RPLA, 65 % souffrent d'au moins trois AP (26 % souffrent d'au moins 3 AP/et d'au moins une AM).
- Chez ceux auxquels sont associés des besoins-AVQ, 76 % souffrent d'au moins trois AP (48 % souffrent d'au moins trois AP/et d'au moins une AM).

Les limitations d'activités se retrouvent principalement chez ceux qui présentent les niveaux de comorbidité les plus élevés :

- Dans l'ensemble, 41 % de ces vétérans souffrent d'au moins trois AP (25 % souffrent d'au moins trois AP et d'aucune AM, 16 % souffrent d'au moins trois AP et d'au moins une AM).
- Chez ceux auxquels sont associées des RPLA, 65 % souffrent d'au moins trois AP (26 % souffrent d'au moins 3 AP/et d'au moins une AM).
- Chez ceux auxquels sont associés des besoins-AVQ, 76 % souffrent d'au moins trois AP (48 % souffrent d'au moins trois AP/et d'au moins une AM).

Les cas de comorbidité d'AP, de douleur chronique et d'AM présentent des taux de limitation d'activités très élevés, soit 93 % dans le cas des RPLA et 50 % dans le cas de besoins-AVQ.

Qualité de vie. L'enquête sur la santé abrégée SF-12 de la société QualityMetric donne une indication de la qualité de vie liée à la santé en général ou à des problèmes associés à la santé, y compris au plan du fonctionnement. On note une corrélation entre de faibles résultats à l'enquête SF-12 (piètre qualité de vie) et un taux de prévalence plus élevé des RPLA et des besoins-AVQ.

Comportements en matière de santé

Consommation excessive d'alcool. Il n'existe aucune corrélation entre la consommation excessive d'alcool et les limitations d'activités. Les taux de prévalence des RPLA et des besoins-AVQ chez les personnes qui font une consommation excessive d'alcool ne sont pas considérablement différents des taux de prévalence moyens globaux du STVC pour les deux types de limitations d'activités.

Stress, capacité d'adaptation et satisfaction

Les indicateurs relatifs au stress, à la capacité d'adaptation et à la satisfaction du STVC 2010 incluent le soutien social, le sentiment d'appartenance à la collectivité, la maîtrise de la situation, le stress de la vie courante et le niveau de satisfaction à l'égard de la vie. Il existe une corrélation entre ces indicateurs et les deux mesures de limitations d'activités :

- *Faible soutien social.* Les taux de prévalence des RPLA et des besoins-AVQ sont plus élevés chez ceux dont le soutien social est faible. Il existe une corrélation entre le faible soutien social et la réduction des activités liées à la santé dans chacun des quatre principaux domaines de la vie (domicile, études, travail et loisirs/autre).
- *Sentiment d'appartenance à la collectivité.* Il existe une corrélation entre le taux de prévalence des RPLA et des besoins-AVQ et un faible sentiment d'appartenance à la collectivité.
- *Maîtrise de la situation.* Il existe une corrélation entre le taux de prévalence des RPLA et des besoins-AVQ et un faible niveau de maîtrise de la situation, c'est-à-dire la mesure dans laquelle on estime maîtriser la situation.
- *Stress de la vie.* Il existe une corrélation entre les RPLA et les besoins-AVQ et des niveaux plus élevés de stress de la vie courante.
- *Satisfaction à l'égard de la vie.* Il existe une corrélation entre les besoins-AVQ et un faible niveau de satisfaction à l'égard de la vie.

Soins de santé

Les vétérans ayant des RPLA et des besoins-AVQ ont généralement un médecin qu'ils consultent régulièrement, en plus de disposer d'une assurance de soins de santé couvrant les médicaments, les soins dentaires et les lunettes, bien que les différences soient peu prononcées; dans certains cas, elles ne sont pas même véritablement significatives au plan statistique.

Degré de limitation d'activités

Nous nous sommes appuyés sur deux méthodes pour estimer les degrés de limitation des activités :

3. Le fait que les vétérans n'ont pas de RPLA, n'ont que des RPLA ou ont à la fois des RPLA et des besoins-AVQ. Dans le cas des vétérans n'ayant pas de RPLA, 81 % sont au chômage, comme c'est le cas de 75 % de ceux qui n'ont que des RPLA et de 49 % de ceux qui ont à la fois des RPLA et des besoins-AVQ. La majorité des vétérans ayant des RPLA ont pu s'adapter facilement à la vie

civile (58 %), tandis que seulement un quart ont éprouvé de la difficulté sur ce plan (27 %), cependant que l'inverse est vrai dans le cas de ceux qui ont des RPLA et des besoins-AVQ (30 % et 57 %). Ces conclusions appuient l'approche et démontrent que l'on retrouve une multiplicité de situations à l'égard des invalidités chez ceux qui ont des RPLA.

4. Nombre d'AVQ à l'égard desquelles les vétérans ont besoin d'aide : les taux de prévalence de nombreuses caractéristiques relatives aux effets nocifs et aux déterminants de la santé augmentent avec le nombre d'AVQ pour lesquelles les vétérans ont besoin d'aide. Par exemple, la proportion de vétérans qui considèrent eux-mêmes que leur santé est mauvaise ou très mauvaise augmente de 10 % dans le cas de ceux qui ont besoin d'aide et qui n'ont pas d'AVQ à 70 % chez ceux qui ont besoin d'aide et qui ont au moins trois AVQ.

Causes auto-déclarées des restrictions à la participation ou des limitations d'activités

La majorité des participants estiment que leurs limitations d'activités sont imputables au service militaire. Invités à faire un choix parmi plusieurs causes pouvant expliquer leur handicap, la majorité d'entre eux ont choisi les conditions associées au travail militaire (75 %), ceci étant le cas tant chez les clients (86 %) que chez les non-clients (61 %). Un plus grand nombre de non-clients que de clients évoquent le vieillissement (10 %) ainsi que la maladie (7 %). Très peu de vétérans font état d'affections ou de troubles de santé mentale ou émotionnels (2 %) comme cause de leurs difficultés, cette situation étant peut-être imputable au fait qu'un certain nombre de personnes souffrant d'affections mentales évoquent plutôt les conditions du travail militaire. D'autre part, la majorité des exemples associés à la question font référence à la santé physique plutôt qu'à la santé mentale et n'y figure aucun handicap propre aux affections mentales au rang desquelles figurent la fatigue, la difficulté à se concentrer, la modification de l'humeur et les difficultés liées au comportement. L'admissibilité à la plupart des prestations, des programmes et des services d'ACC nécessite un lien avec le service, ce qui pourrait avoir une incidence sur les choix.

Participants au Programme de réadaptation d'ACC

Au moment de l'étude, 4 % (95 % IC = 3,8-4,4 %) des vétérans ayant participé au STVC avaient adhéré au Programme de réadaptation (taille de l'échantillon = 330 représentant environ 1 298 vétérans, 95 % IC = 1 089-1 409). On peut considérer que cet échantillon est représentatif au plan statistique des vétérans de la Force régulière des FAC ayant quitté le service entre 1998 et 2007 et ayant adhéré au Programme de réadaptation en date de mars 2009. Près de la moitié des clients du Programme de réadaptation (51 %) avaient quitté le service avant 2006 alors que le Programme de réadaptation fut établi en vertu de la *Loi sur les mesures de réinsertion et d'indemnisation des militaires et vétérans des Forces canadiennes*. Les vétérans ayant été libérés avant 2006 peuvent présenter une demande d'adhésion au Programme.

- Des vétérans de tous les âges ont participé au Programme de réadaptation.
- En moyenne, les clients ayant adhéré au Programme de réadaptation étaient âgés de 43 ans et étaient plus jeunes que les autres clients d'ACC (qui étaient âgés de 48 ans), leur âge étant similaire à celui des non-clients (42 ans). Il convient de noter que le groupe d'âge modal du Programme de réadaptation (40-49) correspond aux groupes d'âge qui présentent les taux de limitation d'activités les plus élevés.
- Des vétérans ayant participé au STVC et ayant adhéré au Programme de réadaptation, la vaste majorité (98 %) ont des RPLA tandis qu'une majorité (65 %) ont des besoins-AVQ. La proportion de ceux qui ont besoin d'aide au plan des AVQ est nettement plus élevée que ne

l'est la moyenne de la population ayant participé à l'étude, ce qui démontre que le degré de limitation d'activités et donc le niveau d'invalidité des vétérans ayant adhéré au Programme est plus élevé que chez ceux qui n'y ont pas adhéré.

- 7 % des vétérans ayant participé au STVC et qui ont des RPLA ont adhéré au Programme de réadaptation, comme c'est également le cas de 16 % de ceux qui ont des besoins-AVQ. Des vétérans ayant participé au STVC qui n'ont pas adhéré au Programme, 54 % ont des RPLA tandis que 15 % ont des besoins-AVQ, ce qui témoigne à la fois de la très large gamme des situations dans lesquelles se retrouvent ces vétérans au plan de l'invalidité (alors que certains n'ont pas besoin d'aide au plan des AVQ quand certains en ont besoin) et des possibilités de mobilisation (certains auraient pu être admissibles et auraient pu en profiter). Il y a lieu d'approfondir les recherches pour estimer les besoins d'aide en matière de gestion de l'invalidité chez ceux qui n'ont pas adhéré au Programme de réadaptation. Plusieurs de ceux qui ont des RPLA relativement peu prononcées auraient pu s'adapter à leur situation et ne souffraient pas d'une invalidité ayant une incidence marquée sur l'un ou l'autre des rôles qu'ils étaient appelés à assumer.
- On note d'importantes différences entre les clients ayant adhéré au Programme de réadaptation et les autres vétérans. Globalement, les indicateurs des clients ayant adhéré au Programme de réadaptation sont pires à l'égard de toutes les dimensions du bien-être, ce qui témoigne de la complexité des difficultés aux plans de la santé, de l'invalidité et de la vie sociale auxquelles ils sont confrontés. Cependant, comme c'est le cas des autres vétérans, les clients ayant adhéré au Programme de réadaptation ont dans une très large mesure accès à un médecin qu'ils consultent régulièrement et à une assurance de soins de santé.

Identification des sous-groupes afin de cibler les ressources en vue d'atténuer les invalidités

Depuis la première analyse des données recueillies en marge du STVC, il semble apparent qu'il n'existe pas de « vétéran moyen » et que les vétérans de la Force régulière des FAC présentent un caractère très hétérogène. Il s'avère donc délicat de mettre de l'avant les ressources nécessaires pour aider les vétérans en marge de leur transition à la vie civile. Nous nous sommes appuyés sur deux approches distinctes pour définir des sous-groupes de vétérans afin de préciser la situation :

3. Caractéristiques des sous-groupes présentant des taux d'invalidité inhabituels
4. Groupes de sous-groupes confrontés à des défis socioéconomiques et au plan de l'invalidité similaires

<u>Sous-groupes présentant des taux d'invalidité inhabituels</u>

Au rapport figure un tableau illustrant les taux de prévalence des RPLA et des besoins-AVQ pour toutes les catégories de tous les indicateurs mesurés dans le STVC, tant à la hausse (qui présentent éventuellement un caractère protecteur face aux invalidités) qu'à la baisse (facteurs de risque possibles). Le personnel d'ACC et toute autre personne intervenant au plan de l'élaboration des programmes et des politiques ou qui est appelée à collaborer avec des vétérans en vue d'atténuer les effets de l'invalidité peuvent examiner ces tableaux afin de relever les caractéristiques qui s'avéraient utiles pour cibler des ressources limitées ou relever ceux qui pourraient plus vraisemblablement être confrontés à des problèmes liés à l'invalidité. D'autres analyses statistiques s'appuyant sur des modèles de régression sont en voie d'être réalisées pour permettre de préciser la nature de ces relations.

Sous-groupes confrontés à des défis similaires

Les vétérans de la Force régulière des FAC ayant participé au STVC 2010 n'étaient pas tous des soldats ayant fait une longue carrière, des aviateurs/aviatrices ou des marins ayant repris la vie civile après de nombreuses années de service. Ils étaient plutôt âgés de 20 à 67 ans, leurs années de service étaient peu nombreuses, dans la moyenne, voire longues, ils provenaient de tous les grades et la plupart d'entre eux avaient intégré la population active civile (MacLean *et al.* 2011). Nous nous sommes appuyés sur des mécanismes d'inspection pour relever les groupes présentant des caractéristiques et des besoins similaires (approche dite de la « segmentation » dans le domaine des affaires). L'analyse a permis de relever quatre groupes d'âge et douze sous-groupes présentant des tendances reconnaissables aux plans de l'état de santé et des déterminants des besoins en matière de santé.

L'analyse a relevé deux types généraux de sous-groupes qui pourraient profiter d'une attention particulière, soit ceux présentant des besoins similaires, en très grand nombre (vétérans âgés de 30 à 59 ans ayant quitté le service à mi-chemin de leur carrière, MR et souffrant d'affections physiques et/ou mentales) et ceux qui avaient des besoins élevés en plus petit nombre, soit de très jeunes vétérans confrontés à des problèmes de santé et à des ressources limitées, ainsi que les membres du groupe d'âge le plus élevé souffrant d'invalidités graves. Cette information permettra de faciliter le ciblage des ressources en matière de soutien.

De 20 à 29 ans. Il s'agit du groupe d'âge dont l'état de santé est le meilleur, dont les membres souffrent le moins d'une invalidité et qui participent à la vie militaire ou civile depuis le moins de temps. Dans l'ensemble, la majorité de ces vétérans plus jeunes viennent de s'engager dans leur carrière professionnelle et ont entrepris de se marier et de former une famille; de manière générale, ils sont plus susceptibles d'avoir des besoins liés aux études, au soutien social et à l'emploi qu'à la santé et à l'invalidité. Cependant, ceux d'entre eux qui sont confrontés à des problèmes de santé peuvent être moins susceptibles d'avoir accès à des ressources sociales, financières et en matière d'éducation que leurs collègues plus âgés. Ce groupe présente les taux de limitations d'activités les moins élevés.

De 30 à 39 ans. Il s'agit du deuxième groupe d'âge le plus important (18 %). Les membres de ce groupe ont généralement quitté le service après avoir acquis un grade supérieur et avoir servi moins longtemps que les membres de groupes d'âge plus vieux, bien qu'ils soient plus susceptibles d'avoir établi une carrière militaire avant de quitter le service que ne l'ont fait les vétérans plus jeunes; ils sont également plus susceptibles d'être mariés. Cependant, 32 % ont quitté le service à titre de recrues, de sorte qu'il s'agit là d'un groupe mixte. Comme les membres faisant partie du groupe des 40 à 59 ans, 27 % éprouvent de la difficulté à s'adapter à la vie civile et ils présentent le deuxième taux de libération pour des raisons médicales (16 %) le plus élevé, après ceux qui font partie du groupe des 40 à 59 ans. Ils présentent également le deuxième taux de prévalence le plus élevé des RPLA (33 %) et des RPLA combinées à des besoins-AVQ (10 %), en plus de présenter des taux significatifs d'affections physiques et mentales.

De 40 à 59 ans. La plupart des vétérans des FAC ayant quitté le service en 1997-2008 font partie de ce groupe d'âge (58 %). Par opposition aux vétérans plus jeunes, 27 % de ceux qui souffrent de limitations d'activités font partie de ce groupe d'âge et plusieurs ont à la fois des RPLA et des besoins-AVQ, comme on pourrait s'y attendre du fait qu'ils sont plus âgés et que les problèmes de santé physique s'accumulent avec l'âge. Cependant, les membres de ce groupe d'âge sont globalement dans une situation moins enviable que celle des vétérans les plus âgés faisant partie de la cohorte de cette étude. La prévalence des affections mentales est la plus élevée au sein de ce groupe. Ce groupe est

principalement formé de MR de grades subalternes et supérieurs et la plupart comptent au moins 10 années de service. Les membres de ce groupe d'âge sont le plus fréquemment mariés. Ceux qui souffrent d'une limitation d'activité ont généralement moins souvent acquis un diplôme universitaire et travaillent. La prévalence de l'invalidité est beaucoup plus élevée chez ceux qui ont des RPLA et des besoins-AVQ.

De 60 à 69 ans. Seulement 8 % des personnes ayant participé à cette étude faisaient partie de ce groupe d'âge, ce qui s'explique du fait que celle-ci n'englobait que ceux qui avaient quitté le service de deux à douze années auparavant. Dans l'ensemble, ils se retrouvent dans une situation plus enviable que celle des vétérans les plus jeunes ayant participé à cette étude. Plusieurs d'entre eux ont quitté le service après avoir acquis un grade élevé (36 % des officiers de grade supérieur et 53 % des MR de grades supérieurs faisaient partie de ce groupe d'âge) et la quasi-totalité d'entre eux avaient accumulé au moins 20 années de service. Seulement 11 % ont été libérés pour raisons médicales, par rapport à 34 % de ceux qui faisaient partie du groupe des 40 à 59 ans. Ils présentent le taux d'adaptation à la vie civile le moins difficile le plus élevé (77 %). Ils présentent les taux d'affections physique les plus élevés, cependant que les taux d'affections mentales sont trop faibles pour qu'ils puissent être évalués de manière fiable. Bien que 54 % d'entre eux aient des RPLA, seulement 8 % ont à la fois des RPLA et des besoins-AVQ, ce qui est un taux nettement inférieur à celui des membres faisant partie de la catégorie des 40 à 59 ans (32 %). Il se pourrait que ce groupe d'âge de vétérans ayant récemment quitté le service ait été généralement en bonne santé tout au long de leur longue carrière, et qu'ils aient quitté le service en présentant, globalement, des taux de limitations d'activités moindres.

