

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item No	Recommendation	Page
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2-3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) <i>Cohort study</i> —Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	7-11
		<i>Case-control study</i> —Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls	
		<i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	N/A
		(b) <i>Cohort study</i> —For matched studies, give matching criteria and number of exposed and unexposed	
		<i>Case-control study</i> —For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7-11
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7-11
Bias	9	Describe any efforts to address potential sources of bias	7-11
Study size	10	Explain how the study size was arrived at	7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	29
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	7-11
		(b) Describe any methods used to examine subgroups and interactions	7-11

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(c) Explain how missing data were addressed

(d) *Cohort study*—If applicable, explain how loss to follow-up was addressed

Case-control study—If applicable, explain how matching of cases and controls was addressed 7-11

Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy

(e) Describe any sensitivity analyses

Continued on next page

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Results		Page	
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	12
		(b) Give reasons for non-participation at each stage	N/A
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	22-23
		(b) Indicate number of participants with missing data for each variable of interest	N/A (no missing)
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	26-27
Outcome data	15*	<i>Cohort study</i> —Report numbers of outcome events or summary measures over time	26-27
		<i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure	N/A
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	N/A
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	24-25
		(b) Report category boundaries when continuous variables were categorized	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7-11
Discussion			
Key results	18	Summarise key results with reference to study objectives	12-13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	16-17
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	14-16
Generalisability	21	Discuss the generalisability (external validity) of the study results	17
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	19

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

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Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

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**FACTORS ASSOCIATED WITH DISABILITY BENEFITS CLAIM DURATION AMONG
CANADIAN WORKERS: A RETROSPECTIVE COHORT STUDY**

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ABSTRACT

Background: Disability insurance protects workers from total loss of income in case of a disabling injury or illness by providing wage-replacement benefits. To better inform early identification of claims at risk of prolonged recovery, we explored predictors of disability benefits claim duration.

Methods: Using administrative data from SSQ Financial, a private Canadian disability insurer, we evaluated the association between nine variables and short-term and long-term disability benefits duration using Cox proportional hazards regression analyses.

Results: For both short-term disability (n=70,776) and long-term disability (n=22,205) claims, and across all disorders, older age, female gender, heavy job demands, presence of comorbidity, attending an independent medical evaluation, receipt of rehabilitation therapy, and longer time to claim approval were associated with longer claim duration. Higher pre-disability salary was associated with longer short-term disability claim duration. Quebec residency was associated with longer short-term disability claim duration among workers with psychological disorders, but shorter short-term disability claim duration among those with musculoskeletal complaints and other illnesses. For long-term disability claims, however, residing in Quebec was associated with shorter claim duration, although the magnitude of the association differed across clinical conditions.

Interpretation: The factors we found to be associated with short-term and long-term disability claim duration may be helpful to identify claims at risk of prolonged

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3 recovery. Our study has limitations, however, and well-designed prospective studies
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5 are needed to confirm our findings and identify other promising predictors.
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INTRODUCTION

According to the 2012 Canadian Survey on Disability, approximately 3.8 million Canadians aged 15 years and older (13.7%) reported a disability.(1) Disabilities often create barriers for participation in the labour force, and the resulting financial implications can be substantial, especially when absences from work are protracted.(2, 3) Although workers' compensation plans are mandatory in Canada, they do not provide coverage for all workers or for non-work-related injuries or illnesses (e.g. injuries acquired outside of work, diabetes, rheumatoid arthritis). Employees wishing to obtain coverage for disabling injuries or illnesses not covered by compensation boards can purchase disability benefits through private for-profit, providers. In Canada, short-term disability benefits plans typically provide wage-replacement benefits for 17 or 26 weeks. Long-term disability coverage begins when short-term disability benefits run out, with most policies providing coverage up to age 65, as long as claimants remain disabled from their own occupation for the initial two years of the claim, and disabled from any and all occupations for which they are qualified by training or experience after they have been on claim for two years. Insurance companies monitor claimants' medical conditions and, should they improve to the point where claimants no longer meet the definition of disability, terminate payments.

