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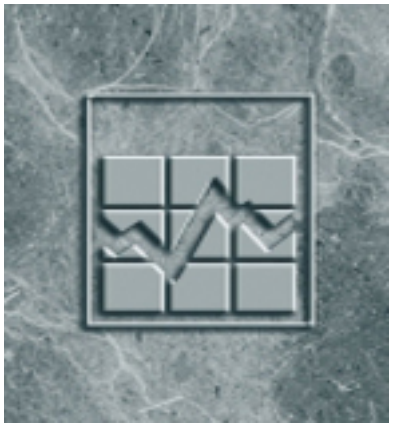
Research Paper

Effects of Self-Rated Disability and Subjective Health on Job Separation



by William Magee

Income Statistics Division
24 R.H. Coats Building, Ottawa K1A 0T6

Telephone: 1 613 951-7355

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Abstract

There have been very few studies of the effects of disability or subjective health on job separations for a range of specific reasons. Estimates of the effects of both subjective health and work-related disability on the hazard (i.e. risk) of job separation for twelve reasons are presented in this report. Data are from a longitudinal study of a representative sample of the Canadian population -- the Survey of Labour and Income Dynamics (SLID). Both work-related disability and poor subjective health are found to increase hazard of job separation for three reasons: to provide caregiving, due to dismissal, and separations directly attributed to either illness or disability. In addition, work-related disability significantly increases the hazard of job separations due to poor pay, and separations motivated by workplace environmental stress. Non-conventional criteria for judging statistical significance are adopted in this study. Effects that are significant at conventional levels are considered to be of borderline significance here. The positive effect of work-related disability on the hazard of retirement is of borderline statistical significance when control variables identifying type of job are not included as covariates. Subjective health has borderline negative effects on the hazard of job separation to return to school, and on separations from one job to take a different job. These negative effects suggest that poor subjective health may slow the rate of transitions from work to school, and the rate of transitions between jobs. The results are interpreted as being consistent with the idea that workers consider illness and disability when deciding to leave a job for other reasons. Future research should focus on how workers consider illness and disability in job separation decisions that may influence their life course. Future research should also attempt to determine whether effects on dismissal occur because of deficits in the performance of ill or disabled workers, or if patterns of dismissal reflect discrimination against ill or disabled workers. One methodological suggestion for future waves of the SLID interview schedule is to include follow-up questions to determine the immediate plans of those who separate from jobs due to illness or injury

Research has demonstrated that poor subjective health and disability increase people's risk of separation from jobs and the labour force (Crawford 1998; Hum and Simpson 1996; Mutchler et al. 1999; van de Mheen et al. 1999). This research has primarily investigated how health and disability contribute to job separation in general terms, without differentiating between job separations that happen for different primary reasons.

The effects of subjective health and disability on job separations that occur for specific primary reasons, as presented here, are of interest in that these effects illuminate one little-studied route through which subjective health and disability impact specific life course transitions. Although job separations necessarily involve movement into new statuses or positions, most previous studies on the effects of health and disability on job separations have not incorporated any information about the destinations of those undergoing such transitions into their analyses. Focusing on reasons for transitions out of jobs is one way to incorporate the destinations of workers into the analysis. For example, many people leave jobs to pursue alternatives to work, and the destination is given as a primary reason for the job separation.

Another reason to focus on the effects of subjective health and disability on job separation for specific reasons is because different patterns of effects have different research and policy implications. For instance, the implications associated with the effects of disability on job separation for reason of dismissal are different from those of disability on job separation to provide family caregiving. Effects of disability on dismissal might suggest that persons who have difficulty performing work tasks are at an increased risk of being fired, or that discrimination against disabled workers puts them at risk of dismissal. An effect of disability on job separation to provide family caregiving might suggest that disabled workers who have children at home, or ill relatives, find it more difficult to perform both caregiving and paid work than do workers without a disability. A final reason for focusing on the effects of subjective health and disability on specific reasons for job separation is because the long-term health effects of job separation vary with the reason for the job separation (Pavalko, 1999).

The few studies that have differentiated between job separations that occur for specific reasons tend to focus only on retirement (Albrecht 1992; Hayward et al 1998; Henretta at al. 1992). Only one previous study (Crawford 1998) has estimated the association of disability with multiple reasons for job separation. This study, however, did not utilize methods that permit causal inference and the associations observed were not extensively interpreted. Interpretation of the associations between subjective health or disability and job separation in causal terms is dangerous if data on the timing of both factors is not considered because job separation impacts health, and effects differ by reason for separation (Pavalko & Smith 1999). The research presented in this report is the first to assess the effects of subjective health and disability on a wide range of reasons for job separation, controlling for factors that may influence subjective health, disability, and job separation.