Pistes d'interprétation

- Le STVC était une enquête ponctuelle, transversale. Par conséquent, aucune conclusion ne peut être tirée concernant a) la possibilité que le service militaire soit ou ne soit pas un facteur déterminant de l'invalidité, et b) l'incidence des programmes, services et prestations d'ACC. De nombreux services ont été mis sur pied après que la plupart de ces vétérans ont été libérés.
- La prudence est de mise dans la généralisation des conclusions à tous les vétérans, car seuls ont pris part au Sondage de 2010 les anciens membres du personnel de la Force régulière qui ont été libérés au cours de la période allant de 1998-2007.
- On ne peut conclure qu'il existe des différences sans essais statistiques.
- Il s'agit ici d'une étude descriptive; il faut faire attention de ne pas tirer de conclusions fondées sur les associations. On a entrepris d'adopter une méthodologie statistique déductive (p. ex. modélisation par régression) pour tenir compte des effets combinés de variables multiples, dans la mesure où, à titre d'exemple, les affections physiques s'accumulent avec l'âge et que l'âge est lié aux années de service, au nombre de déploiements et au grade.

Disability Findings in the Survey on Transition to Civilian Life

Introduction

A key advancement of the 2006 New Veterans Charter is the provision of rehabilitation services for CAF (Canadian Armed Forces) Veterans[5] who have chronic effects of service-related illness and injury that limit functioning. The purpose of NVC rehabilitation and vocational services is to restore functioning in transition to civilian life and thereby mitigate disability in work, home and community life. There are no publications describing the extent and nature activity limitations in CAF Veterans who are not participating in VAC programs.

Until the 2010 *Survey on Transition to Civilian Life*, very little was known about health, disability and determinants of health of Veterans living in the general Canadian population.

Disability occurs when a person with a health condition and related functional impairment encounters barriers in their environment so that it is difficult for them to meet their needs and to participate in work, community and family roles (Altman 2001, WHO 2002, WHO 2003, IOM 2007, Gulley and Altman 2008, Fellinghauer *et al.* 2012, Gray *et al.* 2006, Leonardi *et al.* 2012). Veterans Affairs Canada (VAC), like Veterans' administrations in other nations, provides recognition, compensation, treatment and rehabilitation programs, services and benefits for service-connected disability. Virtually all (98%) of VAC's Canadian Forces (CAF) Veteran clients have been found eligible for disability benefit entitlement.

In the 1990s, research by VAC and others demonstrated clear need for enhanced transition support for post-Korean War Veterans after leaving military service, particularly those experiencing disability. The 2006 New Veterans Charter programs significantly enhanced services for CAF Veterans experiencing service-connected disability. These new programs were based on civilian disability research, anecdotal information about Veterans' disability experiences, and research on VAC clients. Only 11% of the 594,500 CAF Veterans living today who served after the Korean War are VAC clients (Pedlar and Thompson 2011). This prior research was done only in the VAC client population and less was known about disability in the majority of Veterans living in the Canadian general population (VanTil *et al.* 2011).

MacLean *et al.* (2011) identified factors associated with being found eligible for VAC disability benefits in a study of CAF Regular Force Veterans who released during 1998-2007, based on administrative data available at the time of release. They found associations with medical release (adjusted odds ratio AOR = 11.0), junior NCM (non-commissioned member) rank (AOR – 1.6), senior NCM (AOR = 1.7), male gender (AOR = 1.4), and length of service < 10 years (AOR = 0.2) and 10-19 years (AOR = 0.7). In those with deployments, the association with medical release was stronger (AOR = 21.2) and each deployment increased the odds of receiving disability benefits (AOR = 2.2 for each additional deployment). Variables used in the models were limited to those available in administrative data. The authors noted that other research studies had identified additional factors associated with receipt of disability benefits such as lower education, having physical health conditions such as musculoskeletal disorders, obesity and hypertension, and having mental health disorders.

The 2010 *Survey on Transition to Civilian Life* (STCL) was the first opportunity to comprehensively study disability in Canadian Veterans who were not receiving benefits from VAC. STCL was the first comprehensive, biopsychosocial study of both client and non-client Veterans in Canada that linked

[5] Veteran = Former CAF member regardless of length of service.

Department of National Defence (DND) databases with VAC and Statistics Canada databases to objectively identify former CAF Regular Force personnel (MacLean *et al.* 2010, Thompson *et al.* 2011). The survey was conducted at a time when many new service enhancements were being put in place by DND/CAF and VAC, and many had released from the CAF prior to establishing the 2006 New Veterans Charter programs.

In the preliminary STCL findings report, 56% of former CAF Regular Force personnel who released from service during 1998-2007 had participation and activity limitation (PAL) after transition to civilian life, twice the prevalence in the Canadian general population after adjusting for differences in age and sex (Thompson *et al.* 2011). Activity limitation is a key dimension of disability. A high proportion of VAC clients (92%) were experiencing activity limitation, which is not surprising given that the great majority sought assistance from VAC to deal with chronic health conditions and related impairments which contribute to disability.

In the Survey on Transition to Civilian Life, conducted while significant enhancements were being made to transition support programs:

- 56% of CAF Regular Force Veterans who released from service during 1998-2007 were experiencing participation and activity limitation (PAL), twice the prevalence of the general Canadian population (28%).
- 92% of VAC clients had PAL.

This report is the first comprehensive point-in-time picture of activity limitation in CAF Regular Force Veterans living in the general population. These findings provide evidence for (1) policy and program developers planning to meet the needs of modern-day Veterans in the immediate and middle horizon time frames; (2) public and private sector, health care and rehabilitation providers who work with individual Veterans; and (3) Veterans, their families and communities. This first report summarizes the findings of the descriptive analyses. Based on these findings, further analysis is under way using regression modeling for a deeper understanding of factors associated with activity limitation in CAF Veterans after transition to civilian life.

Methods

This is a descriptive analysis of data from the 2010 Survey on Transition to Civilian Life (STCL).

Goal and Objectives

The goal, objectives and research questions were developed by consensus discussions among the authors after consultation with knowledge user groups in VAC. Specific research questions were identified in our consultations with VAC staff and within the author group.

Goal: Explore the activity limitation findings from the Survey on Transition to Civilian Life to provide evidence that will inform Veteran services and programs in the immediate and middle horizon time frames, and to provide a baseline for to plan services for the longer time frame.

Specific Objectives

1. Develop an analysis framework consistent with VAC's operational disability framework and the WHO (World Health Organization) ICF (International Classification of Functioning and Health).
2. Describe the prevalence of activity limitations in relation to socioeconomics, health, stress and coping, determinants of health; including VAC clients and non-clients and those in the Rehabilitation

program.
3. Identify subgroups of Veterans to focus resources for mitigating disability and further statistical analysis to identify risk and protective factors for activity limitation.

Survey and Data Linkage

STCL was a combined computer-assisted telephone survey and database linkage conducted for VAC and DND by Statistics Canada in February-March 2010. STCL methodology and initial analysis are described elsewhere (MacLean *et al.* 2010, Thompson *et al.* 2011, Thompson *et al.* 2013). The survey had a planned sample of 4,721 of 32,015 former CAF Regular Force personnel who released from service during January 1998 to December 2007. The sample was derived by Statistics Canada in November 2009 using DND's human resources database. Contact information was obtained by Statistics Canada through linkage with the T1 Family Tax File and VAC, DND and Public Works and Government Services Canada administrative data. A stratified design was used to oversample VAC clients. The sample excluded those who had re-enrolled in the CAF and those who were living in institutions, the northern Territories or outside Canada owing to small numbers and difficulties contacting Veterans in those locations.

The sample size of 4,721 was chosen in consultation with Statistics Canada to ensure sufficient power for representativeness based on the expectation that not all would respond. Of the 4,721 former CAF Regular Force personnel sampled, 3,355 responded (response rate 71%, 84% for VAC clients and 59% for non-clients). Of these, 3,154 (94%) agreed to share their data with VAC and DND. This is an excellent response rate for this type of survey, yielding very narrow confidence intervals for indicators of health, activity limitation and determinants of health. The planned sample size of 4,721 was considered over-sampling so the response rate of 71% does not reflect the higher degree to which the STCL data represented the study population. In addition, Statistics Canada supplied individual respondent weightings that accounted not only for the stratified design but also for differences between respondents and non-respondents, which compensated for the lower response rate for non-clients, a refinement not always done in population health surveys. See Figure 1 in the attached report for details of the sampling frame.

Experienced Statistics Canada interviewers using computer-assisted telephone interviews administered the 30-35 minute questionnaire. The questionnaire included self-reported indicators based on a conceptual framework considering health, disability and determinants of health, using questions largely consistent with national Canadian population health surveys. The survey data were supplemented with objective data from data linkage to DND and VAC administrative databases, conducted by Statistics Canada.

Variables

Socioeconomic and Military Characteristics; Indicators of Health and Determinants of Health

STCL included a wide variety of variables for socioeconomic and military characteristics, and health, disability and determinants of health indicators, described in MacLean *et al.* (2010) and Thompson *et al.* (2011). Indicators such as age, sex, most military characteristics and VAC client status were objectively determined by data linkage. Other data were self-reported in the telephone survey.

Activity Limitation

STCL included the same "restriction of activities" and "activities of daily living" questions that had been used in the Canadian Community Health Survey (CCHS) since 2000, and were used as screening questions in the census prior to the 2006 PALS survey. In the STCL 2010 codebook, all the questions were labeled with the acronym "RAC"; however in other surveys that acronym was reserved for restriction of activities questions not the ADL questions. There were 12 questions in the module covering two different disability concepts: participation and activity limitation (PAL) and need for help performing activities of daily living (ADL-need) (Table 1).

Historical Background

Questions about impairment and activity limitations have been asked in national Canadian population-based surveys since the mid-1980s (Park and Wilkins 1996) and are continually evolving. Statistics Canada's first focused national disability survey was the 1986 *Health and Activity Limitation Survey* (MacKenzie *et al.* 2009). In 1997, Statistics Canada developed the *Participation and Activity Limitation Survey* using a draft conceptual framework that later evolved into the WHO ICF. The Restriction of Activities Module (RAC) used in STCL (RAC_Q01-05 in Table 1) evolved from those earlier surveys. "*The* [ICF] *definition of disability as occurring only when someone feels they are prevented from participating in desired or necessary activities lends itself very well to survey applications … the survey does not need to judge whether a health condition is or is not disabling"* (MacKenzie *et al.* 2009). The STCL questions RAC_Q07-12 on ADLs were not part of the RAC module. The RAC module was used to screen for persons experiencing activity and participation limitations, who were then contacted for the PAL Surveys. The RAC module was common content in the Canadian Community Health Survey from the first CCHS cycle in 2000-01 until 2009-10, and became optional content in 2011. Owing to limitations in the RAC questions, new disability variables are being developed.

Measurement Limitations

We refer to the STCL "disability" indicators as "participation and activity limitation" in this report. While marking an important step forward in the evolution of thinking about disability by distinguishing between having a health condition with related impairments and experiencing disability, the module does not measure specific *role* limitations and barriers to role limitations. The module was meant for screening and collects no data on barriers that define disability, either (1) difficulty adapting to and coping with impairment related to a health condition, or (2) external social and physical environmental barriers that restrict role participation. The module does not directly measure difficulties performing specific roles; distinguish between impairment, activity limitations and role participation; or directly measure severity of impairments and activity/participation limitations. Although the indicators have several limitations in providing a complete picture of disability, they nevertheless permit important insights.

Table 1. Disability indicators used in STCL 2010.

Variables		Comments
RAC_R01 (Preamble)	The next few questions deal with any current limitations in your daily activities caused by a long-term health condition or problem. In these questions, a 'long-term condition' refers to a condition that is expected to last or has already lasted six months or more.	
RAC_Q01	Do you have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities?	All respondents. 3-point Likert scale.
Does a long-term physical condition or mental condition or health problem, reduce the amount or the kind of activity you can do... (3-point Likert scale for each)		
RAC_Q02	... at home?	All respondents.
RAC_Q03	... at school?	Those who answered "yes" to EDU_Q02 Are you currently attending a school, college or university?
RAC_Q04	... at work?	Those who answered "yes" to LF2_Q01 Last week, did you work at a job or a business?
RAC_Q05	... in other activities, for example, transportation or leisure?	All respondents.
RAC_Q06	You reported that you have difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities. Which one of the following is the best description of the cause of this condition? 01 Accident at home 02 Motor vehicle accident 03 Accident at work 04 Other type of accident 05 Existed from birth or genetic 06 Military work conditions 07 Civilian work conditions 08 Disease or illness 09 Ageing 10 Emotional or mental health problem or condition 11 Use of alcohol or drugs12 Other - Specify	Those who answered "sometimes" or "often" to RAC_Q01 through RAC_Q05.
RAC_DIMP (RALD)	Impact of health problems (sometimes, often, never). Derived variable based on RAC_Q02, RAC_Q03, RAC_Q04, RAC_Q05.	All respondents. This variable is a measure of the impact of long-term physical conditions, mental conditions and health problems on the principal domains of life: home, work, school, and other activities.
RAC_DFRQ (PAL)	Participation and activity limitation (sometimes, often, never). Derived variable based on RAC_Q01, RAC_Q02, RAC_Q03, RAC_Q04, RAC_Q05.	All respondents. This variable classifies respondents according to the frequency with which they experience activity limitations imposed on them by a condition(s) or by long-term physical and/or mental health problems that has lasted or is expected to last 6 months or more.

Variables		Comments
Because of any physical condition or mental condition or health problem, do you need the help of another person: (Yes/No)		
RAC_Q07	... with preparing meals?	All respondents.
RAC_Q08	... with getting to appointments and running errands such as shopping for groceries?	All respondents.
RAC_Q09	... with doing everyday housework?	All respondents.
RAC_Q10	... with personal care such as washing, dressing, eating or taking medication?	All respondents.
RAC_Q11	... with moving about inside the house?	All respondents.
RAC_Q12	... with looking after your personal finances such as making bank transactions or paying bills?	All respondents.
RAC_DHLP (ADL-need)	Needs help with at least one task of activities of daily living (yes, no). Derived variable based on RAC_Q07, RAC_Q08, RAC_Q09, RAC_Q10, RAC_Q11, RAC_Q12..	All respondents. This variable classifies respondents according to their need for help (because of health reasons) with activities of daily living.

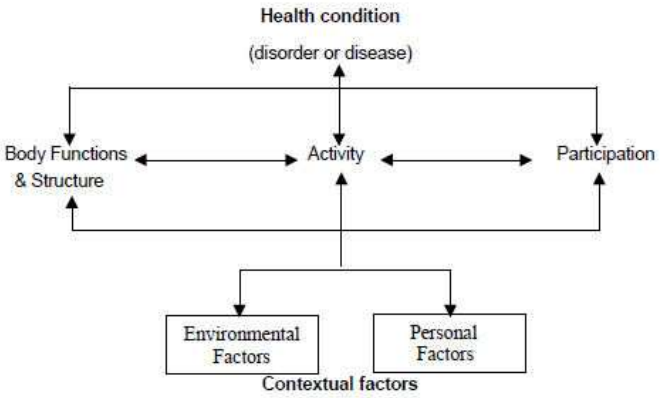
Statistical Methods

Weighted population estimates were calculated using individual sampling weights provided by Statistics Canada to account for sampling stratification by client status and to account for non-response bias (MacLean *et al.* 2010, Thompson *et al.* 2011). Ninety-five percent confidence intervals for population estimates were calculated using Stata. In calculating means and 95% confidence intervals for SF-12 summary components, respondent sampling weightings provided by Statistics Canada were applied to individuals' scores.

Conceptual Framework

To frame this analysis and interpret the findings in a meaningful way, the multidisciplinary research team agreed by consensus to a disability conceptual framework that would be consistent with both the modern disability paradigm and VAC's operational framework for providing benefits for Veterans experiencing disability related to service-related health problems (Thompson *et al.* 2013).

Figure 1. ICF disability model (WHO 2002).



World Health Organization Framework

Modern frameworks view disability as the person's inability to participate in work, family and community roles as result of interaction between factors within the person (health conditions, related impairments and personal factors) and barriers and facilitators in their social and

physical environments (Altman 2001, IOM 2007, Gulley and Altman 2008, Fellinghauer *et al.* 2012, Gray *et al.* 2006, Leonardi *et al.* 2012).

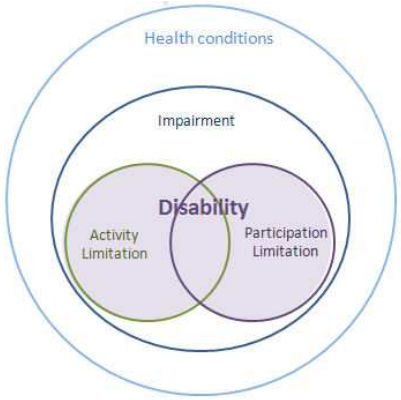
There are two applicable disability conceptual frameworks. (1) The World Health Organization's (WHO) International Classification of Functioning, Disability and Health (ICF) (WHO 2002, WHO 2003; Figure 1), adopted by national health surveys in Canada and around the world. (2) The framework used by the U.S. Institute of Medicine to analyze the U.S. VA approach to Veterans' disability compensation, which the Committee concluded was better suited for analyzing the more linear business procedures used by U.S. Veterans Administration to assess claims for disability benefits, but is consistent with the ICF framework (IOM 2007).

The terminology used in this report is based on the ICF model (WHO 2002, WHO 2003):

- Health condition: an illness, disease, disorder, injury congenital anomaly or genetic characteristic; usually a diagnosis.

- Functioning: an umbrella term for *body functions and structures*, *activities*, and *participation*, operationalized with these terms:
  - Impairment: deviation or loss in *body function or structure*, such as loss of hearing, loss of use of a limb or emotional instability. Impairments are not proxies for disability, and the misnomer "with a disability" for "with a health condition or impairment" is common. Impairments are minimized by diagnosing and treating the underlying health condition. Residual impairment is managed by providing assistive devices.
  - Activity limitation: difficulty an individual may have in executing *activities,* such as dressing, typing on a keyboard, manipulating a tool, concentrating or establishing a social relationship. Activity limitation is managed by enhancing the person's skills.
  - Participation restriction: a problem that an individual may experience in involvement in *life situations* owing to encountering social and physical environmental barriers, or difficulty with adaptive coping. Examples: difficulty participating in employment as a result of the physical environment (e.g., stairs instead of ramps) and/or the social environment (e.g., discriminating policies). Participation restriction is managed by identifying and reducing barriers.