We have previously reported, in a study conducted in partnership with Sun Life Financial Canada, several administrative, clinical, and demographic factors associated with disability benefits claim duration among depressed workers.(4) It remains

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3 uncertain, however, whether these associations are consistent among other private
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5 insurers and other clinical conditions. This is important to address, as understanding
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7 of factors associated with claim duration - especially those that are modifiable - may
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9 help insurers optimize case management policies and processes to facilitate faster
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11 recovery. Hence, we sought, using data from another private Canadian disability
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13 insurer - SSQ, Life Insurance Company Inc. (hereafter referred to as SSQ) - to identify
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15 factors associated with disability benefits duration among Canadian workers.
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METHODS

Standardized reporting

We followed the Strengthening the Reporting of Observational studies in Epidemiology statement.(5)

Setting

SSQ is the parent company of SSQ Financial Group and comprises three affiliates - SSQ General Insurance Company Inc., SSQ Insurance Company Inc., and SSQ Realty Inc. SSQ Financial Group offers a range of financial products and services across Canada, including traditional group plans for health insurance, prescription drug insurance, disability insurance, compassion insurance, life insurance, dental care insurance, health spending accounts, and travel insurance. In addition to offering standard short-term and long-term disability benefit plans, SSQ offers “additional” short-term and long-term disability plans, which may be paid simultaneously or subsequently to the standard plans. The “additional” plans differ from standard plans with respect to several factors, including financial, e.g. lower or greater portion of pre-disability salary paid, or administrative, e.g. shorter or longer duration to change in disability definition date.

Design

Retrospective cohort study.

Source of data

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3 We examined all claims SSQ approved for short-term and/or long-term disability
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5 benefits from January 1, 2007 to March 31, 2014, which represented the most recent
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7 consecutive period for which SSQ collected data consistently and was available
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9 electronically.
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12 13 14 15 *Outcomes*

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17 Our primary outcomes were short-term and long-term disability claim duration.
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20 21 22 *Statistical analysis*