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DATA AND METHODS

Data are taken from a longitudinal study of persons in Canada— the Survey of Labour and Income Dynamics (SLID). The effects of subjective health and disability on job separations that occur for twelve different reasons are presented. The first eleven reasons are: (1) illness/injury or disability; (2) retirement; (3) to provide care to a child or elderly relative (or other family responsibilities); (4) to return to school; (5) to move to a new residence; (6) to take a new job or concentrate on another job; (7) because of poor pay; (8) because of personal conflicts or harassment in the work place; (9) because of stressful physical conditions of work (i.e. noise pollution); (10) dismissal (i.e. being fired); (11) and other involuntary separation (primarily due to layoff and seasonal work). The twelfth 'reason' refers to job separations for which the respondent could not, or would, not provide a reason.

Sample

The SLID is a longitudinal study of overlapping panels of respondents. Each panel is followed for six years. The first sample (panel 1) is representative of the Canadian population between the ages of 16 and 69 as of January 1993. The six reference years for this panel are 1993 to 1998. The second sample (panel 2) is representative of the Canadian population in January 1996, and is followed until December 2001 (final data collection in early 2002). A third panel has already begun (1999-2004), but data from that panel was not available for these analyses.

Data collected from both longitudinal panels are utilized in these analyses. However, the tables and figures presented here focus on the data collected between 1997--1998. This is due to the fact that global measures of subjective health are only assessed in the SLID starting in early 1997. Thus, prospective analyses of the effects of subjective health must necessarily focus on job separations during 1997 and 1998. Effects of disability estimated with data from all five years are discussed when those effects are inconsistent with estimates based on separations occurring during 1997--1998.

Reasons for Job Separation

The SLID assesses reasons for job separations and dates of separations retrospectively, at the beginning of each year for the year prior. Respondents are asked about each job held during the prior year. Those who left jobs are asked, "What was your main reason for leaving this job?" Those reporting that a job ended are asked to cite the primary reason why the job came to an end. Those who report that the reason for a job separation was because they were dissatisfied with work are asked, "Can you be more specific?"

Table 1 presents the proportion of all jobs ending for each of the twelve reasons investigated by age-cohort (indicated by age of respondent at last interview) and sex of respondent. Although the labels for the reasons for job

separation are descriptive, it should be recognized that there is diversity with each category. For instance, people who leave a job for a different job combine those who leave salaried employment to start their own business, and those switching between salaried position to another. The n's presented in this table refer to the number of job spells that were ongoing during 1997 and 1998. Analyses of separations to return to school are conducted only for respondents under age 40. Analyses of retirement are conducted only for respondents who are age 40 and older. Preliminary analyses revealed that very few people experience job separations for these two reasons outside these age ranges.

Table 1. Percent of All Jobs Ending For Each of Twelve Reasons, by Age Category and Sex.

	Age at Last Interview				**Sex**	
	15-24	**25-39**	**40-54**	**55 & older**	**Men**	**Women**
	(n= 7985)	(n=14813)	(n=12488)	(n=2816)	(n=22239)	(n=15863)
Reasons for Job Separation						
illness or disability	0.9	0.7	0.7	2.1	0.8	0.9
retirement	0.0	0.1	1.1	11.0	1.1	1.3
to take another job	10.8	8.3	3.9	1.7	7.2	6.5
to attend school	15.5	1.3	0.1	0.0	3.4	3.6
caring for family/other personal	1.2	0.8	0.4	0.1	0.2	1.3
move to a new residence	2.1	1.0	0.3	0.2	0.6	1.4
poor pay or # hrs of work	1.6	1.2	0.6	0.4	1.1	0.9
personnel conflict /harassment	1.3	0.7	0.4	0.2	0.6	0.8
environmental stress (e.g. cold)	0.7	0.5	0.3	0.3	0.4	0.5
involuntary multiple reasons (e.g. layoff)	27.1	13.8	12.4	13.9	17.2	14.0
dismissal by employer	0.8	1.0	0.6	0.5	0.8	0.8
other/ unspecified	4.0	3.2	2.4	2.2	3.0	3.0
DK refused	4.8	5.8	5.1	5.8	5.3	5.5
did not leave job	29.2	61.5	71.7	61.7	58.1	59.4
mean time at risk (days), unweighted	510	1989	4074	5736	2518	2264

n' s are unweighted, proportions are weighted.