Figure 2. Population experiencing disability within those who have impairments related to health conditions.



- Contextual factors: Factors about and around the person that can contribute to disability.
  - Personal factors include race, gender, age, educational level, adaptive coping styles, income, etc.
  - Environmental factors including facilitators and barriers in the person's social and physical environments.

Consistent with Figure 2, the measures in this report include *participation and activity limitation* (PAL; RAC_DFRQ), *impact of health problems on life domains* (RALD; RAC_DIMP) and *needing help with activities of daily living* (ADL-need; RAC_DHLP). ADL-need is a form of limitation in participation and

activity. For simplicity, all can be considered measures of "activity limitation", although conceptually there is some overlap with participation limitation. In this report, we will refer to all three as "activity limitation".

VAC's Operational Framework

Both the *Pension Act* and the *Canadian Forces Members and Veterans Re-establishment and Compensation Act (CAFMVRCA)* define disability as "*the loss or lessening of the power to will and to do any normal mental or physical act*" unchanged since the original *Pension Act* in 1919. Two main program areas provide supports for disability: (1) the Rehabilitation program, which supports re-establishment in civilian life for Veterans with service-connected *health problems*; and (2) disability benefit entitlement to determine eligibility for disability awards and pensions, which provides financial compensation and access to treatment benefits for Veterans with service-connected *medical diagnoses*. The nature and entitlement criteria for these program areas are defined in legislation and regulations. The Act:

- Authorizes VAC to "*provide rehabilitation services to a veteran who has a physical or a mental health problem resulting primarily from service in the Canadian Forces that is creating a barrier to re-establishment in civilian life*."
- Specifies that "*The only physical and mental health problems that may be addressed in the rehabilitation plan are (a) in the case of a veteran who was released on medical grounds, the physical or mental health problem for which the veteran was released; or (b) in any other case, a physical or a mental health problem resulting primarily from service in the Canadian Forces that is creating a barrier to re-establishment in civilian life*."
- "'*rehabilitation services' means all services related to the medical rehabilitation, psycho-social rehabilitation and vocational rehabilitation of a person*."
    - *"'…medical rehabilitation' includes any physical or psychological treatment whose object is to stabilize and restore the basic physical and psychological functions of a person*."
    - *"'psycho-social rehabilitation' includes any psychological or social intervention whose object is to restore a person to a state of independent functioning and to facilitate their social adjustment."*
    - *"'vocational rehabilitation' includes any process designed to identify and achieve an appropriate occupational goal for a person with a physical or a mental health problem, given their state of health and the extent of their education, skills and experience".*

In determining Veterans' eligibility for disability pensions and awards and related disability benefits[6] there are two steps: (1) determining whether the health condition (medical diagnosis) was incurred during, or aggravated by, or attributable to, or directly connected with service and whether it is permanent, and then (2) determining the degree of impact of that condition on ability to function (role disability). Eligibility criteria are provided in the old *Pension Act* and the new *Canadian Forces Members and Veterans Re-establishment and Compensation Act (CAFMVRCA)*:

1. *Pension Act*: *21(1) "suffers disability resulting from an injury or disease or an aggravation thereof that was attributable to or was incurred during(Pension Act)"* or 12(2) *"suffers disability resulting from an injury or disease or an aggravation thereof that arose out of or was directly connected with such military service(Pension Act)"*

[6] Disability benefits includes cash pensions or awards and access to various supports such as diagnostic and treatment benefits for the entitled condition, Veterans Independence Program, and Long Term Care Program.

2. *CAFMVRCA: "service-related injury or disease" means an injury or a disease that (a) was attributable to or was incurred during special duty service; or (b) arose out of or was directly connected with service in the Canadian Forces ... 45(1) The Minister may, on application, pay a disability award to a member or a veteran who establishes that they are suffering from a disability resulting from (a) a service-related injury or disease; or (b) a non-service-related injury or disease that was aggravated by service.*"

Degree of disability related to an entitled medical diagnosis is assessed using the Table of Disabilities[7].

Cross-map of Study Framework, VAC Operational Framework, and STCL Disability Indicators

Table 2 cross-maps the ICF-based conceptual framework we adopted for this analysis to VAC's current operational framework and disability data available in the 2010 STCL and the data available from STCL 2010. This cross-mapping demonstrates how the STCL data can be used to provide evidence supporting VAC disability operations and makes clear the strengths and limitations of the STCL data in measuring disability.

[7] https://www.veterans.gc.ca/eng/services/disability-benefits/benefits-determined/table-of-disabilities

Table 2. Cross-map of the ICF-based disability conceptual framework adopted for this analysis, VAC's operational framework, and data available in the 2010 STCL.

ICF-Based Study Framework		VAC's Operational Framework		Data available in 2010 STCL		Comments
Disability (Requires All)	Health condition	Disability (Requires All)	Medical diagnosis – Required for disability compensation eligibility. Health problem – Required for eligibility to VAC rehabilitation program. Health care service payments.	Self-reported *physical and mental health conditions* that have lasted or were expected to last 6 months or more and were diagnosed by a health professional.		STCL asked about some not all types of chronic health conditions. Diagnosed conditions do not get at undiagnosed health problems. No way to specifically link disability measures to individuals' health conditions.
	Impairment: deviation or loss in body function or structure related to a health condition		Medical impairment for assessing degree of disability in determining disability compensation. Rehabilitation services.	RAC_Q01: Do you have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities? Also includes activity limitation.		Emphasis on physical rather than psychosocial impairments. STCL asked about health conditions that "double-count" RAC_Q01, e.g. hearing problems, chronic pain/discomfort, musculoskeletal conditions.
	Activity limitation: difficulty carrying out activities. Participation restriction: difficulty carrying out life roles.		Quality of Life rating for assessing degree of disability in determining disability compensation. Participation and activity limitation assessments and vocational assessments for rehabilitation and other supportive programs, services and benefits. Health care and rehabilitation services.	RAC_Q01. Also RALD (RAC_Q02-05, RAC_DIMP): Does a long-term physical condition or mental condition or health problem, reduce the amount or the kind of activity you can do at home, school, work, or other activities? ADL-need (RAC_Q07-12, RAC_DHLP): needing help with ADLs.	PAL (RAC_DFRQ): Participation and activity limitation, derived from RAC_01 to 05. ADL-need; RAC_HLP, needing help with at least one ADL: derived from RAC_Q07-12.	Blurred line between activity limitation and participation limitation. STCL did not collect data clarifying role participation problems, e.g. specific role limitations (worker, spouse, parent, etc.). In this report, we use the term "activity limitation" when referring to PAL, RALD and ADL need. STCL did not include direct measures of role participation limitation that could be related directly to respondents' health conditions.
	Personal and environmental contextual factors.		VAC rehabilitation services, Income supports, case management.	Socioeconomic, military and determinants of health characteristics.		No data on adaptive coping. No data on social and environmental facilitators and barriers.

Prevalence of Activity Limitation in Relation to Socioeconomics, Health and Determinants of Health

Overview

Table 3 summarizes main findings for all the disability indicators.

Limitation in Body Function and Structure (Impairment, RAC_Q01)

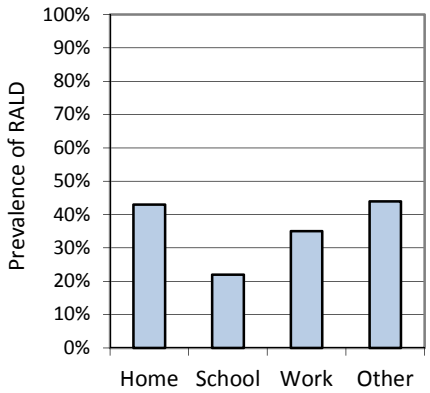
Almost half often or sometimes (48%) had difficulty with functions such as hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities (RAC_Q01, Table 3). People with functional impairments are more likely to experience role disability.

Almost half often or sometimes (48%) had impairments in functions such as hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities.

Health-Related Reduction of Activity in Life Domains (RALD)

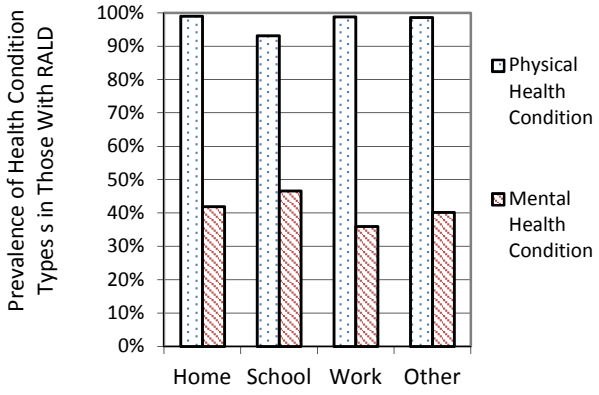
STCL 2010 asked whether a long-term physical or mental condition or health problem reduced the amount or kind of activity the person could do in four different life domains (reduction of activity in life domains = RALD; RAC_DIMP; RAC_Q02-05).

- At home, 43% had RALD.
- At school in those at school, 22% had RALD.
- At work in those at work, 35% had RALD.
- In other activities such as leisure and transportation, 44% had RALD.



The degree to which the Veterans were impacted in these settings is not clear. As noted in the employment section, many with PAL were employed and had good household incomes.

- Unadjusted rates of both physical and mental health conditions were correlated with activity reduction.
- In all four settings, nearly all who had RALD had PHCs, and PHCs were much more prevalent than MHCs.
- Nevertheless, a third to nearly half with health-related activity limitations had MHCs in these settings, greater than the overall STCL study population prevalence of MHCs (24%).
- These statistics do not take into comorbidity of PHCs and MHCs; e.g., of those who sometimes/often had health-related activity limitations in the home, 99% had a PHC (+/- a MHC) and 42% had a MHC (+/- a PHC).



Participation and Activity Limitation (PAL)

PAL (RAC_DFRQ) was common in the Veterans. More than half (56.1%, 54.3-57.9%) sometimes or often had PAL, double the Canadian population assessed in CCHS 2008 (27.7%, 27.2-28.3%) after adjusting for differences in age and sex between the two surveys. The majority of VAC clients (92%) and third (38%) of non-clients had PAL (Table 3).

More than half (56%) had participation and activity limitation 2-12 years after leaving service, double the prevalence in the Canadian general population in 2008 (28%) after adjusting for differences in age and sex.

PAL versus RALD

The PAL variable (RAC-DFRQ) is a composite of both limitations in body function and structure (impairments) measured by RAC_Q01 and of impact of health problems in life domains measured by the RALD variable (RAC_DIMP). Table 3 shows there was considerable overlap between RAC_Q01 and RAC_DIMP (85.6%). However, 14.4% (1 in 7) of the study population had one and not the other: 6.7% had RAC_Q01 but not RAC_DIMP and 7.7% had RAC_DIMP but not RAC_Q01.

Table 2. RAC_Q01 x RAC_DIMP (RALD) cross table.

		RALD: RAC_DIMP Sometimes/Often		
		Yes	**No**	**Total**
RAC_Q01 Sometimes/ Often	**Yes**	41.7%	6.7%	48.4%
	No	7.7%	43.9%	51.6%
	Total	49.5%	50.5%	100.0%

The overlap between RAC_Q01 (which is counted in PAL; RAC-DFRQ) and RALD (RAC_DIMP) is important. RAC_Q01 captures respondents who report both impairments like difficulty hearing and the chronic physical health condition "hearing problem", and respondents who report both difficulty walking, climbing stairs or bending and chronic physical health conditions like arthritis, back problems or chronic pain. So PAL "double counts" those with several chronic physical health conditions. For this reason we used RALD and not PAL in our subsequent regression modeling when we looked for associations between disability and the chronic health conditions, and when we combined RALD with ADL-need to create a composite disability outcome variable to measure severity of activity limitation.

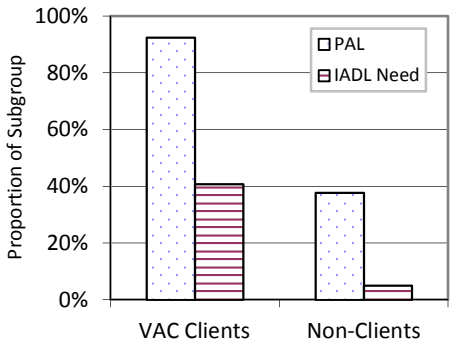
Activities of Daily Living (ADL-need)

Just under a fifth (17.1%, 16.0-18.2%) were so affected by physical or mental health problems that they needed help from another person with at least one activity of daily living (ADL-need; Table 3). The most common need was doing everyday housework (14%), followed by getting to appointments and running errands (8%), and then other ADLs (3-5%).

Nearly a fifth (17%) needed the help of another person with activities of daily living (ADLs), triple the Canadian general population (5%)

VAC Clients Compared to Non-Clients

- Most of those seeking assistance from VAC (VAC clients) had PAL (93%), and nearly half (41%) had ADL-need (Table 3).
- 38% of non-clients had PAL and 5% had ADL-need.
- It is not surprising that activity limitation was more prevalent in VAC clients, because Veterans seek assistance from VAC when they have chronic health conditions: 98% of VAC CAF clients who served since the Korean War have received a disability award or disability pension, and a prerequisite for eligibility is a medical diagnosis that can be connected to service.



- Within 2-12 years of leaving service, the majority of those with PAL (55%) and ADL-need (81%) were obtaining assistance from VAC.
    - It is not surprising that many with PAL were not seeking assistance from VAC given that many with PAL likely had only mild limitations and were experiencing less activity limitation than those with ADL-need.
    - On the other hand, some with PAL who could use help and might be eligible for benefits might not yet have approached VAC.

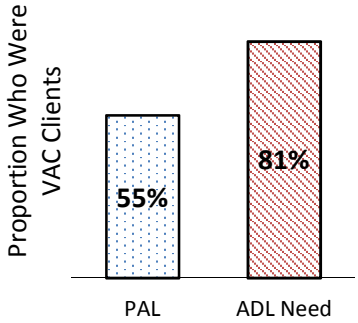


Table 3. Activity limitation in CAF Regular Force Veterans who released during 1998-2007.

Indicator	Sample Size (Number of Respondents) and Weighted Population Estimate (% of subgroup, 95% CI)					
	VAC Clients		Non-Clients		Whole Study Population	
Total Study Population	1795	34%	1359	66%	3154	100%
RAC_Q01: Difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities						
Often	954	52% (50-54%)	125	9% (7-10%)	1079	23% (22-25%)
Sometimes	567	32% (30-34%)	314	22% (20-24%)	881	25% (24-27%)
Never	271	16% (14-18%)	918	70% (67-72%)	1189	51% (50-53%)
Total	1792	100%	1357	100%	3149	100%
RAC_Q02, 03, 04, 05: A long-term physical condition or mental condition or health problem reduced amount or the kind of activity (sometimes or often)...						
... at home	1483	81%[a] (79-83%)	331	23% (21- 26%)	1814	43% (41-44%)
... at school	59	58% (48-68%)	12	12% (7-20%)	71	22% (17-28%)
... at work	725	72% (69-75%)	219	21% (19-24%)	944	35% (33-37%)
... in other activities	1467	81% (79-83%)	353	25% (23-28%)	1820	44% (42-46%)
RALD: RAC_DIMP: Impact of health problems on home, work, school and other activities (RAC_Q02, 03, 04, 05)						
Often	989	54% (51-56%)	121	8% (7-10%)	1110	24% (22-25%)
Sometimes	585	34% (31-36%)	303	22% (20-24%)	888	26% (24-27%)
Never	209	13% (11-14%)	929	70% (67-72%)	1138	51% (49-52%)
Total	1783	100%	1353	100%	3136	100%
PAL: RAC_DFRQ: Participation and activity limitation						
Often	1173	64% (62-67%)	169	12% (10-14%)	1342	29% (28-31%)
Sometimes	485	28% (26-30%)	365	26% (24-28%)	850	27% (25-28%)
Never	125	8% (6-9%)	818	62% (60-65%)	943	44% (42-46%)
Total	1783	100%	1352	100%	3135	100%
ADL-need: RAC_DHLP Needs help with at least one activity of daily living (ADL)						
Yes	767	41% (39-43%)	68	5% (4-6%)	835	17% (16-18%)
No	1021	59% (57-61%)	1286	95% (94-96%)	2307	83% (82-84%)
Total	1788	100%	1354	100%	3142	100%
Because of any physical or mental condition or health problem, needed the help of another person with…						
…preparing meals	221	11% (10-13%)	17	X	238	5% (4-5%)
…getting to appointments and running errands	388	20% (18-22%)	31	2% (2-3%)	419	8% (8-9%)
…doing everyday housework	672	36% (34-38%)	42	3% (2-4%)	714	14% (13-15%)
…personal care such as washing, dressing, eating or taking medication	173	9% (8-10%)	13	X	186	4% (3-4%)
…moving about inside house	123	7% (6-8%)	13	X	136	3% (2-3%)
…looking after personal finances	190	10% (9-11%)	24	X	214	5% (4-5%)

[a] e.g. 81% of VAC Clients.

X = sample size < 30 so estimate not considered reliable.

CI = confidence interval.

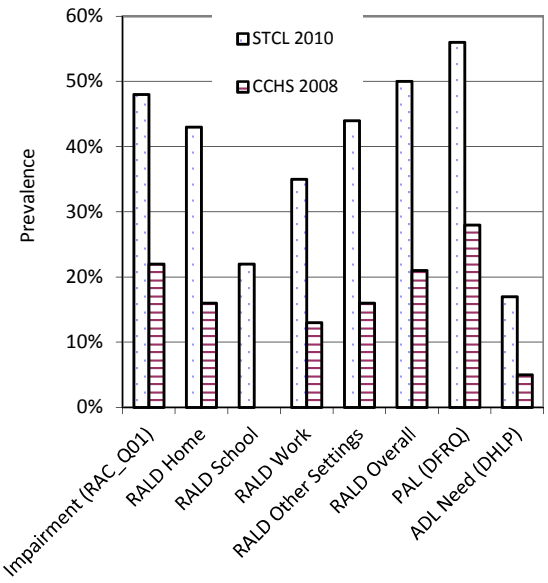
Note: Sample sizes may not add to 3154 owing to missing data within indicators.