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24 For our analyses, we considered claimants who received only short-term disability
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26 benefits, only long-term disability benefits, or both short-term and long-term
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28 disability benefits for the same disability from SSQ. If a claimant received both short-
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30 term and long-term disability benefits for the same disability, so long as each plan
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32 was only of one type, i.e. either standard or “additional,” that claimant contributed
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34 once in each short-term and long-term disability model.
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41 Guided by our previous study(4) and content experts on our team, we selected, *a*
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43 *priori*, 10 variables that may be associated with claim duration, and predicted the
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45 direction of anticipated effects (Appendix 1). Claimants for whom SSQ manages both
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47 short-term and long-term disability benefit plans do not undergo a separate approval
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49 process for long-term disability; rather, there is no delay between moving from short-
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51 term to long-term disability benefits as long as claimants qualify. For such claimants,
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53 we used the duration of claim approval for the short-term disability plan that SSQ
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3 recorded in its database, and imputed a value of 0 days to represent the duration of
4 approval for the corresponding long-term disability plan. We considered two variables
5 - attendance at an independent medical evaluation arranged by SSQ, and receipt of
6 rehabilitation service funded by SSQ - as time-varying covariates to account for when
7 they were initiated during the course of the disability claim.
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18 We screened all data to identify implausible values, inconsistencies, and missing data.
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20 When we identified implausible values and inconsistencies, we worked with SSQ to
21 correct the data. We report the mean and standard deviation (SD) of normally
22 distributed continuous variables, the median and interquartile range for continuous
23 variables not normally distributed and, for categorical variables, number of
24 occurrences as percentages.
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34 We tested for pairwise correlations between independent variables using a correlation
35 matrix; if the Pearson Correlation Coefficient (r) was >0.80 for two variables, we
36 removed the variable that we deemed of lesser importance. This situation arose once:
37 claimants' province of residence and the office at which the claims were received
38 were highly correlated ($r=0.89$ for short-term disability model; $r=0.93$ for long-term
39 disability model). Administrators at SSQ advised that they were more interested in
40 province of residence, due to the potential influence of provincial differences in
41 healthcare services and legislature affecting claims. Accordingly, we removed the
42 claim office variable from our models, leaving us with nine variables. For the
43 remaining variables, we tested for multicollinearity by calculating the variance
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3 inflation factors (VIFs) associated with each independent variable in our models, and
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5 considered values ≥ 5 to indicate the presence of multicollinearity; associated VIFs
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7 were all < 2 .
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12 We performed time-to-event analyses using Cox proportional hazards regression
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14 models to assess the association between the independent variables and duration of
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16 short-term and long-term disability benefits. Our event was cessation of disability
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18 benefits. For short-term disability claims that were receiving benefits for 17 weeks
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20 (the most common short-term disability benefit plan duration administered by SSQ)
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22 after claim approval, we used 118 days (17 weeks minus 1 day) as our censoring point;
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24 for long-term disability claims, we used the date of extraction as our censoring point.
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26 To avoid overfitting, we required ≥ 10 events per variable for our Cox regression
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28 models. (6) We excluded independent variables with < 200 observations, unless we
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30 were able to collapse them with other related variables to exceed this threshold. To
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32 confirm that the proportional hazards assumption was met for each variable in our
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34 model, we calculated its interaction with time, while entering the remaining variables
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36 in the model without interactions. Statistical tests conducted when a data set is very
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38 large may, however, show statistical significance when the magnitude of effect is
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40 trivial. Therefore, when an interaction was significant, we calculated the hazard
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42 ratios (HRs) at different time-points, as follows: short-term disability: 30 and 90 days;
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44 long-term disability : 180 days, 365 days (1 year), and 548 days (2.5 years); if the HRs
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46 did not differ by ≥ 0.20 across the time-points, we did not consider the proportional
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48 hazards assumption to be violated. We calculated HRs for our analyses, their
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3 associated 99% confidence intervals (CIs), and associated p-values. To minimize the
4 likelihood of spurious findings, we considered an independent variable as statistically
5 significant if it had a $p < 0.01$ in each final adjusted model.
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12 We conducted post-hoc analyses to explore if independent variables were consistently
13 predictive of short-term and long-term disability benefits duration across clusters of
14 clinical conditions. We conducted our analyses for each of three subgroups of
15 claimants, according to pre-defined classifications of illness or injury: (1)
16 psychological disorders, (2) musculoskeletal complaints, and (3) other clinical
17 conditions. For each variable in our models, we calculated its interaction with
18 clinical condition, while entering the remaining variables in the model without
19 interactions. When an interaction was significant, we compared the HRs across the
20 clinical subgroups for substantial differences in effect sizes: if the HRs did not vary by
21 ≥ 0.20 across the different models, we presented the effect sizes from the overall
22 model; if the HRs varied by ≥ 0.20 , we presented the effects of the respective
23 independent variable(s) separately for each clinical subgroup.
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44 We conducted all statistical analyses using SAS (version 9.3) and created plots using
45 IBM SPSS Statistics (version 20.0).
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49 50 *Research ethics*

51 The Hamilton Integrated Research Ethics Board approved our study.
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RESULTS

Our study sample consisted of 70,776 short-term and 22,205 long-term disability claims. Table 1 presents the baseline characteristics of our study sample.

Short-term disability

Of 70,776 short-term disability claims, 57,158 (80.8%) were closed prior to 17 weeks, and 13,618 (19.2%) were censored (Figure 1).