Independent Variables

Descriptive statistics for independent variables are presented in Tables 2 and 3. Table 2 presents descriptive statistics for variables that do not vary with time (i.e. time since job began). The sample sizes presented in this table refer to the number of persons who contributed data to these analyses. Table 3 presents descriptive statistics for variables that may vary over time and, thus, across job spells (i.e. income). The sample sizes presented in Table 3 refer to the number of job spells.

Table 2. Descriptive Statistics for Independent Variables That Do Not Vary Across Job Spells, by Sex and Longitudinal Panel (a).

	Total Sample		**Men**		**Women**	
			Panel 1	Panel 2	Panel 1	Panel 2
(n = number of persons)	n= 28359		n=7641	n=8373	n=5910	n= 6435
	Min	Max	mean/ %	mean/ %	mean/ %	mean/ %
Cohort (year of birth)	1924	1982	1959	1959	1960	1960
Parent's Education:						
less than high school	0.0	1.0	0.27	0.26	0.23	0.24
some high school	0.0	1.0	0.17	0.16	0.18	0.15
completed high school	0.0	1.0	0.21	0.22	0.22	0.23
non-university certificate	0.0	1.0	0.15	0.10	0.16	0.13
some university	0.0	1.0	0.11	0.10	0.13	0.11
don't know/refused	0.0	1.0	0.10	0.17	0.08	0.15
Race/ Ethnicity:						
visible minority status	0.0	1.0	0.08	0.08	0.09	0.10
Aboriginal status	0.0	1.0	0.02	0.02	0.03	0.03
immigrant	0.0	1.0	0.15	0.16	0.16	0.16
Language:						
English 1st language	0.0	1.0	0.61	0.55	0.63	0.57
French 1st language	0.0	1.0	0.24	0.23	0.22	0.22
Other 1st language	0.0	1.0	0.15	0.22	0.15	0.21

(a) percentages are weighted

Table 3. Descriptive Statistics for Independent Variables That Vary With Time by Sex and Longitudinal Panel. (a)

	Total Sample		Men		Women	
			Panel 1	Panel 2	Panel 1	Panel 2
(n = total number of job spells)	n= 38102		n=10674	n=11565	n= 7599	n= 8264
	Min	Max	mean/ %	mean/ %	mean/ %	mean/ %
Job Characterisitcs						
number of jobs spells	1	10	1.75	1.74	1.56	1.57
full-time	0	1	95.6	95.5	91.3	91.9
mixture of full-time & part-time	0	1	4.4	4.5	8.7	8.1
private sector employee	0	1	83.8	85.6	76.8	80.8
government / public sector	0	1	14.6	13.0	21.9	18.4
self-employed with paid help	0	1	0.4	0.3	0.2	0.1
self-employed with no paid help	0	1	0.9	0.8	1.0	0.5
supervises others' work	0	1	21.1	22.2	13.9	16.5
pension plan	0	1	47.2	44.2	44.7	41.6
wages $/hr	2	72	17.52	17.08	14.19	13.95
Marital Status						
currently married	0	1	50.9	52.1	47.1	48.7
previously married	0	1	10.9	9.1	13.0	9.3
Disability/ Impairment						
impairment limits work	0	1	4.0	4.0	3.0	4.0
impairment makes job change difficult	0	1	3.0	3.0	2.0	2.0
other long-term disability	0	1	2.0	1.2	1.2	1.2
Subjective Health						
level (5=poor health)	1	5	1.92	1.93	1.95	1.96
don't know	0	1	3.1	3.6	2.3	3.7
missing/ refused	0	1	0.4	0.6	0.4	0.4

(a) Only job spells during years when income is available are included. n=unweighted. number of job spells. Proportions (weighted) reflect values at the end of the Job Spell

Disability— The assessment of disability among respondents varies with age group. Among those age 64 and younger, disability is assessed by asking a series of questions beginning with the following: "Because of a long-term physical condition, mental condition or health problem, [are you] limited in the kind or amount of activity [you] can do at work?" Respondents who say "no" to this question, and those who are over age 64, are asked if they "have a long-term condition that limits [you] at home, at school or in other activities (such as getting to work or leisure)?" Those who say "no" to both of these questions are asked if they "have any long-term disabilities or handicaps". Those reporting any of these three levels of impairment are then asked if their condition made it difficult to change jobs or to get a better job, if they were satisfied with the number of weeks they worked, and if they would have preferred to work more or less. Those who answer "yes" to any of these questions are defined as having a work-related disability (See Bunch and Crawford 1998 for a review of these disability questions)[1].