Comparison with the Canadian General Population

Table 4 compares 2010 STCL Veterans to findings for the Canadian general population from the 2007-08 Canadian Community Health Survey (CCHS). The CCHS 2008 data were age- and sex-adjusted to the STCL population for these comparisons. Confidence intervals were estimated for the CCHS 2007-08 prevalence rates using the method described in the CCHS 2007-08 Public Use Microdata File User Guide.

- RAC_Q01: Impairment and activity limitations were more prevalent in Veterans (48%) than the general Canadian population (22%).
- RALD (RAC_Q02-05): Chronic health problems reduced the amount or kind of activity much more commonly in Veterans than in the general Canadian population in all four major life domains, overall 50% vs. 21%. In specific domains:
    - 43% vs. 16% at home,
    - 22% in those in school (sample size too small in CCHS 2007-08 for a comparator),
    - 35% vs. 13% at work in those at work,
    - 44% vs. 16% in other activities.
- PAL (RAC_DRFQ) was twice as prevalent in Veterans (56%) as in the general Canadian population (28%).
- ADL (RAC_DHLP) need was about three times more prevalent in Veterans (17%) than the general population (5%) (Table 4). Prevalence rates were higher in Veterans for all individual ADLs for which there were comparators.

Comparison of STCL Veterans (STCL 2010) to the Canadian general population (CCHS 2008).



Possible Explanations for the Greater Prevalence of Activity Limitation in Veterans

Root causes for the greater prevalence of activity limitation in the STCL Veterans remain to be clarified. STCL was a cross-sectional survey and so does not provide proof of causation. Furthermore, findings in this study population cannot be extended to the much larger population of CAF Veterans who served after the Korean War in both the Regular Force and Reserve Force. We can, however, suggest some hypotheses.

First, two of the most common physical health conditions in STCL Veterans are known to be associated with disability in general and were more prevalent in the CAF Regular Force Veterans who released in that decade (1998-2007) than the general Canadian population: arthritis (23% in STCL Veterans vs. 11% in the Canadian population) and back problems (40% vs. 21%) (Thompson *et al.* 2011). Mental health conditions also are associated with disability and can occur as a result of military service, but a direct MHC comparator with the general Canadian population was available only for anxiety disorders (10% vs. 5%). The prevalence rates of diagnosed depression or anxiety (20%), mood disorders (3%), PTSD (11%) and MHCs overall (24%) could not be compared directly to the general population.

Second, several determinants of health indicators known to be associated with disability were prevalent in the STCL Veterans. Education might have been a factor because the rate of post secondary education was lower compared to the general population (55% vs. 67%), but other factors for which comparators

are available had lower or similar rates: low income (below LIM, 7% in both), perceived life stress (21% vs. 25%) and sense of community belonging (59% vs. 62%). Low social support might have played a role (STCL prevalence 33%) but no comparator was available. Further analysis is under way using regression modeling to test these hypotheses.

Table 4. Comparison to the Canadian general population (CCHS 2007-08, age and sex standardized to STCL 2010).

Indicator	CAF Veterans (STCL 2010)		Canadian General Population (CCHS 2007-08)	
	Sample Size	Weighted Population Estimate (95% CI)	Sample Size	Weighted Population Estimate (95% CI)
Total Study Population	3154	100%	131061	100%
RAC_Q01: Difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities				
Often	1079	23% (22-25%)	17695	9% (6-12%)***
Sometimes	881	25% (24-27%)	21784	13% (9-17%)
Never	1189	51% (50-53%)	91353	78% (71-85%)
Total	3149	100%	130832	100%
RAC_Q02, 03, 04, 05: A long-term physical condition or mental condition or health problem reduced amount or the kind of activity (sometimes or often)...				
... at home	1814	43%* (41-44%)	29011	16% (11-21%)
... at school in those at school	71	22% (17-28%)	2265	--****
... at work in those working	944	35%** (33-37%)	11487	13% (7-19%)***
... in other activities	1820	44% (42-46%)	26399	16% (11-21%)
RALD: RAC_DIMP: Impact of health problems on home, work, school and other activities (RAC_Q02, 03, 04, 05)				
Often	1110	24% (22-25%)	15678	9% (6-12%)***
Sometimes	888	26% (24-27%)	20760	13% (9-17%)
Never	1138	51% (49-52%)	94242	78% (71-85%)
Total	3136	100%	130680	100%
PAL: RAC_DFRQ: Participation and activity limitation (RAC_Q01, 02, 03, 04, 05)				
Often	1342	29% (28-31%)	22153	12% (8-16%)
Sometimes	850	27% (25-28%)	24758	16% (11-21%)
Never	943	44% (42-46%)	83386	72% (65-79%)
Total	3135	100%	130297	100%
ADL-need: RAC_DHLP Needs help with at least one activity of daily living (ADL)				
Yes	835	17% (16-18%)	14349	5% (3-7%)***
No	2307	83% (82-84%)	116419	95% (90-100%)
Total	3142	100%	130768	100%
Because of any physical or mental condition or health problem, needed the help of another person with…				
…preparing meals	238	5% (4-5%)	4272	--****
…getting to appointments and running errands	419	8% (8-9%)	9176	3% (1-5%)***
…doing everyday housework	714	14% (13-15%)	9742	4% (2-6%)***
…personal care such as washing, dressing, eating or taking medication	186	4% (3-4%)	3073	--****
…moving about inside house	136	3% (2-3%)	1901	--****
…looking after personal finances	214	5% (4-5%)	4487	--****

*e.g. 43% of the Veterans had reduction in activity at home.

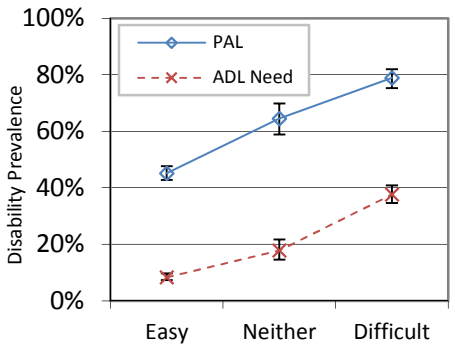
**e.g. 35% of the Veterans who were working had reduction in activity at work.

***Estimate considered marginal quality, coefficient of variation = 11.6-33.3%.
****Estimate does not meet Statistics Canada's quality standards, coefficient of variation > 33.3%.
CI = confidence interval.
Note: Sample sizes may not add to 3154 owing to missing data within indicators.

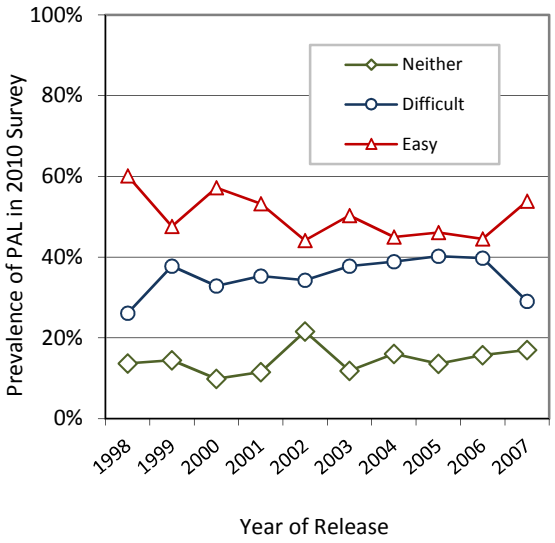
Ease of Adjustment to Civilian Life

STCL 2010 included a five-point Likert question on ease of adjustment to civilian life: "*In general, how has the adjustment to civilian life been since you were released from the Canadian Forces?*" The options for response were *very or moderately difficult (difficult), neither difficult nor easy, and moderately or very easy (easy)*. Most (62%) had an easy adjustment, but 38% did not.

- Activity limitation prevalence was highest in those who reported difficult adjustment (PAL 79% and ADL-need 38%).
- However, 45% of those who reported an easy adjustment had PAL, and 8% had ADL-need.



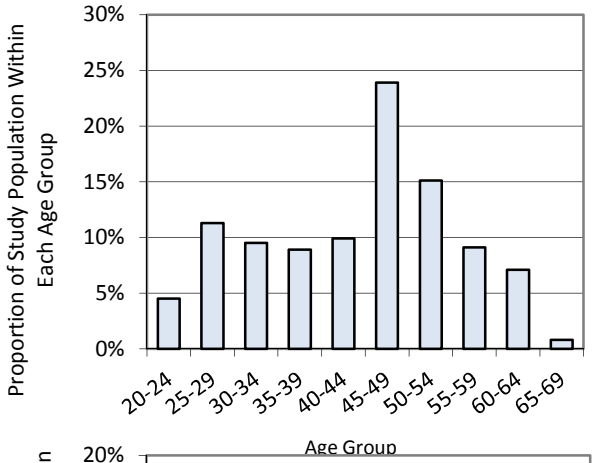
- Time frames for the measures did not coincide: both PAL and need for assistance with ADLs were determined at the time of the 2010 survey, whereas the adjustment to civilian life question was open to respondents' interpretations. Respondents could have been thinking about any time period after release from service to the survey when they considered the adjustment difficulty question.
- No strong pattern was evident when we looked at PAL prevalence for by year of release (think of it as years since release) for various degrees of difficulty with adjustment, although this has not been tested statistically.



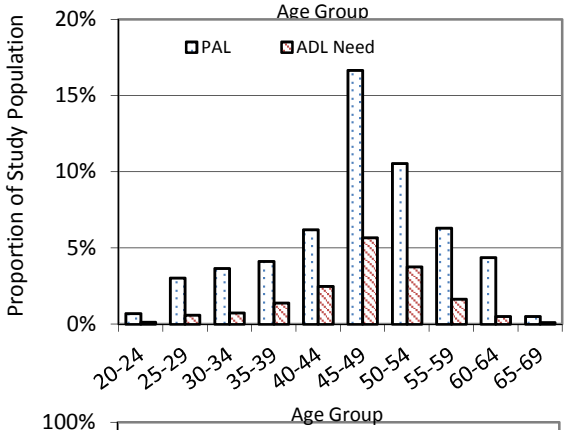
Sociodemographics and Socioeconomics

Age

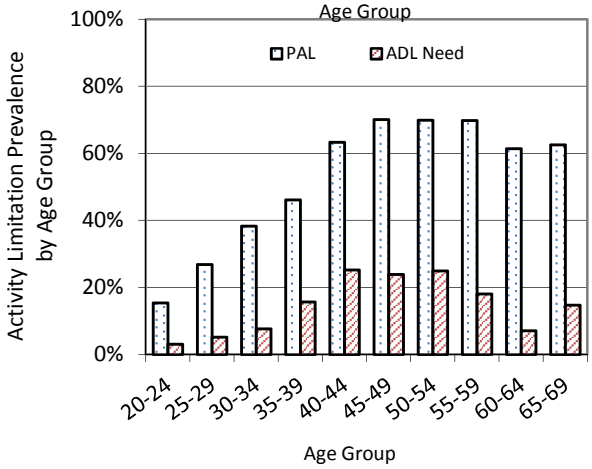
- The age distribution of the STCL study population had two peaks: 25-29 years and 45-49 years.[8]
- Nearly a fifth released as recruits and cadets with short lengths of service, and the majority of those in the middle age groups were junior and senior non-commissioned members (NCMs). Many of the junior NCMs released with less than 20 years of service.

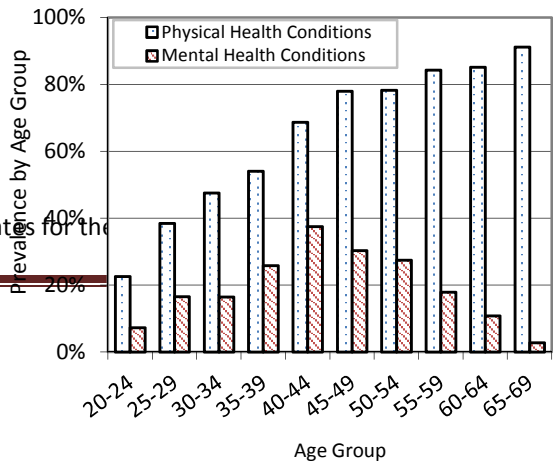


- Most of those with either type of activity limitation were in the 40-59 year age group.
- Both types of activity limitation were present in all age groups.
- Those with both PAL and ADL-need had similar age distributions, except ADL-need was slightly more common in older age groups and PAL was slightly more common in younger ages.



- PAL was more prevalent in all age groups than ADL-need, as would be expected.
- Activity limitation prevalence increased with age but was highest in the 40-59 age group and *lower* in the oldest groups. This is not inconsistent with findings in other STCL 2010 analyses, which found higher rates of problems with health, health-related quality of life, determinants of health and difficulty with adjustment to civilian life in the 40-59 age groups (Thompson *et al.* 2011, Thompson *et al.* 2013, MacLean *et al.* 2013). This age group predominantly had non-commissioned ranks and those who released with 10-19 years of service.
- This is not consistent with the general population, where PAL increases with age (Statistics Canada 2007). For a possible explanation, see the section "Subgroups with similar challenges".



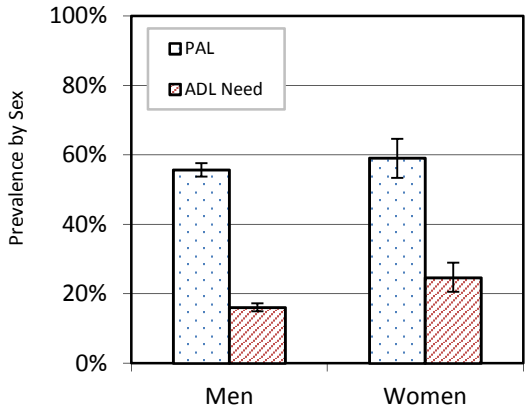


[8] In these age frequency histograms, the weighted population estimates for the are not reliable owing to small sample sizes (< 30).

- In the study population, physical health conditions accumulated with age, but mental health conditions did not (graph does not include obesity or chronic pain/discomfort).
- The prevalence of mental health conditions peaked in the 40-55 age groups, the same age groups with the highest prevalence rates of activity limitation.

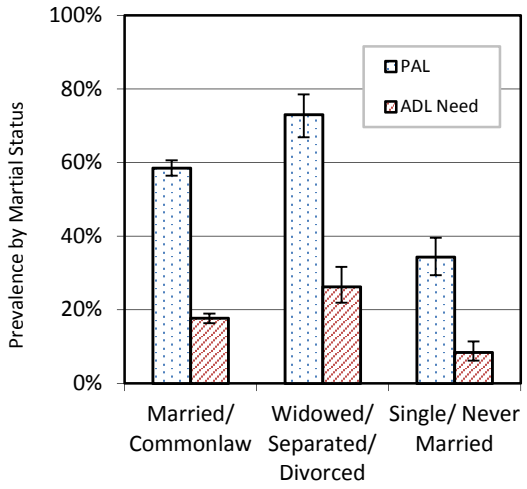
Gender

- There was no significant difference in PAL prevalence between men and women.
- There was slightly higher prevalence of ADL-need in women.



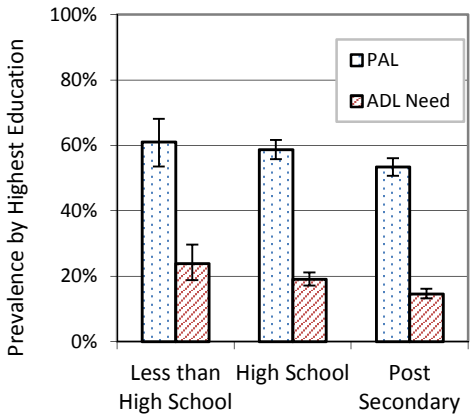
Marital Status

- Activity limitation was most prevalent in those who were widowed/separated/divorced and least prevalent in those single/never married.
- The single/never married group was younger on average than the other two groups, which likely is a factor in explaining this unadjusted association because chronic health problems were less prevalent in younger Veterans who also were more often single or never married.
- The difference between the married/commonlaw and widowed/separated/divorced groups was slight.
- Age and gender are important confounding factors to consider in looking at these unadjusted rates.



Education

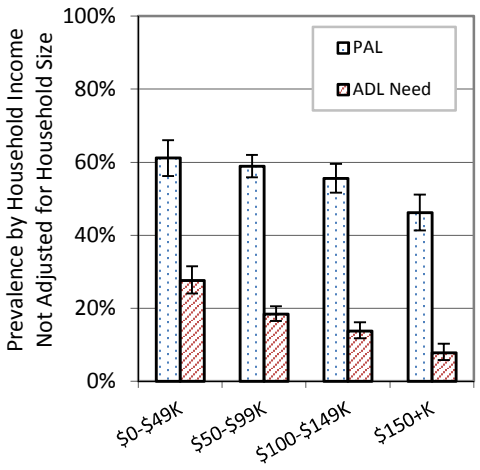
- PAL prevalence was not statistically different across levels of education.
- The prevalence of ADL-need was lower in those with some post-secondary education.



Income

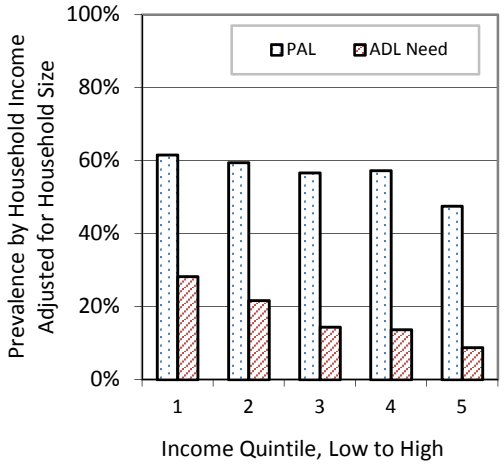
Household Income

- Prevalence of both PAL and ADL-need increased with lower household income, consistent with published research in civilian populations (PAL $Chi^2 = 62.4$, $p<0.001$).
- The trend was much more pronounced for ADL-need ($Chi^2 = 117.9$, $p<0.001$) than for PAL, in keeping with the notions that that the range of severity in PAL is broader, and ADL-need reflects more severe activity limitation.
- This income measure does not account for the number of people in the household.