Our adjusted Cox regression analysis showed associations between older age (HR [99% CI] = 0.87 [0.86 to 0.88], per decade), higher pre-disability salary (0.95 [0.92 to 0.99], per \$1000 per week), female gender (0.88 [0.85 to 0.90]), heavy job demands (0.93 [0.90 to 0.96]), report of comorbidity (0.65 [0.63 to 0.67]), attending an independent medical evaluation (0.23 [0.20 to 0.27]), receipt of rehabilitation therapy (0.21 [0.18 to 0.25]), and longer time to claim approval (0.95 [0.95 to 0.96], per week) and longer short-term disability claim duration (Table 2). Claimants with psychological disorders who resided in Quebec were more likely (0.69 [0.63 to 0.74]) to have longer short-term disability claims than those from other provinces; conversely, claimants with musculoskeletal complaints and other illnesses from Quebec were more likely to have shorter short-term disability claims versus claimants from elsewhere in Canada: 1.15 [1.10 to 1.22] for musculoskeletal complaints; 1.08 [1.04 to 1.12] for other illnesses.

Long-term disability

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3 Of 22,205 long-term disability claims, 17,474 (78.7%) were closed when we extracted
4 our data, and 4,731 (21.3%) were censored (Figure 2).
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10 Our adjusted regression analysis showed older age (HR [99% CI] = 0.82 [0.80 to 0.83],
11 per decade), female gender (0.94 [0.90 to 0.98]), heavy job demands (0.94 [0.89 to
12 0.99]), report of comorbidity (0.75 [0.72 to 0.79]), attending an independent medical
13 evaluation (0.57 [0.53 to 0.61]), receipt of rehabilitation therapy (0.55 [0.52 to
14 0.59]), and longer time to claim approval (0.93 [0.92 to 0.94], per week) were
15 associated with longer long-term disability claim duration (Table 3). Further, we
16 found Quebec residency was associated with shorter long-term disability claim
17 duration, although the magnitude of the effect varied according to claimants' clinical
18 condition: 1.54 [1.38 to 1.71] for psychological disorders; 1.39 [1.28 to 1.51] for
19 musculoskeletal complaints; 1.19 [1.10 to 1.28] for other illnesses.
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Table 4 presents the comparison between our anticipated direction of effects and the observed results.

INTERPRETATION

Main findings

For both short-term and long-term disability claims, older age, female gender, heavy job demands, presence of comorbidity, attending an independent medical evaluation, receipt of rehabilitation therapy, and longer time to claim approval were associated with longer claim duration. Higher pre-disability salary was associated with longer short-term disability claim duration. Residing in Quebec was associated with longer short-term disability claim duration for claimants with psychological disorders, but shorter short-term disability benefits duration for claimants with musculoskeletal complaints and other illnesses. For long-term disability claims, residing in Quebec was associated with shorter claim duration across all clinical conditions.

Explanation and comparison with other studies

Our findings are consistent with our previous study, which suggested older age, female gender (short-term disability claims only), higher salary, and co-morbidity were associated with longer claim duration among claimants with depression.⁽⁴⁾ In our previous study, prolonged time to claim approval was only associated with longer long-term disability claim duration; in the current study, however, longer claim approval duration was associated with longer short-term and long-term disability claim duration. Minimizing time to claim approval may be a promising target for reducing claim duration. Furthermore, long-term disability claims may benefit from the continuity of care when the same provider has overseen short-term disability claim management.