It is important to note that work- and non-work-related disabilities are, in part, determined by characteristics of specific jobs and activities of daily life (Loprest, Rupp, and Sandell 1995). The kinds of activities that people can and cannot do at work depend on the activities that comprise the job. Non-work-related impairment is similarly determined by the kind of activities in which people hope to engage outside of work. Since the assessments of work-related disability and non-work-related disability are dependent on current workplace context and goals, estimates of the effects of each on job separation are necessarily context specific. Nevertheless, respondents are asked a summary question about all long-term disabilities, thus, all self-defined disabilities are captured by the SLID assessment.

In addition to questions assessing current disability, respondents who report a disability are asked the year that the condition began. The SLID contains far less precise information about the timing of onset of disability or functional limitations than the timing of job separation (for which precise dates are known). It is, therefore, necessary to assume a date for the beginning of the disability. The date of June 30 was chosen because it is the median point of the year. This assumption only has an impact on estimates for cases where a job spell was terminated in the same year that a condition began. This is true for less than ten percent of the job spells captured in the data.

Subjective Health Status— From 1997 onwards (from the interview in January, 1997 that focuses on 1996 as the target year), subjective health is assessed by a single question at each interview : "Compared to other people your age, how would you describe your state of health? Would you say it is: excellent?; very good?; good?; fair?; poor?" - a "don't know" response is also coded. Only current levels of subjective health are known, therefore, its reported levels are

[1] Note that work-related disability was not assessed among those who were age 15, or those older than age 64, in the 1993 and 1994 interviews.

assumed to hold over the subsequent year. This likely reduces estimated effects of subjective health on job separations, but avoids the possibility of reverse causality, where job separation results in negative effects on subjective health (Pavalko and Smith 1999).

Given that subjective health varies with time, levels reported in the 1996 interview (conducted in January, 1997) are used to predict 1997 job separations, and levels reported in the 1997 interview are used to predict 1998 job separations. Respondents who reported relatively poor health in response to the 1996 interview, but good health in response to the 1997 interview would be coded in these analyses as being in poor health from January 1, 1997 to December 31, 1997, and thereafter in good health. Respondents with missing data on the subjective health scale are assigned a score of 2.5, and dummy variables identifying these respondents are included in all analyses of the effects of subjective health.

Control Variables

The following demographic variables are included as controls in all analyses: age; sex; Aboriginal status; immigrant status; mother tongue; parental education (as a measure of socio-economic background); marital status; and other job characteristics (described below). Aboriginal status and immigrant status are both indicated by dichotomous variables. Mother tongue is indicated by three dummy variables: (1) English (omitted/ contrast group); (2) French; and (3) other. Marital status is also indicated by three dummy variables: (1) married during the current year; (2) previously married; and (3) never married (omitted/contrast group). Since each of these variables may influence both health status and job separation, instituting these controls should reduce bias in estimated effects of subjective health status.

Respondent's Earnings—Average hourly wage rate at the end of each reference year is estimated from information about total wages, salaries, self-employment income, and hours worked. Statistics Canada imputed hourly wage rates when data was missing. Wage rate is not available for self-employed respondents. No imputation was done when job information was missing because of the complexity of imputing both job characteristics and wage rate. The minimum coded wage rate is $2 per hour and the maximum is $72 per hour. The natural logarithm of wage rate is used in these analyses. It is important to note that the wage rate data is averaged over a full year, rather than per job spell. Cases missing on the wage rate variable are excluded in these analyses (see sensitivity analysis below).

Other Job Characteristics—Other job characteristics are employment sector, managerial status, and whether the job has a pension. Variables indicating sectors—government sector, self-employed with paid help, and self-employed without paid help—are always included as a group, together with indicators of

marital status, pension, and the hourly wage scale. The analyses contrast employment in the sectors listed above with employment for pay in the private sector. Managerial status is indicated by a single dichotomous variable for each job indicating whether the respondent makes decisions about the work of others.