Income Adequacy: Household Income after Accounting for Number of People in the Household

- This is a new income indicator we derived by dividing total household income by the LIM dollar value for the number of people in the household, grouped by quintiles. It measures income adequacy (Tjepkema et al 2013).
- PAL and ADL-need prevalence rates increased with decreasing income adquacy rank , and the gradient was more pronounced for ADL-need than PAL.
- It is unclear whether higher income adequacy is protective against disability, or a result of not experiencing disability, or both.



- This table shows the mean total household income for each quintile.
- The ranges overlapped owing to the rule used to sort Veterans into quintiles: Those in quintile 1 had adjusted incomes in the lowest 20% where adjusted income = total household income divided by the LIM dollar value for the number of people in the household.

Quintile	Mean Total Household Income
1	$39,522
2	$63,106
3	$85,072
4	$108,633
5	$179,330
Total	$96,641

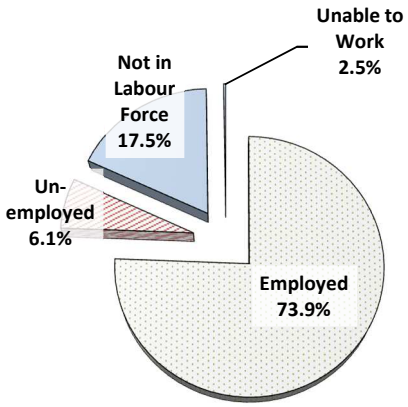
- The correlation between higher income and lower activity limitation prevalence seemed to hold across most sub-components of the PAL and ADL need measures:

	Prevalence* (%) of Activity limitation Indicator by Household Income Category (Not adjusted for number of people in the household)			
Activity Limitation Indicator	**$0 to $49,999**	**$50,000 to $99,999**	**$100,000 to $149,999**	**$150,000+**
1. Difficulty hearing, seeing, communicating, walking, etc. (sometimes/often) RAC_Q01	55%	52%	47%	37%
2.RALD: Impact of health on activity in a setting (sometimes/often (RAC_DIMP)...	57%	52%	48%	41%
…at home	51%	46%	40%	30%
…at school	X	X	X	X
…at work	38%	39%	37%	25%
…in other activities	48%	46%	43%	38%
3. PAL: Participation and activity limitation (sometimes/often; RAC_DFRQ)	61%	59%	55%	46%
4. ADL-need: Needs the help of another person with at least one ADL (RAC_DHLP)…	28%	18%	14%	8%
…preparing meals	8%	5%	3%	X
…getting to appointments and running errands	16%	9%	5%	X
…doing everyday housework	22%	15%	13%	6%
…personal care such as washing, dressing, eating or taking medication	6%	5%	X	X
…moving about inside house	4%	3%	X	X
…looking after personal finances	8%	6%	X	X

*Example: In those who had had household income of $0 to $50,000, 55% had difficulty hearing, seeing etc.
X = Estimate considered unreliable owing to sample size < 30.

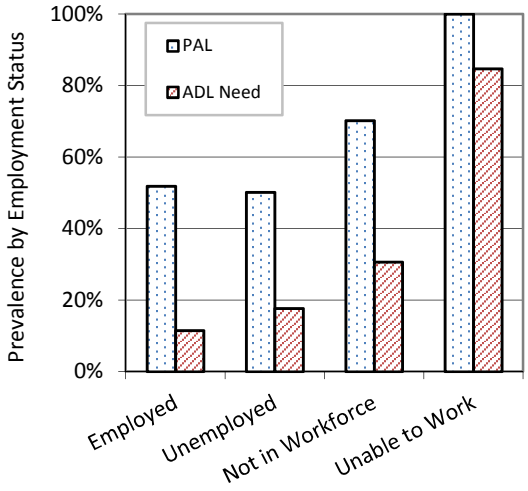
Employment

We analyzed four mutually exclusive workforce indicators:



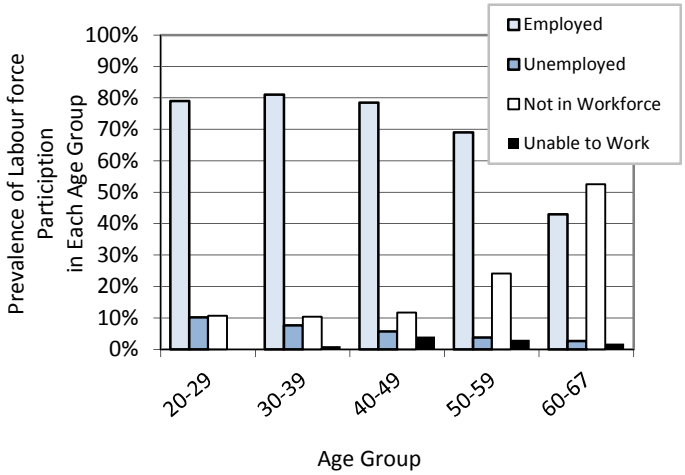
1. Employed (74%): Worked at a job or business or absent from one in the past week (LFSDWS 1 or 2).
2. Unemployed (6%): Did not have a job past week or seeking work in past four weeks (LFSDWS 3 or LF2_Q04 1).
3. Not in the workforce (18%): Not working, not absent from a job and did not do anything to find work in (LF2_Q04 2).
4. Unable to work (3%): Permanently unable to work (LFSDWS).

Those in the workforce were those "employed" and "unemployed", however some in the "not in workforce" might have been able to enter the workforce, as discussed on the next page.



- Half of those who were employed (52%) or unemployed (50%) had PAL. The PAL rate was higher for those not in the workforce (70%) and highest for those who were unable to work (100%).
- ADL-need rates followed a similar pattern but were slightly higher in the unemployed (18%) than employed (12%).
- More than 80% of those who were unable to work had PAL and ADL-need.

- The proportions of those in the workforce (employed and unemployed) decreased with age, while the proportion not in the labour force increased.
- The proportion permanently unable to work was small, but was highest in the 40-49 age group, which also had the highest prevalence of activity limitation.
- Age is important, since the prevalence of PHCs increased with age while MHCs peaked in the 40-44 age group.



There were significant differences between the four groups in terms of health, activity limitations and determinants of health:

Employed (74% of the population). This group had the best overall well-being. Most were middle-aged 40-59 (58%); half (50%) had 20+ years of service; most voluntarily released (63%); and they had the highest proportion of university graduates (22%). They had a moderate rate of having a physical health condition (79%), the lowest rate of having a mental health condition (19%); low rates of comorbidity; above average quality of life especially related to mental health (PCS 61%, MCS 76%); lowest rate of suicidal ideation (4%); highest rate of good social support (70%), strong sense of community belonging (61%), satisfaction with life (90%); by far the highest rate of having worked at a job or business in the 12 months prior to the survey (93%) and the highest rate of having household incomes of $100,000 or more (51%). The survey had no direct measure of "precariously employed", which is important since 52% had PAL.

Unemployed (6%). This group was similar to the employed group in many ways but had some differences, including somewhat lower average well-being. This group had the highest rate of young Veterans (27%) and those with less than 2 years service (28%). In terms of main activity during the 12 months prior to the survey, far fewer worked at a job or business (58%) and they had the highest rate of looking for work (18%). Nearly 1 in 10 were attending school or in training (9%). They had a higher rate of medical release (27%); higher rates of the lowest ranks (junior NCMs, privates and recruits); the highest rate of being single/never married (25%); moderate rate of dissatisfaction with life (13%); higher rate of difficult adjustment (38%), slightly higher rates of below average quality of life; similar rate of physical health conditions (75%) but higher rate of mental health conditions (30%); slightly higher rates of low social support (40%) and life stress (25%); high rate of household incomes below $50,000 (41%) and highest rate of household income below LIM (20%); and higher rate of being dissatisfied with finances (38%). Disability issues might have played an important role in unemployment, since 50% had PAL.

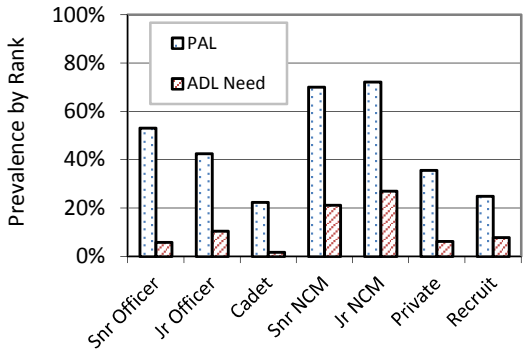
Not in the Labour Force (18%). This group had mixed well-being, comprised of some who were older and retired (43%) and generally seemed to be adapted to their health conditions and activity limitations, and others who were younger and appeared to be experiencing challenges. A number in the past year had worked (14%), looked for work (2%), attended school or training (10%), cared for a family member (6%), or were on disability (19%) raising the possibility that as many as 51% of them could have entered the labour force if their activity limitations and barriers were addressed. More than two thirds (70%) had PAL. Compared to the unemployed, the group overall had a higher rate of fair/poor perceived health (31%); and similar rates of fair/poor perceived mental health (23%), life stress (21%), life satisfaction (77%) and mental health conditions (33%); low health-related quality of life; physical health conditions (90%); comorbidity; and suicidal ideation (9%). Their rate of lower income (LIM) was higher than the employed but lower than the unemployed.

Unable to Work (3%). This group had the lowest well-being. They were generally older than the employed and had the highest rates of activity limitation (PAL 100% and ADL-need 84%) as well as the highest rates of physical health conditions (100%), mental health conditions (82%), below average health-related quality of life (PCS 97% and MCS 85%), stress and coping indicators, low income, suicidal ideation (24%) and having a regular physician (94%).

Military Characteristics

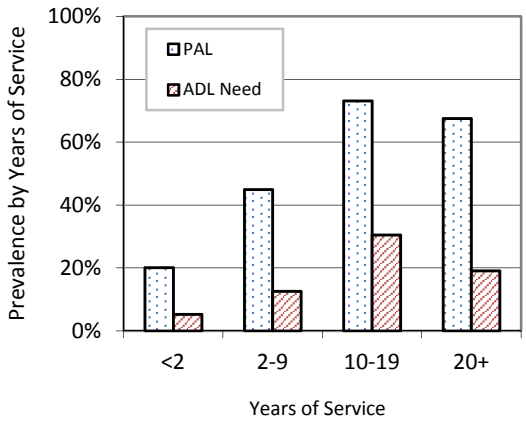
Rank at Release

- PAL and ADL-need were more prevalent in higher ranks within both officer and non-commissioned ranks, possibly reflecting the greater prevalence of PHCs with age.
- The highest PAL and ADL-need prevalence rates were in junior NCMs, who also had the highest prevalence for the comorbidity of physical and mental health conditions (34%).



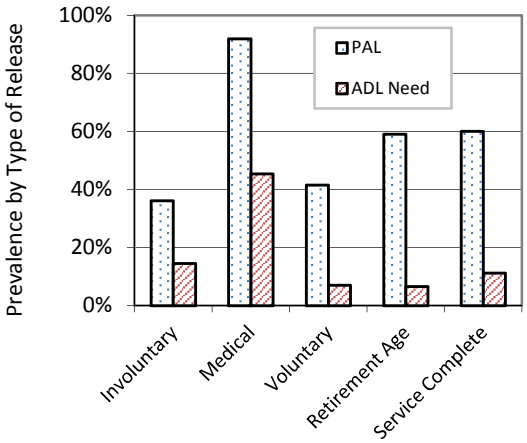
Years of Service

- Years of service is highly correlated with age, which explains the increase in prevalence rates of PAL and ADL-need by years of service.
- However the highest rates were in mid-career at 10-19 years of service. Those with these years of service also had the highest prevalence of comorbid physical and mental health conditions (42%), more than double the comorbidity prevalence rates in the other years of release categories.



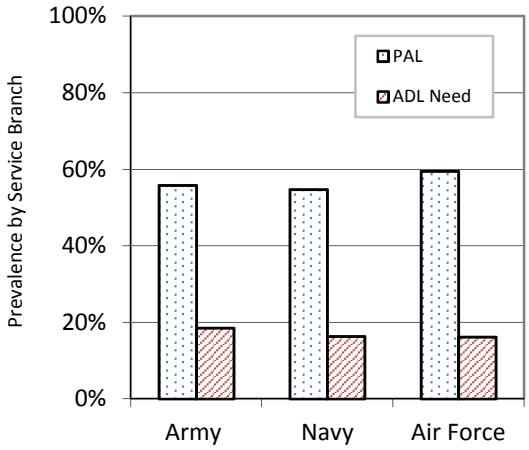
Type of Release

- Not surprisingly, the highest prevalence rates for activity limitation were in those who had been released from service owing to "medical release", meaning those who had medically-based employment limitations (impairments related to physical or mental health conditions) that did not meet universality of service (24% of the study population).



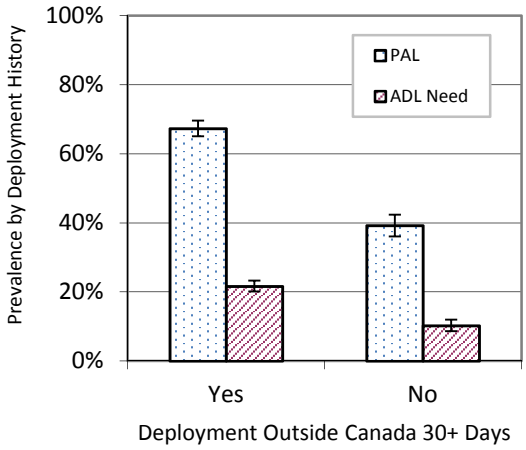
Service Branch (Environment)

- There was no statistically significant association between service branch and either PAL (Chi^2 3.7, df 1, p=0.16) or ADL-need (Chi^2 4.4, df 2, p=0.11).

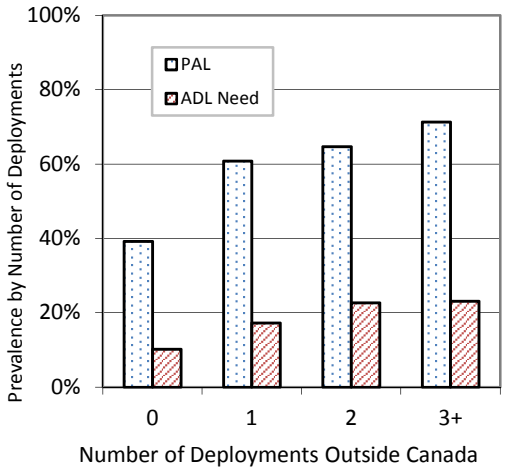


Deployment

- The overall prevalence rates of both PAL and ADL-need among those who had deployed outside Canada for 30+ days were significantly higher than in those who had not deployed.
- However, age-related health status might be an important factor in at least partially explaining this difference: Those who did not deploy were much younger on average and had lower prevalence rates of both PHCs (deployed = 89% vs. non-deployed = 67%) and MHCs (28% vs. 15%).

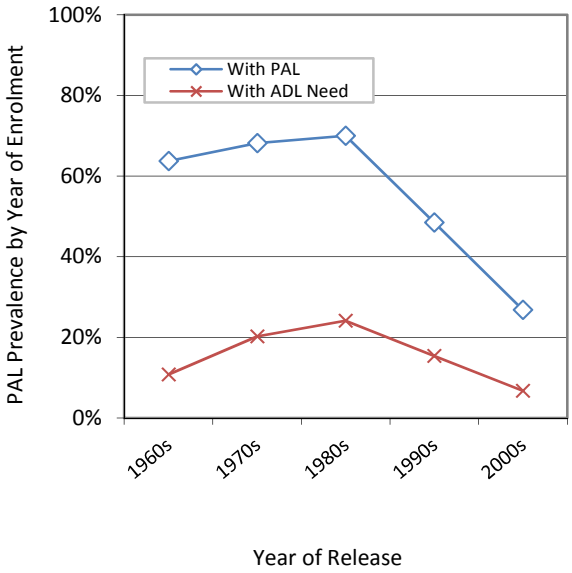


- The increase in activity limitation prevalence rates for both PAL and ADL-need with number of deployments outside Canada for 30 days or more was statistically significant (PAL: Chi^2 = 222.6, p<0.001; ADL-need: Chi^2 = 60.7, p<0.001).



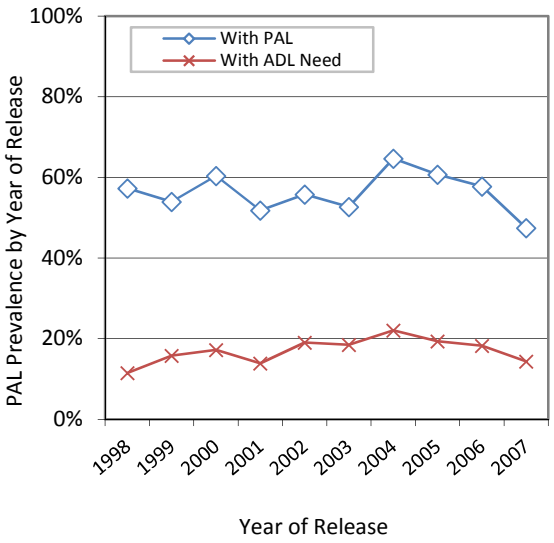
Enrolment Era

- Enrolment era was significantly associated with PAL (Chi^2 316.6, df 4, p<0.001) and ADL-need (Chi^2 91.8, df 4, p<0.001), probably owing to age. Those who enrolled in the 2000s were much younger than those who enrolled earlier, and chronic physical health conditions are much less prevalent in younger adults.



Years since Release

- There was some variability in the prevalence of PAL or ADL-need at the time of survey by year of release, but no clear trend over time.
- Chi^2 detected a slight difference between those with and those without PAL (Chi^2 22.4, df 9, p=0.01) and with and without ADL-need (Chi^2 19.7, df 9, p=0.02).