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6 We previously found that residing in Quebec (versus Ontario) was associated with
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8 longer short-term disability claim duration, but shorter long-term disability claim
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10 duration.(4) Now, we report a similar association among SSQ claimants with
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12 psychological disorders who resided in Quebec versus elsewhere in Canada. Among
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14 claimants with musculoskeletal complaints and other illnesses, however, Quebec
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16 residency was associated with shorter short-term and long-term disability benefit
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18 duration. Systematic differences in claim management policies and processes in
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20 Quebec may explain variation in claim duration. For instance, Quebec is the only
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22 province with a civil code, the rest of Canada uses the common law. Under the civil
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24 code in Quebec, should claimants wish to commence a legal action against their
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26 disability insurer for terminating a claim, they must pay a retainer to obtain counsel;
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28 in the common law provinces, there is no such requirement. Further, there are no
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30 significant damage awards given under the civil code, whereas in the common law
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32 provinces, there is case law with damage awards in excess of \$1 million. These
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34 policies may provide greater incentive for litigation outside of Quebec, which is
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36 associated with prolonged disability.(7-9)
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46 Our results are consistent with previous evidence suggesting heavy physical job
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48 demands are associated with delayed recovery.(10-15) Contrary to our hypotheses,
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50 however, we found claimants who attended an independent medical evaluation or
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52 received rehabilitation service are more likely to experience prolonged claim
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54 duration. We were unable to adjust for injury or illness severity, and it is possible
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3 these interventions are largely directed towards claimants who are sicker or more
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5 seriously injured, and would therefore experience longer claim duration.
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10 *Strengths and limitations*

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12 Strengths of our study include *a priori* selection of independent variables for our
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14 regression models, including the anticipated direction of effects. Other strengths
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16 include no missing data, and correction of all identifiable data errors and
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18 inconsistencies. Limitations of our study include the retrospective study design, which
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20 did not allow us to investigate certain variables in detail, e.g. reasons for arranging
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22 independent medical evaluations and rehabilitation; as well, a number of variables
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24 known to affect claim duration were unavailable, e.g., injury or illness severity.
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27 Second, our primary outcome, i.e. disability claim duration, underestimates total
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29 disability duration, as benefits start date may not coincide with disability start date,
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31 especially among claimants who qualify for long-term disability benefits, but have to
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33 wait before receiving payments, i.e. the elimination period. Further, claim closure is
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35 a surrogate for patient-important outcomes, such as functional recovery and sustained
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37 return to work.(4) In addition, our results may not be generalizable to individuals who
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39 present with work-related disability, as those claims would be submitted to provincial
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41 compensation boards. Last, our analyses did not account for the effects of clustering
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43 arising from claimants who may have multiple disabilities over the time period of the
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45 study, and who would have contributed more than one claim to our dataset. The
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47 direction of bias associated with more than one claim from an individual is difficult to
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49 predict: it could lead to over or underestimates of the magnitude of association.
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6 *Conclusions and implications for practice and future research*
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8 We found two previously untested predictors of short-term and long-term disability
9 benefits duration - attendance at an independent medical evaluation and receipt of
10 rehabilitation. Further, claimants' age, gender, job demands, presence of
11 comorbidity, attendance at an independent medical evaluation, receipt of
12 rehabilitation therapy, and time to claim approval factors were consistently
13 predictive of benefits duration, irrespective of clinical condition. Quebec residency
14 was associated with longer short-term disability claim duration among workers with
15 psychological disorders, but shorter short-term disability claim duration among those
16 with musculoskeletal complaints and other illnesses; for long-term disability claims,
17 residing in Quebec was associated with shorter claim duration, although the
18 magnitude of the association differed across clinical conditions. Our results provide a
19 direction for randomized trials that address determinants of return to work.
20 Modifiable factors, such as time to claim approval, are subject to interventions that
21 may decrease claim duration. Non-modifiable risk factors could allow identification of
22 claims at high risk of prolonged recovery who might then be targeted for
23 interventions, like psychotherapy, for which preliminary evidence suggests possible
24 benefit.(4, 16)
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3 **FOOTNOTES**
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9
10 by SSQ Financial Inc.
11

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Table 1. Baseline characteristics