Sample Design, Weights, and Their Implications

The SLID respondent sample was drawn from randomly selected geographic areas within each province. Probability of selection weights constructed by Statistics Canada adjust the point estimates (i.e. estimates of effect sizes) for the resulting geographic clustering, for non-response selection into the longitudinal panels, and for attrition from those panels[2]. The weighted samples of respondents, therefore, reflect the population at the first wave of each panel (i.e. 1993 for panel 1, and 1996 for panel 2). Sampling weights in these analyses have a mean of 0, and a standard deviation of 1.0 within each age and sex stratified sub-sample[3].

The use of sampling weights does not adjust the standard errors of point estimates. When data are obtained from complex sampling, standard errors of estimates are frequently inaccurate, leading to inaccuracies in the results of hypothesis tests. Adjustments for the sampling design are accomplished in the SLID by the bootstrap method (Chernick, 1999), which involves estimating each regression model 1000 times using sub-samples of the geographic clusters that constitute the total sample. Since each bootstrap sub-sample is composed of a different combination of clusters, Statistics Canada suggests that separate weights (which they have created) should be used in the analysis of each bootstrap sub-sample. The standard deviation of estimates of regression coefficients obtained from analyses of bootstrap sub-samples serves as an asymptotically correct estimate of standard errors.

ANALYSIS METHODS

Estimates of the effects of disability and subjective health on job separations are obtained from the Cox proportional hazards regression procedure, in the Stata statistical package (StataCorp 1999). The Cox procedure estimates maximum likelihood proportional hazards models (Allison 1984), and is appropriate for these multiple failure data. Part-time job spells are excluded from the analyses. Part-time job spells are defined as spells during which the respondent was employed for less than 30 hours per week during more than two-thirds of duration of the job spell.

[2] The bootstrap method for adjusting of standard errors is discussed under the heading "Sensitivity Analyses" on page 7 .

[3] This adjustment involves dividing the weight by its mean within each of the following groups: women in panel 1; men in panel 1; women in panel 2; men in panel 2.

Analyses are stratified by age-cohort, sex and longitudinal panel. Stratification means that baseline hazards of job separation for each reason are permitted to differ for men and women, and within each of four age groups: (1) 16 to 24; (2) age 25-39; (3) age 40-54; and (4) age 55 to 69 last interview. Coefficients are estimates of divergence from baseline hazards for each of the stratification groups (i.e. men under age 25 in panel 1). Tests of sex and age-cohort differences in the effects of subjective health and disability are conducted to determine whether separate coefficients apply for men and women or for different age groups (i.e. whether effects are "non-proportional"). The number of job separations during 1997 and 1998 are generally too small to test whether effects vary by age-cohort, so interactions of disability with age-cohort and sex are estimated using all the available data from 1993-1998[4]. As noted above, information on subjective health is only available from January 1997 onwards. Thus, all five years of data cannot be utilized in evaluating the effects of subjective health.

The criteria for judging statistical significance in survival models proposed by Raftery (1995) are adopted here. The formula used to calculate critical z-values is: $|z| >$ square-root (log n), where "n" equals the number of job separations for each reason. This formula results in the following critical z-values for analyses of each reason for job separation: environmental stress–2.2; caregiving, dismissal, interpersonal conflict, illness–2.3; move, pay–2.4; retirement–2.5; school, other (unspecified)–2.7; other job–2.8; macroeconomic reasons–3.0. These z-values indicate levels of confidence equivalent to a two-tailed alpha level of .05 when the number of failures (i.e. job separations) equals 50.

In comparison to conventional approaches for hypothesis testing, the criteria adopted here are conservative. This conservative approach is appropriate given the large sample size (n=38,102), and the differing numbers of job separations that occur for different reasons. These more conservative criteria explicitly take into account differences in statistical power due to differences in sample sizes. In order to facilitate comparisons to previous studies, effects that are statistically significant at conventional levels (i.e. $z >= 1.96$ without adjustment for design effects) are identified as being of borderline statistical significance.

The data are weighted in all analyses to adjust for variation in probabilities of selection within and between households. Since the bootstrap procedure for adjusting standard errors for design effects is very time-consuming, sensitivity analyses were conducted to compare standard errors derived from the bootstrap to unadjusted standard errors. These analyses (briefly reviewed below) indicated that a separate weight for standard errors in analyses of each outcome (i.e. each reason for job separation) is sufficient to account for most of the design effects. Thus, all

[4] Age-cohort is highly correlated with time at risk (i.e. duration in job) in these data, therefore, analyses of age-cohort differences in effects are synonymous with exploration of non-proportional effects over time.

standard errors in analyses of each outcome are multiplied by the same weight. That weight is an average design effect for analyses of each type of job separation.