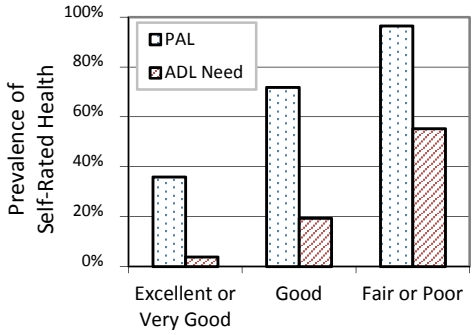
Health Status and Chronic Health Conditions

Self-reported health status was measured in three ways in STCL 2010:

1. General perceived (self-rated) health and mental health (two single questions long used in Canadian population health surveys).
2. Prompted from list of chronic physical and mental health conditions long used in Canadian national surveys.
3. SF-12 Short Form Health Survey physical (PCS) and mental (MCS) component summaries. The SF-12 is widely used around the world. SF-36 norms are available for Canada and SF-36 and SF-12 scores are comparable.

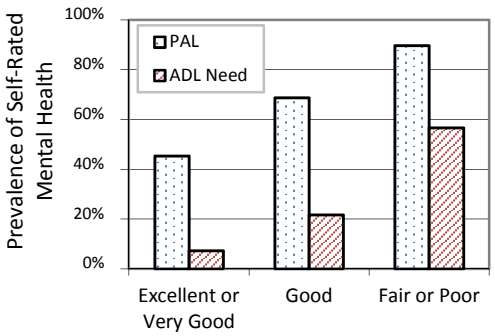
General Health

- There was correlation between health status and activity limitation, as would be expected since activity limitation in this context requires the presence of a health condition and related impairments.
- For both self-rated health and self-rated mental health, the prevalence rates of PAL and ADL-need were highest in those with fair/poor self-rated health. It is clear that the large differences between categories of health status would be significant in statistical testing since the confidence intervals would be small.



- Self-perceived health is primarily influenced by physical health but is also influenced by psychosocial factors and socioeconomic well-being (Shields and Shooshtari 2001). We wondered whether a shift in self-reporting might be occurring as people become more accepting of viewing health as including mental health and viewing health more broadly in terms of access to social determinants such as income, education and employment.

- For CCHS 2002, Mawani and Gilmour (2010) found that responses to this self-perceived mental health question are primarily associated with mental health measured as either self-reported diagnosed chronic mental health conditions, CIDI symptoms, and distress measured using the K6. They found that associations between fair/poor self-reported mental health and mental health morbidities were robust and independent of physical health conditions. Increased comorbidity of mental health conditions was associated with more severe psychiatric symptoms and more functional impairment.



Physical and Mental Health Conditions

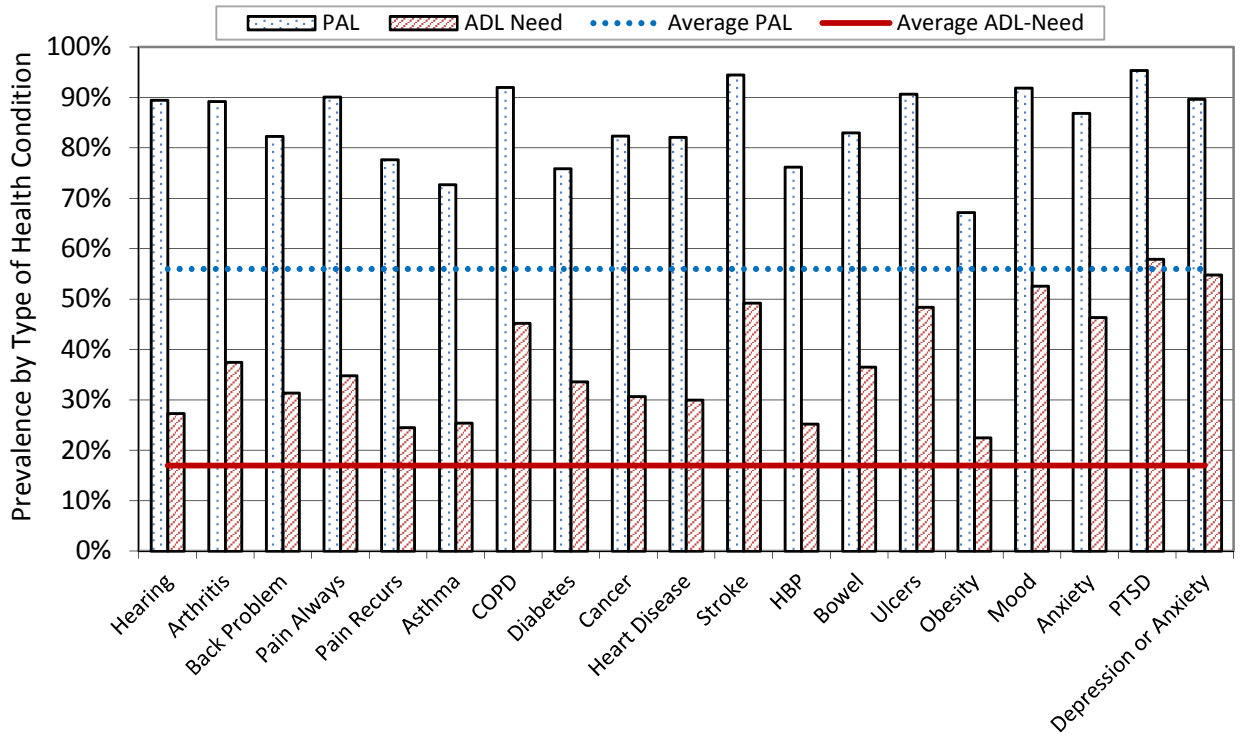
STCL 2010 respondents were prompted from a list of chronic physical health conditions (PHC) and mental health conditions (MHC) that had lasted or were expected to last 6 months or more.

- In STCL 2010:
  - 81.1% had a PHC and 23.6% had a MHC.
  - 27.7% with a PHC also had a MHC.
  - 95.2% with a MHC also had a PHC.
  - These are very important findings to keep in mind when interpreting the activity limitation data from this survey.

In STCL 2010:

- 81% had a physical health condition (PHC) and 24% had a mental health condition (MHC).
- 28% with a PHC also had a MHC.
- 95% with a MHC also had a PHC.

- As would be expected, owing to the way the PAL and ADL-need questions were asked, there was a clear association between both and chronic physical and mental health conditions. The prevalence rates of both PAL and need for assistance with at least one ADL both were higher for all PHCs and MHCs than the population averages for PAL (56%) and ADL-need (17%).
- Although activity limitation prevalence rates were higher for all four MHCs than most PHCs, particularly for ADL-need, the degree to which physical versus mental health contributes to the association with activity limitation is not clear, since most of those with MHCs had comorbid PHCs (95%) while less than a third with PHCs had MHCs (28%).



Comorbidity

Comorbidity is the co-occurrence of two or more health conditions in the same person, and is associated with increased complexity of care and higher rates of adverse health and quality of life outcomes. Prevalence rates of PAL and ADL-need increased with higher degrees of comorbidity.

PAL and ADL-need prevalence rates were higher in Veterans with higher comorbidity of either:

- A higher number of physical or mental health conditions; or
- Having co-occurring physical and mental health conditions.

In STCL, higher comorbidity was correlated with higher prevalence rates of activity limitation measured two ways: comorbidity of PHCs together with MHCs (mental health conditions), and as number of PHCs and number of MHCs. It is important to keep in mind that in STCL 2010 28% of those with a PHC also had a MHC, but in those with a MHC, 95% had a PHC.

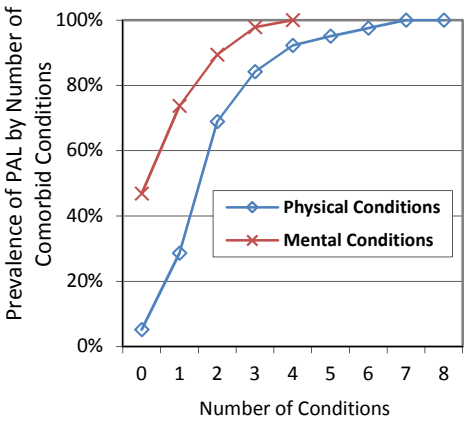
- Of those with no health conditions: sample sizes too small to produce reliable estimates.
- Of those with a MHC but no PHC: sample sizes too small to produce reliable estimates.
- Of those with a PHC but no MHC: 60% had PAL and 11% had ADL-need.
- Of those with both PHCs and MHCs: 88% had PAL and 46% had ADL-need.

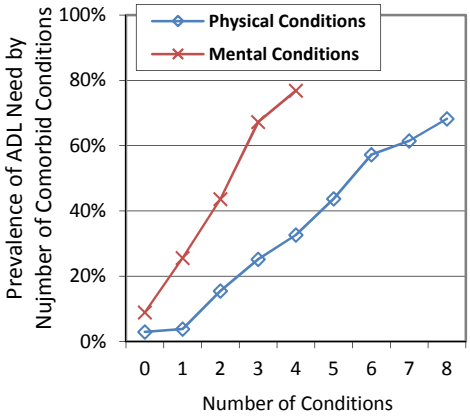
- Comorbidity of PHC, chronic pain and a MHC had the highest rates: PAL 93% and ADL-need 50%.

	Prevalence of PAL or ADL-need (Weighted Population Estimate %)						
	No PHC or MHC	At least one PHC	PHC but no MHC	At least one MHC	MHC but no PHC	At least one each of a PHC and a MHC	At least one each of a PHC, chronic pain/ discomfort and a MHC
PAL	X	67.9	59.9	85.2	X	88.0	93.2
ADL-need	X	20.5	11.0	43.4	X	45.5	49.8

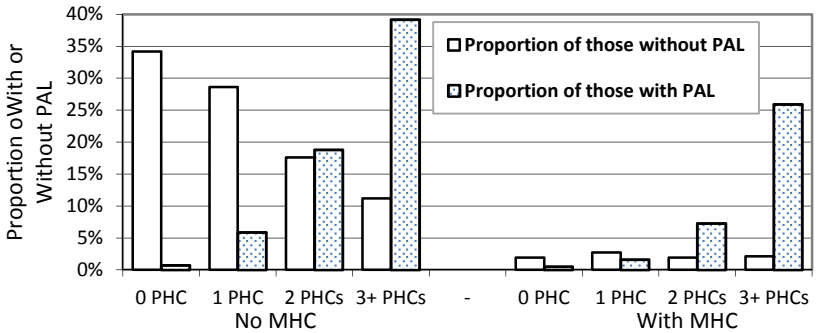
X = estimate unreliable, sample size < 30.

- Comorbidity measured as number of conditions was correlated with both PAL and ADL-need prevalence rates.

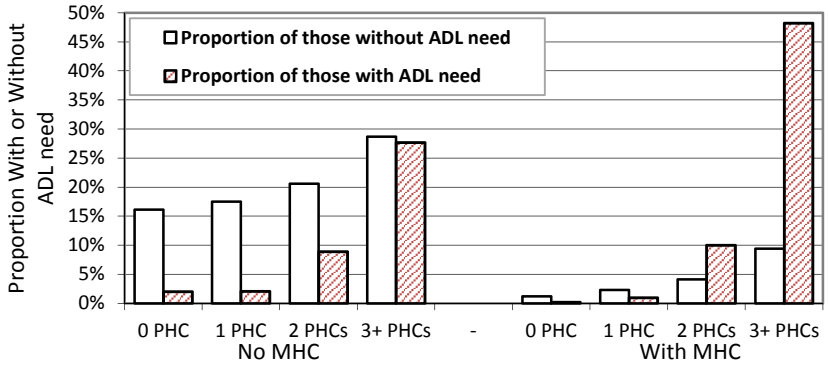




- Veterans who had PAL or ADL-need were concentrated in the highest degree of physical health comorbidity (with 3 or more PHCs):
    - Of those with PAL, 65% had 3+ PHCs (39% had 3+ PHCs/no MHCs and 26% had 3+PHCs/at least one MHC).

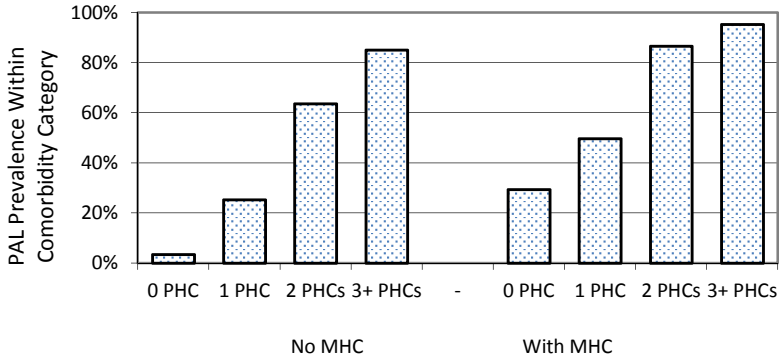


- Of those with ADL-need, 76% had 3+ PHCs (28% had 3+ PHCs/no MHCs and 48% had 3+PHCs/at least one MHC).
- Note that PAL was most prevalent in those with 3+ PHCs and no MHC, but ADL-need was most prevalent in those with 3+ PHCs and at least one MHC.

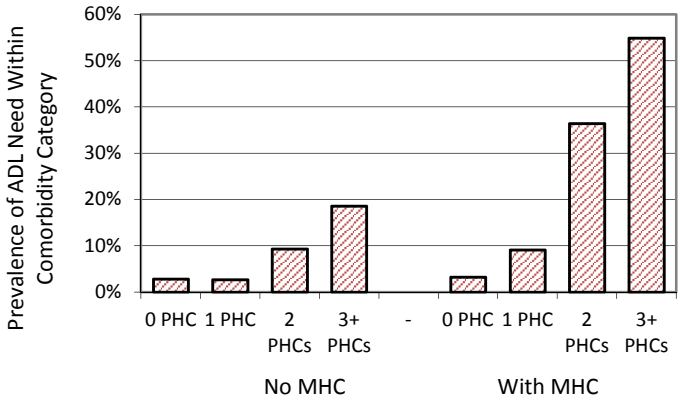


As shown below, comorbidity of PHCs and MHCs seemed to increase PAL prevalence in a simple additive way, but seemed to increase the prevalence of ADL-need by more than the sum of its parts. These hypotheses are being tested in regression models.

- For PAL, there appeared to be a subadditive effect of adding MHCs to PHCs.



- However, for ADL-need, there seemed to be a synergistic effect of adding MHCs to PHCs.



SF-12: Health-Related Quality of Life

QualityMetric's SF-12 Short Form Health Survey is a measure of health-related quality of life (HRQoL). The SF-12, PAL and ADL-need are all measures of functioning related to health conditions. The SF-12 measures HRQoL in relation to physical health (PCS, physical component summary) and mental health (MCS, mental component summary). Scores are normalized to the 1998 U.S. general population such that the U.S. 1998 general population mean is 50. Canadian SF-36 norms are slightly higher than U.S. norms (PCS 51.9 and MCS 52.0, Hopman *et al.* 2000), and SF-36 and SF-12 scores are comparable. Lower scores mean poorer health-related quality of life (well-being). The relationship between SF-12 score and quality of life is not linear: a score of 30 means that 98% of the population is better off in terms of functional health and well-being even though the score drops only 20 points from the population mean of 50 where 50% had better well-being. A score of 40 means 84% had better well-being.

- Overall, STCL Veterans had below-average physical HRQoL compared to the Canadian general population, but average mental HRQoL (Thompson *et al.* 2013).

- SF-12 scores were correlated with the prevalence rates of PAL and ADL-need, which is not surprising since both measure health-related functioning. PAL and ADL-need were present across all levels of HRQoL, but were more prevalent with lower HRQoL (lower SF-12 scores).This finding is useful: lower SF-12 scores can be used to indicate higher prevalence of more severe health-related activity limitation.

- Mean PCS and MCS for those with PAL and ADL-need were lower than for the STCL study population overall, and were much lower on average in those with ADL-need than those with PAL. This is further evidence that ADL-need reflects greater activity limitation than PAL alone.

- PCS was much lower than MCS, suggesting that, on average, physical health problems had a greater impact on HRQoL than mental health problems in those with activity limitation. This does not mean that mental health problems have less disability on impact than physical health conditions in individuals and in fact there is good evidence that this is not the case. However, on average, physical health problems appear to be associated with disability in a greater proportion of the population than mental health problems.

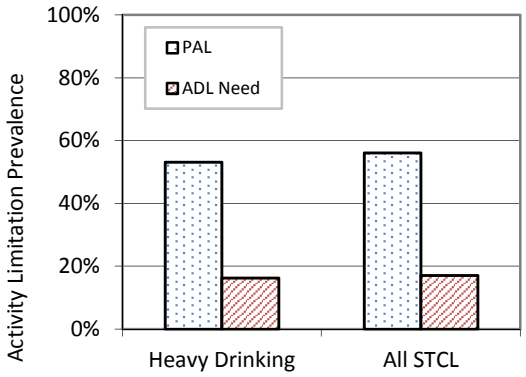
	Mean Physical Component Score (95% CI)	Mean Mental Component Score (95% CI)
Canadian SF-36 norms age- and sex-adjusted to STCL (Thompson *et al.* 2013)	51.9 (51.7-52.1)	52.0 (51.8-52.2)
Whole STCL population	47.3 (47.0-47.7)	52.0 (51.6-52.3)
Those with PAL	41.1 (40.6-41.6)	49.6 (49.0-50.1)
Those ADL-need	32.2 (31.4-33.1)	42.6 (41.6-43.7)

PCS = SF-12 physical component summary, MCS = SF-12 mental component summary, CI = confidence interval.