Variable	Short-term disability, n (%)	Long-term disability, n (%)
Total claimants	70776	22205
Age: Median (Q1 to Q3) years	46 (36 to 53)	48 (40 to 54)
Gender		
Male	31068 (43.9%)	10052 (45.3%)
Female	39708 (56.1%)	12153 (54.7%)
Monthly salary: Median (Q1 to Q3)	\$3695.5 (\$2915.5 to \$4546.5)	\$3521.8 (\$2799.8 to \$4546.5)
Job demands		
Sedentary	22586 (31.9%)	8104 (36.5%)
Light	30217 (42.7%)	8604 (38.8%)
Heavy	17973 (25.4%)	5497 (24.8%)
Province		
Quebec	59117 (83.5%)	16700 (75.2%)
Other	11659 (16.5%)	5505 (24.8%)
Illness		
Psychological disorder	15294 (21.6%)	7325 (33.0%)
Musculoskeletal complaint	22124 (31.3%)	7165 (32.3%)
Other	33358 (47.1%)	7715 (34.7%)
Comorbidity		
Yes	10381 (14.7%)	6447 (29.0%)
No	60395 (85.3%)	15758 (71.0%)
Attendance at SSQ-arranged independent		

medical evaluation*		
Yes	1341 (1.9%)	2275 (10.3%)
No	64435 (98.1%)	19930 (89.8%)
Receipt of SSQ-funded rehabilitation*		
Yes	1098 (1.6%)	2552 (11.5%)
No	69678 (98.5%)	19653 (88.5%)
Time to claim approval: Median (Q1 to Q3) weeks	1.0 (0.9 to 1.9)	2.4 (1.1 to 5.6)

Q1: first quartile; Q3: third quartile.

*At any point during benefits period.

Table 2. Determining factors predictive of time to short-term disability benefits duration based multivariable Cox regression analysis

Factor	HR	99% CI for HR		P-value
		Lower	Upper	
Age (per 10 years)	0.87	0.86	0.88	<0.0001
Salary (per \$1000 per week)	0.95	0.92	0.99	0.0003
Gender				
Female vs. Male (reference group)	0.88	0.85	0.90	<0.0001
Job demands				
Heavy vs. Sedentary (reference group)	0.93	0.90	0.96	<0.0001
Light vs. Sedentary (reference group)	0.99	0.97	1.02	0.4963
Province				
Quebec vs. Other (reference group) by Psychological disorder	0.69	0.63	0.74	<0.0001
Quebec vs. Other (reference group) by Musculoskeletal complaint	1.15	1.10	1.22	0.0084
Quebec vs. Other (reference group) by Other illness	1.08	1.04	1.12	0.0003
Comorbidity				
Yes vs. No (reference group)	0.65	0.63	0.67	<0.0001
Attendance at SSQ-arranged independent medical evaluation				
Yes vs. No (reference group)	0.23	0.20	0.27	<0.0001
Receipt of SSQ-funded rehabilitation				
Yes vs. No (reference group)	0.21	0.18	0.25	<0.0001
Duration of claim approval (weeks)	0.95	0.95	0.96	<0.0001

HR: Hazard ratio; CI: Confidence interval.

HR >1 is associated with shorter claim duration; HR <1 is associated with longer claim duration.

Table 3. Determining factors predictive of time to long-term disability benefits duration based on multivariable Cox regression analysis

Factor	HR	99% CI for HR		P-value
		Lower	Upper	
Age (per 10 years)	0.82	0.80	0.83	<0.0001
Salary (per \$1000 per week)	1.02	0.97	1.08	0.3525
Gender				
Female vs. Male (reference group)	0.94	0.90	0.98	0.0001
Job demands				
Heavy vs. Sedentary (reference group)	0.94	0.89	0.99	0.0022
Light vs. Sedentary (reference group)	1.02	0.98	1.07	0.1912
Province				
Quebec vs. Other (reference group) by Psychological disorder	1.54	1.38	1.71	<0.0001
Quebec vs. Other (reference group) by Musculoskeletal complaint	1.39	1.28	1.51	0.0003
Quebec vs. Other (reference group) by Other illness	1.19	1.10	1.28	<0.0001
Comorbidity				
Yes vs. No (reference group)	0.75	0.72	0.79	<0.0001
Attendance at SSQ-arranged independent medical evaluation				
Yes vs. No (reference group)	0.57	0.53	0.61	<0.0001
Receipt of SSQ-funded rehabilitation				
Yes vs. No (reference group)	0.55	0.52	0.59	<0.0001
Duration of claim approval (weeks)	0.93	0.92	0.94	<0.0001

HR: Hazard ratio; CI: Confidence interval.