Proportional hazards models estimate coefficients by comparing cases that have been at risk for the same amount of time. Thus, the accuracy and interpretability of coefficients depends on the correct specification of time at risk. Specifying time at risk is a critical step in estimating these models.

Specifying Time at risk

Respondents who share the same values on the independent variables, and who are in jobs spells that have lasted the same amount of time, are assumed to share the same risk for job separation. Since the start date for each job defines the onset of risk for job separation, time at risk is defined here as time since beginning each job spell. The risk period ends with the end of each job. Persons who experience multiple job spells during their time in the study are newly at risk at the beginning of each new job spell. Since different respondents have different employment histories, some contribute a greater number of job spells to the analyses compared to others. Problems associated with variation among individuals in number of job spells are handled by linking job spells to individuals within the analyses. Job spells are linked to individuals in these analyses by clustering jobs within individuals.

Job spells for which the start date, end date and duration or hours worked are unknown are excluded from these analyses (n=865 job spells in the total sample between 1993--1998). Also excluded are job spells that involve only unpaid family work (n=283 in the 1993–1998 sample) and part-time spells (n=24,945 in the 1993–1998 sample). In the case of job spells for which start date is missing, but the length of the job spell and end date are known, a start date is imputed as the end date minus the duration. For job spells where information about both the start and the end date are missing, but the date at which the respondent started working for the current employer is available, that date is taken as the start of the job spell. In the analyses reported here, which focus on job separations occurring between 1997–1998 (and for which wage information is available), 7.5 percent of the job spells have start dates which were imputed (n=3,046 unweighted spells). A dummy variable identifying spells with imputed start dates is included in all analyses to purge estimated coefficients of the effects of imputation.

RESULTS

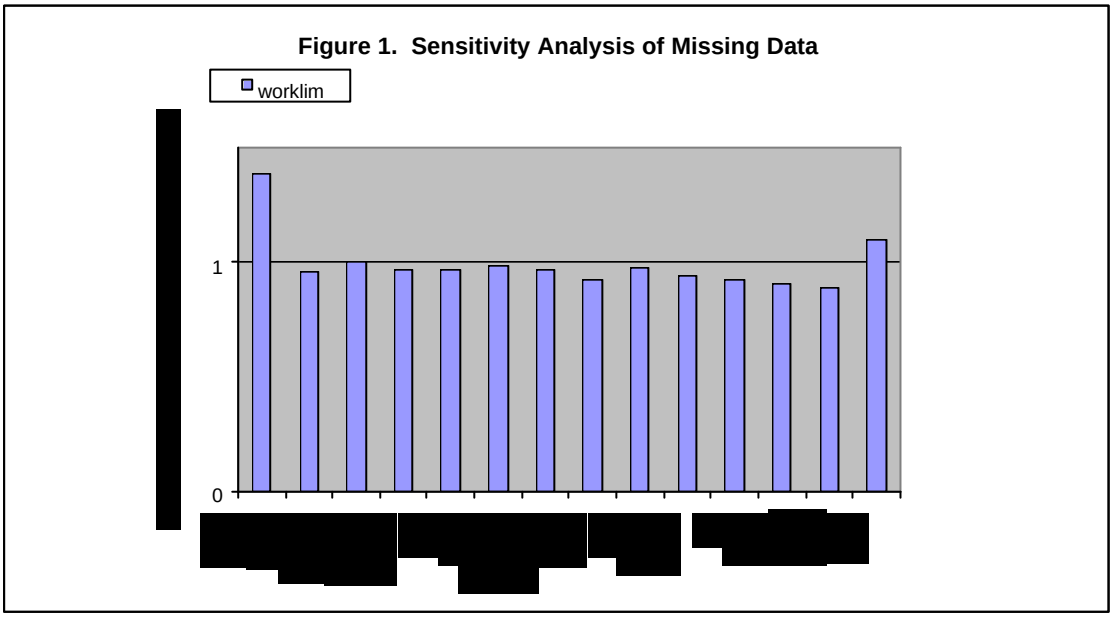
Sensitivity Analyses

Two preliminary sensitivity analyses are conducted. One analysis focuses on the possibility of bias associated with the exclusion of cases that are missing

on income. The other analysis explores the extent to which the bootstrap adjustments for design effects modify standard errors of estimates. This second analysis is of interest because small differences between the bootstrap estimates and the unadjusted estimates would suggest identical conclusions from hypothesis tests. If the bootstrap adjustment does not have an impact on the ultimate conclusions, then the extra effort to produce the bootstrap estimates may be wasted.