Health Behaviours

Heavy Drinking

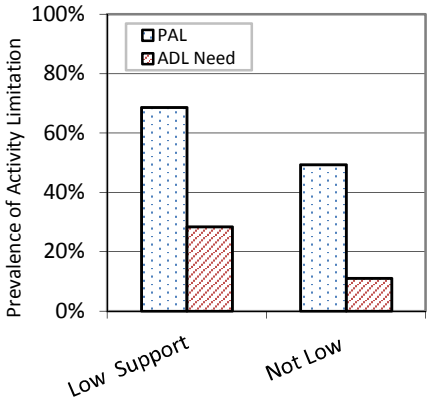
- The prevalence rates of PAL and ADL-need in those with heavy drinking were not significantly different from the overall STCL average prevalence rates for both types of activity limitation.



Stress, Coping and Satisfaction Indicators

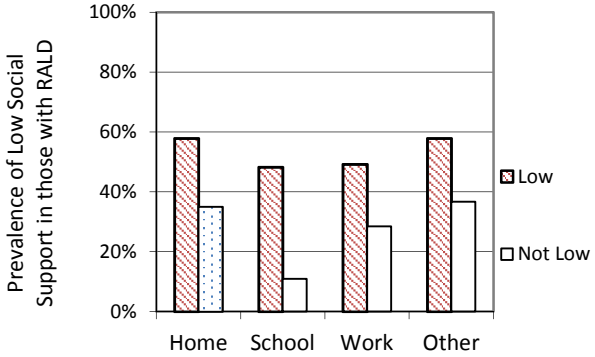
The stress, coping and satisfaction indicators in STCL 2010 included social support, sense of community belonging, mastery, life stress, and satisfaction with life. All were correlated with both types of activity limitation.

- Prevalence rates for both activity limitation measures were highest for all negative categories of stress and coping, consistent with findings by other researchers.
- A significant minority of Veterans who did not have poor stress and coping had activity limitation, reflecting possibly indicating a broad range of activity limitation severity as well as ability to cope with impairments and barriers. For example, even among those who had high mastery (strong sense of control over their lives) 44% had PAL and 7% had ADL-need.



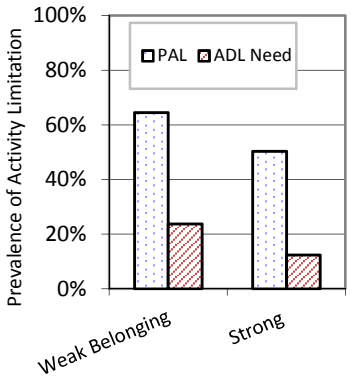
Social Support

- The prevalence rates of PAL and ADL-need were higher in those with low social support (score ≤ 74 on a scale of 19-95; Thompson *et al.* 2011).
- Low social support was correlated with health-related activity reduction in all four life domains (RALD).



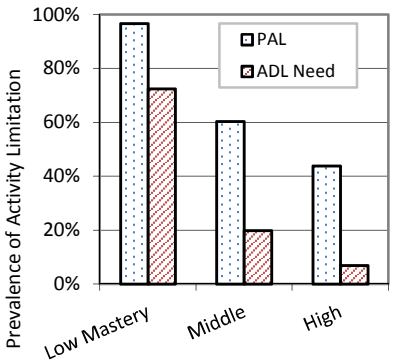
Sense of Community Belonging

- PAL and ADL-need prevalence rates were highest in those with weak or somewhat weak sense of belonging compared to those who sense was strong or somewhat strong.



Mastery

- Mastery, meaning sense of control over one's life, was clearly correlated with activity limitation prevalence.
- Low mastery was measured as a score of ≤ 7 on a scale of 0–35, and mid-range was a score of 8-22 (Thompson *et al.* 2011).

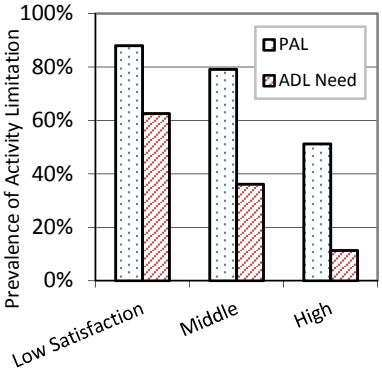


Life Stress

- Both measures of activity limitation were correlated with degree of life stress, ranging from extremely/quite a bit to not at all/not very.

Satisfaction with Life

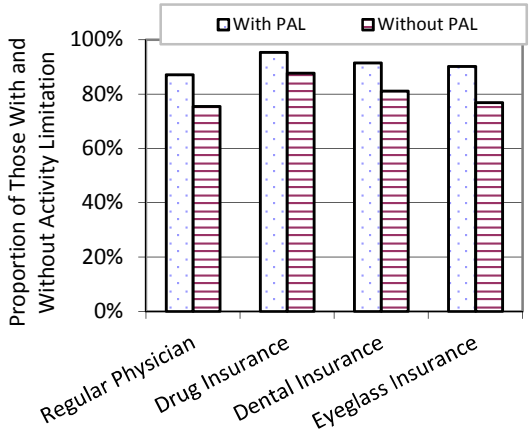
- As with all the other stress/coping indicators, activity limitation was correlated with degree of satisfaction with life.
- ADL-need was very prevalent in those with low life satisfaction.

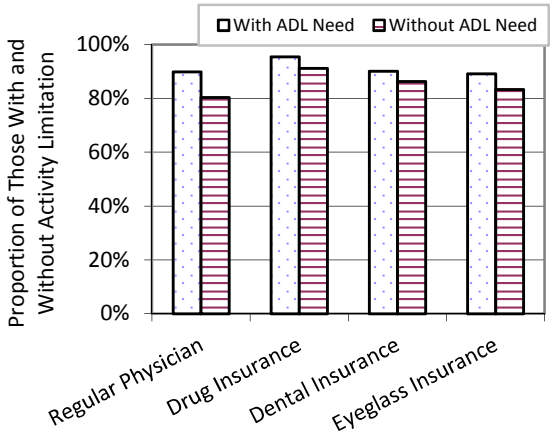


Health Care

Regular Doctor and Health Insurance Coverage

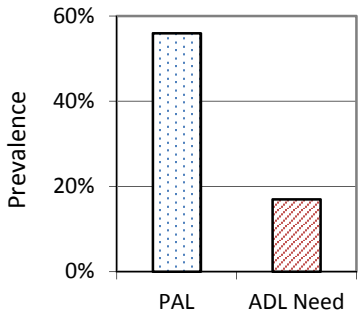
- Veterans with PAL and ADL-need consistently more often had a regular physician and insurance for drug prescriptions, dental care and eyeglasses although the differences were slight and in some cases might not be statistically significant.





Degree of Activity Limitation

The two main measures of activity limitation in the survey (PAL and needing help with at least one ADL) measure two different degrees of activity limitation. PAL prevalence was much higher (56%) than ADL-need (17%). This is expected, since not all who experience PAL need help with ADLs. Many people with PAL are able to live independently and perform all the activities of basic and instrumental activities of daily living. On the other hand, inability to perform an ADL is a marker of more severe activity limitation because the person is not fully independent.



Degree of Activity Limitation in PAL

There was no direct measure of degree of PAL in this survey – respondents either had or did not have PAL. Activity limitation severity within those with PAL can be estimated by distinguishing those with PAL who also needed help with ADLs from those who did not. Very few only had ADL-need (13 cases, or (0.7% weighted), which makes sense because those who need assistance performing ADLs would also have either impairments or activity reduction. On the other hand, many with PAL do not have difficulty performing ADLs.

We therefore constructed a 3-category variable for activity limitation that combined both: (1) those with no activity limitation (no PAL and ADL-need, 43%); those with some activity limitation (PAL only, 40%) and those with a high degree of activity limitation (both PAL and ADL-need, 16%). Only 17 cases reported only ADL without PAL.

Degree of Activity Limitation	Sample Size, Weighted % of STCL Population
None (Neither PAL nor ADL-need)	930, 43.2%
Some (PAL only)	1373, 39.8%
High (PAL and ADL-need)	819, 16.3%
ADL-need only	13, 0.7%

- There were clear correlations between several health and determinants of health indicators and degree of activity limitation (see table below).
- In those with limitations, 60% had a physical health condition as did 98% with some limitations and 99% of those with a high degree of limitations.
- There is evidence that the scale indicates increasing degree of activity limitation (is ordinal).
  - For example, in those with no PAL, 81% were employed, as were 76% who had PAL only, and 49% who had PAL and ADL.
  - Similarly, in those with no PAL, 6% had below average health-related quality of life owing to physical health (PCS), as did 63% with PAL only and 96% with PAL and ADL-need.
  - In addition, the majority with PAL had an easy adjustment to civilian life (58%) and only about a quarter had a difficult adjustment (27%), however the reverse was true for those with both PAL and ADL-need (30% and 57%).
  - These findings support suggestions that there is a broad range of disability experience within those who have PAL.

	Proportion with Activity Limitation Within Each Characteristic or Indicator (Column %)		
Characteristic or Indicator	No Activity Limitations	Some Limitations	High Degree of Limitation
Male	88.9	89.6	82.5
Female	11.1	10.4	17.5
Adjustment to civilian life:			
Easy	77.9	58.1	29.9
Neither	10.2	15.3	13.3
Difficult	11.8	26.6	56.7
Perceived health fair/poor	X	18.3	59.1
Perceived mental health fair/poor	3.1	12.1	48.0
SF-12 Physical component summary below average	6.0	63.3	96.2
SF-12 Mental component summary below average	13.5	26.7	65.7
1+ Physical health condition	59.5	97.7	99.4
1+ Mental health condition	7.7	25.1	61.3
Heavy drinking	27.4	24.0	24.8
Past year suicidal ideation	X	4.7	18.3
Comorbidity of at least one each of physical & mental health condition	27.2	33.0	62.7
Comorbidity of a musculoskeletal condition, chronic pain and a mental health condition	X	17.0	51.7
0 Physical health conditions	40.5	X	X

Characteristic or Indicator	Proportion with Activity Limitation Within Each Characteristic or Indicator (Column %)		
	No Activity Limitations	Some Limitations	High Degree of Limitation
1 PHC	31.2	11.4	X
2 PHCs	17.2	24.5	14.8
3+ PHCs	11.1	61.8	80.5
Widowed/Separated/Divorced	5.2	11.3	13.4
Household Income < $50,000	14.8	15.3	27.1
Low income (below LIM)	6.5	4.5	8.6
Post secondary education	55.3	51.6	46.1
Labour Force Participation:			
Employed	81.4	76.0	49.3
Unemployed	6.7	5.4	5.6
Not in the labour force	11.9	17.6	32.3
Unable to work	X	X	12.8
Low social support	22.8	34.1	55.8
High life stress	13.0	21.1	42.8
Poor life satisfaction	X	4.6	26.3
Low mastery	X	X	9.1

X – Rate considered unreliable since sample size < 30.

Degree of Need for Help with ADLs

Throughout this report, ADL limitation was measured as needing help with at least one ADL. Degree of ADL-need can be estimated by accounting for the number of ADLs for which the person needs help.

- The prevalence rates of many health and determinants of health characteristics increased as the number of ADLs for which Veterans needed help also increased. For example, the proportions of Veterans with poor or very poor self-perceived health increased from 10% in those who needed help with no ADLs to 70% of those who needed help with 3 or more ADLs.
- This gradient was not present in those with heavy drinking and higher education.

Characteristic or Indicator	Proportion Within Each ADL-Need Category Who had the Characteristic or Indicator (Column %)			
	0 ADLs	1 ADL	2 ADLs	3+ ADLs
Male	89.2	86.4	82.5	78.7
Female	10.8	13.6	17.5	21.3
Perceived health fair/poor	9.5	44.9	62.4	69.8
Perceived mental health fair/poor	7.4	32.9	49.2	64.8
SF-12 Physical component summary below average	33.5	87.9	96.4	99.4
SF-12 Mental component summary below average	19.8	51.3	67.3	82.4
1+ Physical health condition	77.8	96.4	98.6	99.0
1+ Mental health condition	16.1	49.2	60.0	74.2
Heavy drinking	25.7	26.1	26.6	20.9

Characteristic or Indicator	Proportion Within Each ADL-Need Category Who had the Characteristic or Indicator (Column %)			
	0 ADLs	1 ADL	2 ADLs	3+ ADLs
Past year suicidal ideation	3.2	14.0	X	27.4
Comorbidity of at least one each of physical & mental health condition	14.7	48.7	60.0	74.2
Comorbidity of a musculoskeletal condition, chronic pain and a mental health condition	8.8	39.6	49.8	63.7
0 PHCs	22.2	X	X	X
1 PHC	21.7	X	X	X
2 PHCs	20.8	14.4	X	10.8
3+ PHCs	35.4	74.8	73.5	85.4
Widowed/Separated/Divorced	8.2	16.1	19.4	8.8
Post secondary education	54.1	44.3	48.0	44.3
Low income (below LIM)	5.6	X	X	12.5
Low social support	28.2	52.3	56.2	27.4
High life stress	16.9	34.5	38.2	54.3
Poor life satisfaction	3.1	16.4	23.7	39.3
Low mastery	0.7	3.1	8.2	16.9
Difficult adjustment to civilian life	19.0	44.7	62.3	67.4

X – Rate considered unreliable since sample size < 30.

Self-Reported Causes of Impairments

Asked to pick one from among several causes of the conditions they reported in RAC_Q01-05, the majority chose military work conditions (75%), including both clients (86%) and non-clients (61%). More non-clients identified ageing (10%) and disease or illness (7%) than clients. The main conclusion that can be drawn from this table is that belief in a military service connection was very prevalent.

The majority of Veterans attributed the cause of their impairments and participation and activity limitations to their prior military work conditions.

Notably very few Veterans identified emotional or mental health problems or conditions (2%) as a cause for their impairments. This could be in part because respondents could only pick one option, and some with mental health problems might instead have chosen military work conditions. Furthermore, most of the examples provided in the question invoked physical rather than mental health, and did not include impairments common in mental health conditions such as altered mood, fatigue, difficulty concentrating, and behavioural difficulties.

The list contains choices that are not mutually exclusive: it is a mix of settings, mechanisms of injury, and health problems which inter-relate. Eligibility for most VAC benefits, programs and services requires a service relationship, which might have influenced choices.

Indicator	Sample Size (Number of Respondents) and Weighted %					
	VAC Clients		Non-Clients		Whole Study Population	
Best description of the cause of difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities, or a long-term physical condition or mental condition or health problem reduces the amount or the kind of activity at work, in the home, at school or other settings such as leisure or transportation:						
…military work conditions	1419	86.3%	319	60.6%	1738	74.9%
…accident at work	91	5.7%	16	x	107	4.6%
…ageing	18	x	56	10.0%	74	5.0%
…disease or illness	17	x	34	6.5%	51	3.5%
…other	34	1.8%	25	x	59	3.1%
…emotional or mental health problem or condition	31	1.8%	14	x	45	2.3%
…existed from birth or genetic	4	x	18	x	22	x
…civilian work conditions	9	x	14	x	23	x
…motor vehicle accident	16	x	11	x	27	x
…other type of accident	2	x	11	x	13	x
…accident at home	3	x	4	x	7	x
…use of alcohol or drugs	1	x	1	x	2	x

x = sample size < 30 so estimate not considered reliable.

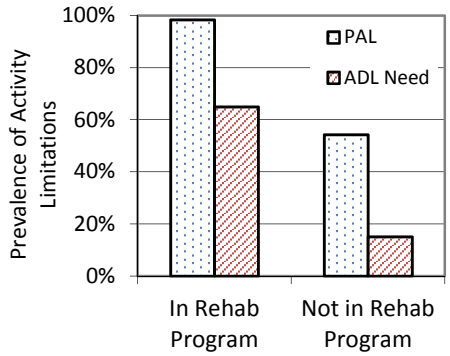
Veterans Participating in the VAC Rehabilitation Program

The VAC Rehabilitation program is one of the New Veterans Charter programs established under the 2006 *Canadian Forces Members and Veterans Compensation and Reestablishment Act*. This section takes a closer look at the subgroup of CAF Regular Force Veterans who released in 1998-2007 and were in the Program at the time of the STCL in 2010.

At the time of the survey, 4% of the STCL study Veterans were in the Rehabilitation program as of March 2009 (sample size = 330 representing about 1,298 Veterans, 95% CI = 1,089-1,409).

At the time of the survey, 4% (95% CI = 3.8-4.4%) of the STCL study Veterans were in the Rehabilitation program (sample size = 330 representing about 1,298 Veterans, 95% CI = 1,089-1,409). The sample can be considered statistically representative of CAF Regular Force Veterans who released during 1998-2007 and were in the Rehabilitation program as of March 2009.

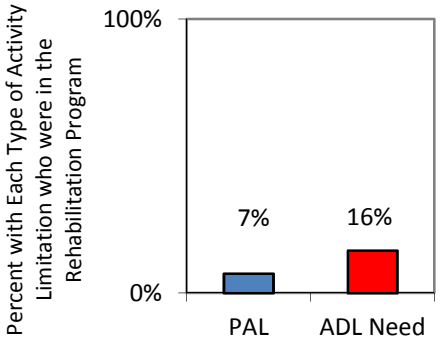
A slight majority of these Program clients (51%) had left service prior to 2006 when the Rehabilitation program was established under New Veterans Charter. Veterans released prior to 2006 can apply to the Program.



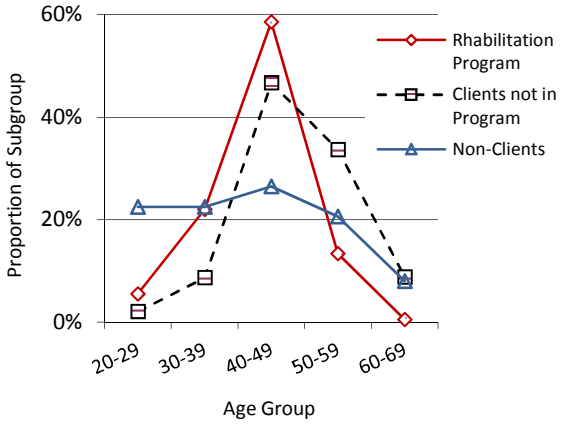
- Of STCL Veterans in the Rehabilitation program, the great majority (98%) had PAL, as would be expected, and 65% had ADL-need.
- Of those not in the Program, 54% had PAL and 15% had ADL-need.
- So those in the Rehabilitation program more often had more severe activity limitation, since the proportion needing help with ADLs was so high compared to those

who were not in the Program.