HR >1 is associated with shorter claim duration; HR <1 is associated with longer claim duration.

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3 **Figure 1. Kaplan Meier (survival) curve of short-term disability duration**
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Figure 2. Kaplan Meier (survival) curve of long-term disability duration

Please see attached EMF file.

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Table 4. Comparison between predictors associated with claim duration for short-term disability versus long-term disability claims

Predictor	Short-term disability	Long-term disability	Anticipated direction
Older age	(-)	(-)	(-)
Female (versus males)	(-)	(-)	(-)
Higher salary	(-)	NS	(-)
Heavy job demands (versus sedentary)	(-)	(-)	(-)
Light job demands (versus sedentary)	NS	NS	(-)
Quebec residency (versus else)	(-) for claimants with psychological disorders, (+) for claimants with musculoskeletal complaints and other illness	(+)	(-) for short-term disability, (+) for long-term disability
Presence of comorbidity (versus no comorbidity)	(-)	(-)	(-)
Attendance at SSQ-arranged independent medical evaluation (versus no attendance)	(-)	(-)	(-)
Receipt of SSQ-funded rehabilitation (versus no receipt of rehabilitation)	(-)	(-)	(+)
Longer time to claim approval	(-)	(-)	(-)

(-) associated with longer claim duration; (+) associated with shorter claim duration; NS: not significant

APPENDIX 1. Description of variables

Variable	Description	Anticipated direction of claim duration (for both short-term and long-term disability claims unless otherwise stated)
Age	Claimant's age at the beginning of disability	Older age: (-)
Gender	Claimant's gender	Female: (-)
Salary	Claimant's pre-disability gross income	Higher salary: (-)
Job demands	Physical demands of claimant's job (sedentary, light or heavy)	Heavy: (-) Light: (-)
Province	Claimant's province of residence	Quebec: (-) for short-term disability, Quebec: (+) for long-term disability
Comorbidity	If claimant has a secondary illness recorded in their claim file	Comorbidity present: (-)
Office	If a claim was received at Quebec or National office	Quebec: (-) for short-term disability, Quebec: (+) for long-term disability
Attendance at an independent medical evaluation	If claimant has attended an independent medical evaluation	Attendance at an independent medical evaluation: (-)
Receipt of rehabilitation	If claimant has received rehabilitation funded by SSQ Financial or not	Receipt of rehabilitation: (+)
Duration of claim approval	Duration from disability claim registration date to disability claim contractual approval date	Longer duration of claim approval: (-)

(-) associated with longer claim duration; (+) associated with shorter claim duration.

APPENDIX 2. Five most common conditions contributing to analyses, in descending order of prevalence

	Psychological disorder	Musculoskeletal complaint	Other illness
Short-term disability	Major depression	Lumbosacral sprain	Pneumonia (acute lobar pneumonia or viral)
	Adjustment disorder with depressed mood	Carpal tunnel with surgery	Inguinal hernia with herniorrhaphy
	Adjustment disorder with anxious mood	Lumbodynia	Pregnancy (complications)
	Adjustment disorder with mixed mood	Sprained ankle I and II degree	Contusions, multiple (traumas)
	Anxiety	Shoulder tendinitis	Cataract with surgery
Long-term disability	Major depression	Herniated disc (lumbar hernia) without surgery	Breast cancer
	Adjustment disorder with mixed mood	Lumbodynia	Lung cancer
	Adjustment disorder with depressed mood	Osteoarthritis	Multiple sclerosis (advanced or acute)
	Adjustment disorder with anxious mood	Shoulder tendinitis	Cerebrovascular accident
	Depressive disorder	Lumbosacral sprain	Cancer with chemotherapy