Results of the analysis on the effects of exclusion of job spells for which income is missing are illustrated in Figure 1. The figure shows the ratio of two coefficients. The numerator of each ratio is the coefficient for the work-related disability variable when cases for which income is missing are excluded, and the denominator of each ratio is the effect when those cases are not excluded. Values that are higher than 1.0 indicate that exclusion of these job spells results in a downward bias in effects. Values of less than 1.0 indicate an upward bias.

Figure 1. Sensitivity Analysis of Exclusion of Job Spells For Which Income Data is Missing.



Ratio: (Coefficient for work disability among sample missing income) /
(Coefficient for work disability among sample NOT missing income)

Results of a sensitivity analysis for non-work-related disability and subjective health are similar to those presented in Figure 1 for work-related disability. The exclusion of job spells does little to change the effect of work-related disability on any of the outcomes. There is a slight negative bias in the effect of work-related disability on leaving work to care for a friend or relative, but this is an extremely rare occurrence among men, and the unbiased effect is not statistically significant.

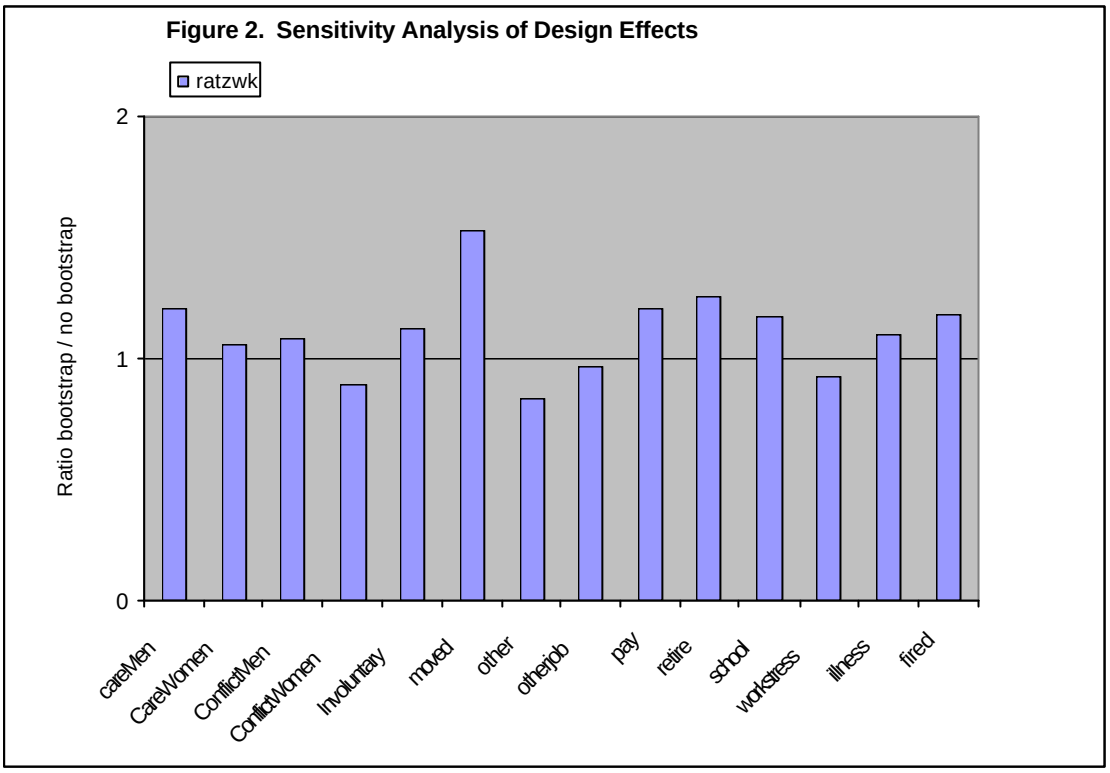
The second sensitivity analysis involves the comparison of standard errors based on the bootstrap method of adjusting for design effects and the robust standard errors reported by the Stata statistical package. The results of these analyses are illustrated in Figure 2, which presents the ratio of robust z-scores calculated by the Cox regression procedure (in the numerator) to z-scores based on standard errors obtained by bootstrapping each estimate 1000 times. Thus, values above 1.0 in this figure indicate the extent to which failure to account for design effects may result in inflated z-scores and subsequent false rejection of the null hypothesis. Values below 1.0 indicate that failure to account for design effects will result in deflated z-scores and failure to detect significant effects[5].