- 7% of the STCL Veterans who had PAL were in the Rehabilitation program, as were 16% with ADL-need.
- Further work is required to estimate need for assistance with management of disability among those not in the Rehabilitation program. Many likely had mild had PAL or had adapted to their situations and were not experiencing significant role disability.



- All age groups were represented in the Veterans participating in the Rehabilitation program.
- On average, Rehabilitation program clients were younger (age 43 years) than other VAC clients (age 48), and similar to non-clients (age 42).
- Note that the modal age group in the Rehabilitation program was the group with the highest activity limitation prevalence (age 40-49).



As shown in the table below, there were differences between clients in the Rehabilitation program and other Veterans. As a group, the Rehabilitation program clients had more difficulties in all dimensions of well-being, reflecting the complex nature of the health, disability and social problems they were dealing with. However, like other VAC clients and non-clients, Rehabilitation program clients had high rates of having regular doctors and health insurance coverage. Note that statistical testing is needed to confirm some of these trends.

Characteristic or Indicator ***(Small differences require confirmation by statistical testing)*** *(E.g., Of those in the Rehabilitation program, 78% had a difficult adjustment, the remainder did not.)*	Proportion of Each Group with the Characteristic or Indicator (Column %)		
	Rehabilitation Program Clients	**Other VAC Clients**	**Non-Clients**
Difficult adjustment to civilian life: Many more	**78**	37	17
Age at Survey: Rehabilitation program clients came from all age groups but were younger than other VAC clients on average, and similar to non-clients. The overall age distribution of the STCL Veterans was bimodal: 20's-30s and 40s-50s.	**Mean = 43 yrs Range = 22-62 yrs**	Mean = 48 yrs Range = 22-67 yrs	Mean = 42 yrs Range = 20-60 yrs
Female gender: Small differences, probably not statistically significant.	**15**	11	12
Marital status married or common-law: fewer.	**68**	82	73
Education post-secondary: fewer than non-clients, but similar to other VAC clients.	**43**	47	56
Income:			
Income below $50,000: twice as many.	**40**	18	15
Satisfaction with finances: fewer.	**44**	72	76
Main activity in the year prior to the survey	Program clients had the highest rates of being in school or training (13%) or on disability (39%), and the lowest rates of having worked (33%) or being retired and not looking for work (6%). A few were caring for a family member.		
Release type medical: most.	**75**	53	9
Rank at release: Almost two-thirds had released with junior non-commissioned officer rank.	**62**	44	22
Year of release	Program clients more often had released in 2006 (27%) and 2007 (21%) than the other two groups, and less often in all earlier years.		
Years of service: 10-19 years of service: most.	**32**	19	10
Proportion with 2-9 years of service: much higher	**21**	9	20
Service branch Army: most, higher than the other groups.	**62**	55	45
General Health: Program clients were worse off in all measures, which would be expected given the nature of their health problems:			
Perceived health fair/poor	**61**	34	8
Perceived mental health fair/poor	**59**	25	7
SF-12 Physical component summary below average	**89**	78	26
SF-12 Mental component summary below average	**74**	40	19
Chronic health conditions: Note high rates of physical followed by mental health conditions in Program clients, and high rates of comorbidity of physical and mental health conditions and chronic pain.			
At least one physical health condition (PHC)	**99**	99	72
At least one mental health condition	**78**	40	13
At least 1 physical and 1 mental health condition	**77**	40	11
A musculoskeletal condition & MHC & chronic pain	**63**	32	6

Characteristic or Indicator ***(Small differences require confirmation by statistical testing)*** *(E.g., Of those in the Rehabilitation program, 78% had a difficult adjustment, the remainder did not.)*	Proportion of Each Group with the Characteristic or Indicator (Column %)		
	Rehabilitation Program Clients	**Other VAC Clients**	**Non-Clients**
Number of comorbid physical health conditions: similar to other VAC clients, but much higher than non-clients.			
0 PHCs	**X**	X	28
1 PHC	**X**	7	25
2 PHCs	**16**	19	20
3+ PHCs	**76**	72	28
Past-year suicidal ideation: Higher than the other groups.	**23**	9	4
Heavy drinking: Lower than the other groups.	**20**	25	26
Stress and Coping: Program clients worse off, as would be expected considering the health and disability issues they are dealing with.			
Dissatisfied with life:	**33**	11	3
Life stress:	**48**	27	17
Weak sense of community belonging	**73**	45	38
Low mastery	**12**	4	X
Health system: Only minor differences by these measures.			
Have a regular medical doctor	**89**	89	78
Prescription drug insurance	**95**	98	89
Dental insurance	**83**	94	84
Eye glasses insurance	**87**	92	81

X – Sample size < 30 so estimate unreliable.

Identification of Subgroups to Focus Resources for Mitigating Disability

It has been clear since the first analysis of the STCL data (Thompson *et al.* 2013) that there is no "average Veteran" and that the CAF Regular Force Veteran population is very heterogeneous. This makes the development and deployment of policies and programs to support Veterans in transition to civilian life challenging. This section uses two approaches to identify subgroups of Veterans to clarify the picture:

- Characteristics of subgroups with unusual disability rates.
- Clusters of subgroups with similar socioeconomic and disability challenges.

Low disability rates suggest protective factors, while high rates identify those who would benefit from targeted screening and resources

Subgroups with Unusual Rates of Activity Limitations

The following tables identify characteristics of those with higher and lower prevalence rates of PAL or IADL-need. This table will assist both at the population level and at the individual client service level, by identifying characteristics of Veterans more likely to be experiencing disability.

Small differences need to be tested for statistical significance. A detailed table showing the specific prevalence rates is available. Further statistical analysis using regression modeling is underway to account for chance and confounding, informed by this initial descriptive analysis.

Characteristic or Indicator	**Markers of higher prevalence of activity limitation: Subgroups with *higher* prevalence rates of PAL or ADL-need (both when neither specified).** *(Small differences require confirmation by statistical testing)*
Adjustment to civilian life	Difficult; Neither difficult nor easy
Age at Survey	PAL: 40-49, 50-59, 60-69 ADL-need: 40-49, 50-59
Gender	Female
Marital Status	Married/commonlaw; Widowed/separated/divorced
Education	High school graduation or less
Labour Force Participation	Not in the labour force; Unable to work
Household income Satisfaction with finances	Less than $100,000/yr Dissatisfied; Neither dissatisfied nor satisfied
Main activity in the year prior to the survey	On disability; Looking for work; Other
Release type	Both: Medical release PAL: Retirement age; Service complete
Rank at release	Senior or junior NCM
Years of service	10 or more
Service branch	PAL: Air Force ADL-need: Army.
Deployment	Deployed 30+ days outside Canada
Self-reported health or mental health	Good; Fair/poor
SF-12 health-related quality of life	Scores below average for the general Canadian population
Chronic health conditions	Any chronic physical or mental health condition Having multiple physical or mental health conditions Having both chronic physical and mental health conditions Having all 3 of a musculoskeletal condition and a mental health condition & chronic pain
Stress and Coping	Satisfaction with life: Neither satisfied nor dissatisfied; Dissatisfied/Very dissatisfied Life stress: A bit; Extremely/Quite a bit Low social support Weak sense of community belonging Low or moderate mastery
Health system	Having a regular medical doctor Having prescription drug insurance, dental insurance, eye glasses insurance

Characteristic or Indicator	**Markers of lower prevalence of activity limitation: Subgroups with *lower* prevalence rates of PAL or ADL-need (both when neither specified).** *(Small differences require confirmation by statistical testing)*
Adjustment to civilian life	Very/moderately easy
Age at Survey	20-39
Gender	Male
Marital Status	Single/Never married
Education	Post Secondary
Labour Force Participation	Employed and unemployed
Household income Satisfaction with finances	More than $100,000/yr Satisfied/Very satisfied
Main activity in the year prior to the survey	Worked at a job or business; ADL: Reserve Force PAL: in school or training
Release type	Voluntary; Involuntary ADL: Retired, Service complete
Rank at release	Officer; Cadets; Privates and recruits
Years of service	< 10 years
Service branch	Both: Navy; PAL: Army; ADL-need: Air Force.
Deployment	Never deployed.
Self-reported health or mental health	Very good/excellent.
SF-12 health-related quality of life	Scores above average for the general Canadian population
Chronic health conditions	Having no health condition
Stress and Coping	Satisfaction with life: Satisfied/Very satisfied Life stress: Not at all/Not very Not low social support Strong sense of community belonging High mastery

Age Subgroups with Similar Challenges

CAF Regular Force Veterans surveyed in STCL 2010 were not all long-career soldiers, airmen/women or sailors who retired to civilian life after many years of service. Instead, they ranged in age from 20 to 67; had short, medium and long years of service; came from all ranks; and most entered the civilian workforce (MacLean *et al.* 2011). Subgroups can be identified with similar characteristics and needs (called "segmenting" in the business world).

Table 5 shows the results of a simple descriptive cluster analysis showing, at two points of time (when they released from service and at the time of the survey 2-12 years later), characteristics for 4 different age groups (age at survey) and within each age group 3 levels of activity limitation: none (no PAL or ADL-need), some activity limitation (PAL only, no ADL-need) and high activity limitation (individuals had both PAL and ADL-need). This yields 12 subgroups with recognizable characteristics in terms of disability, health and determinants of health challenges.

Age 20-29. This was the healthiest age group, with the least disability, and was the least established in either military or civilian life. Although about 1 in 8 (16%) were in this age group, few of those with activity limitation were in this age group (3%) and the proportion with both PAL and ADL-need was so small it could not be reliably estimated. This makes sense, because younger people are much less likely to have chronic health conditions and therefore are less likely to experience disability. On the whole,

most of these younger Veterans were starting out in their working careers and beginning to build marriages and families and generally would be more likely to have needs related to education, social support and employment than to health and disability. However, those who did have health problems might be less likely to have access to financial, education and social resources than older people They appeared to have a very high prevalence of the lowest income level, for example (data not shown), but owing to the small sample size of this group in STCL little is known about them.

Activity limitations and mental health problems were concentrated in the next two age groups.

Age 30-39. This was the second largest age group in the study population (18%). They generally left service with junior ranks and shorter lengths of service than older age groups, but were more likely to be established in military life prior to leaving service than younger Veterans, and were much more likely to be married. However, 32% released as recruits, so this was a mixed group. Like those aged 40-59, 27% had a difficult adjustment to civilian life, and they had the second highest rate of medical release (16%) after those aged 40-59. They also had the second highest prevalence of PAL (33%) and PAL plus ADL-need (10%), and higher rates of physical and mental health conditions.

Age 40-59. Most of the CAF Veterans who released in 1997-2008 were in this age group (58%). In contrast to the younger Veterans, 40% of those with activity limitation were in this age group and 14% had both PAL and ADL-need. It is not surprising that they would have higher rates of activity limitations, since they are older and physical health conditions accumulate with age, but this age group was worse off than the older Veterans. The prevalence of mental health conditions was highest in this group. They were predominantly junior and senior NCMs and most had 10 or more years of service. This age group was more often married. Those with activity limitation less often had a university degree and less often were employed. The rate of being disabled or on disability was much higher in those with both PAL and ADL-need.

Age 60-69. Only 8% of the study population was in this oldest age group, which makes sense because the study included only those who had released from service 2-12 years prior. Overall they were better off than the younger Veterans in this study population. Many more had senior ranks (36% of the senior officers and 53% of the senior NCMs were in this age group) and almost all had 20 or more years of service. Only 11% had medically released, compared to 34% of those aged 40-59. They had the lowest rate of difficult adjustment to civilian life of all the age groups (11%), and the highest rate of easy adjustment to civilian life (77%). This age group, although older with higher prevalence of physical health conditions, had such low rates of mental health conditions that a weighted prevalence could not be estimated. Although 54% had PAL, only 8% had both PAL and ADL-need, far lower than the rate for those aged 40-59 (32%). It is possible that this age group was most likely to have been relatively healthy throughout their long careers, leaving service with advantages over the middle-aged group that had higher rates of medical release.

This analysis demonstrates the heterogeneity in CAF Veterans transitioning to civilian life, but makes it easier to draw attention to subgroups with specific needs. The analysis highlights two broad types of subgroups that might benefit from special attention: those with needs in large numbers (ages 30-59 who released from service in mid-career with physical and/or mental health problems), and those with high needs in small numbers: very young Veterans with health problems and limited resources, and those in the oldest age group with significant disability. These proportions aid in planning deployment of limited support resources.

Table 5. Twelve clusters (segments) in the STCL study population, defined by 4 age groups and 3 degrees of activity limitation.

No activity limitation: Neither PAL nor ADL-need.
Some activity limitation: PAL only, no ADL-need.
High activity limitation: Individuals with both PAL and ADL-need.

Example: 17.0% of those aged 20-29 were cadets.
X = Sample size < 30 so unable to estimate small proportion accurately.

	Age at Survey:	20-29	30-39	40-59	60-69
	% of STCL Population (Row total = 100%):	15.7%	18.4%	57.9%	7.9%
Characteristic at Release		Percent of Characteristic Total (Column %)			
Rank	Senior Officers	X	X	8.8	36.3
	Junior Officers	X	14.6	7.7	X
	Cadets	17.0	X	X	X
	Senior NCM	X	X	41.3	53.0
	Junior NCM	8.3	31.6	39.3	X
	Private	21.4	14.7	X	X
	Recruit	52.6	31.1	X	X
Length of Service	<2 yrs	67.3	31.7	X	X
	2yrs to <10yrs	32.7	52.7	2.9	X
	10yrs to <20yrs	X	15.5	17.6	X
	20 yrs and over	X	X	77.7	97.5
Release Type	Involuntary Release	10.7	11.6	X	X
	Medical Release	X	16.3	34.4	10.7
	Voluntary Release	84.3	68.8	49.1	32.4
	Retirement Age	X	X	4.5	55.6
	Service Complete	X	X	10.7	X
Adjustment to civilian life	Very of moderately difficult	17.6	26.8	28.6	13.6
	Neither difficult nor easy	11.7	14.6	13.1	X
	Moderately or very easy	70.7	58.6	58.3	76.7

Age at Survey:		20-29			30-39			40-59			60-69		
% of STCL Population (Row total = 100%):		15.7%			18.4%			57.9%			7.9%		
Activity limitation Status at Survey:		Neither	PAL Only	PAL & ADL	Neither	PAL Only	PAL & ADL	Neither	PAL Only	PAL & ADL	Neither	PAL Only	PAL & ADL
% of STCL Population (Row total = 100%):		12.0%	3.2%	X	10.5%	6.0%	1.8%	18.0%	26.5%	13.5%	3.1%	4.3%	0.6%
% of Age Group (Row total = 100% within age group):		76.2%	20.3%	X	57.2%	32.9%	10.0%	31.1%	45.7%	32.2%	38.5%	53.6%	7.9%
Characteristic at Time of Survey		**Percent of Total Categories Within Each Characteristic (Column %)**											
Main activity in the past 12 months	Worked in the reserve forces	X	X	X	X	X	X	X	X	X	X	X	X
	Worked at a job or ran a business	81.8	77.3	X	85.3	88.0	50.3	87.4	79.5	50.3	39.3	48.0	X
	Retired and not looking for work	X	X	X	X	X	X	7.1	9.8	10.5	51.3	39.7	X
	Attended school or training	X	X	X	X	X	X	X	X	X	X	X	X
	Looked for work	X	X	X	X	X	X	X	3.0	X	X	X	X
	Cared for family member or partner	X	X	X	X	X	X	X	X	X	X	X	X
	Was disabled or on disability	X	X	X	X	X	34.6	X	2.7	31.7	X	X	X
	Other	X	X	X	X	X	X	X	X	X	X	X	X
Labour Force Status	Employed	81.7	73.7	X	84.2	86.3	45.1	87.3	78.1	50.4	36.3	50.5	X
	Unemployed	X	X	X	X	X	X	X	5.4	5.2	X	X	X
	Not in Labour Force	X	X	X	X	X	35.8	8.8	15.1	31.3	59.7	47.3	X
	Unable to work	X	X	X	X	X	X	X	X	13.1	X	X	X
Household Income In Relation to LIM	1 (lowest)	29.3	X	X	19.6	24.4	X	7.2	14.2	28.8	X	X	X
	2	16.9	X	X	25.3	X	X	12.9	18.8	24.9	X	X	X
	3	18.2	X	X	15.4	X	X	18.6	21.9	16.3	X	26.3	X
	4	19.3	X	X	20.1	24.2	X	24.1	24.3	17.4	X	X	X
	5 (highest)	16.2	X	X	19.7	X	X	37.1	20.8	12.6	X	27.4	X
Highest Educational Attainment	Less than high school diploma	X	X	X	X	X	X	6.3	7.7	8.7	X	X	X
	High school diploma	41.7	X	X	24.0	33.4	45.1	43.3	43.7	44.4	36.8	49.0	X
	Post Secondary not university degree	41.8	57.0	X	43.2	49.0	40.9	25.6	36.3	40.3	X	X	X
	University degree	X	X	X	29.2	X	X	24.9	12.2	6.6	37.2	25.4	X
Marriage Status	Married or living common law	44.2	50.9	X	76.0	73.2	72.3	84.5	81.0	80.3	90.6	89.9	91.2
	Widowed, separated or divorced	X	X	X	X	X	X	7.7	13.2	14.5	X	X	X
	Single, never married	53.3	43.0	X	20.4	17.7	X	7.8	5.8	5.1	X	X	X
Physical Health Conditions	None	53.8	X	X	45.3	X	X	32.0	X	X	X	X	X
	One or more	46.2	89.4	X	54.7	94.3	95.2	68.0	99.1	99.9	77.1	100.0	100.0
Mental Health Conditions	None	92.8	69.9	X	89.7	73.4	X	92.6	73.4	37.9	97.3	89.9	X
	One or more	X	X	X	X	26.6	63.1	7.4	26.6	62.1	X	X	X

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