The ratio of robust z-scores given by the regression procedure to z-scores based on standard errors obtained by bootstrapping each estimate 1000 times ranges from between 0.8 and 1.5 in analyses of job separation occurring for the twelve reasons. The average ratio across all outcomes is 1.10. The same range and average is observed for all health predictors. This figure shows that the immense amount of time and effort necessary to adjust for design effects in these analyses translates into only marginal differences in z-scores. Because conventional approaches to hypothesis testing require that one either rejects the null hypothesis or fails to reject it, differences of this sort may translate into judgments of no effect versus a significant effect. The theoretical implications of these adjustments may, therefore, be substantial if criteria for judging statistical significance were to be rigidly adopted[6]. From the perspective of researchers such as myself, who do not adopt such rigid criteria for hypothesis testing (Grusky and Hauser 1984), the extra effort to adjust standard errors for design effects in these analyses using the bootstrap method does not have a substantively important impact on the results.

[5] Because the estimates of effects are constants (i.e. “fixed effects”), the ratio of z-scores equals the ratio of standard errors.

[6] These sensitivity analyses may not extend to other associations that can be studied using the SLID data.

Figure 2. Sensitivity Analysis of Design Effects on Standard Errors of Estimates of Effects of Work Disability Job Separation.



Ratio: (se for effect of work disability obtained from bootstrap) /
(se for effect of work disability in total sample)

Effects of Work-Related Disability

An initial set of analyses focus on the effects of perceiving that ones' disability makes it difficult to change jobs[7]. The hypothesis is that this perception will deter job separation only for the reason of taking a different job. However, this set of analyses revealed only a negative effect on retirement. This effect is of borderline statistical significance in the analysis of all retirements from 1993--1998 (hazard ratio= .32, Z=2.1). Accordingly, the variable identifying people who say that their disability makes it difficult for them to change jobs is excluded in a second round of estimates of the effects of disability on job separations, except in the analyses of retirement[8].

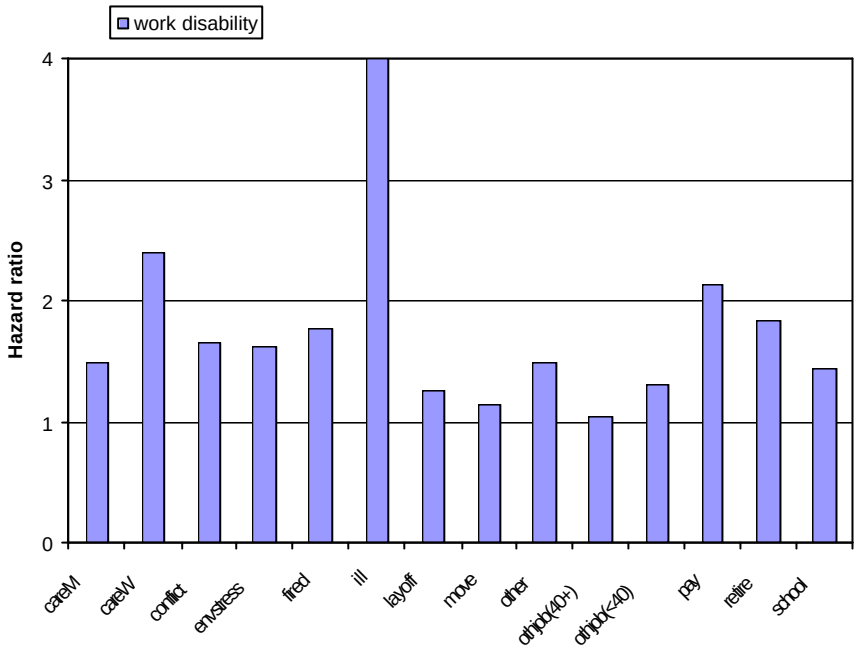
[7] The analyses are based on models that include work-related disability and non-work-related disability.

[8] Including a variable with a negative effect strengthens the positive effects of other variables. The other disability variables have positive effects on retirement.

The magnitude of estimates obtained without controls for job characteristics is very similar to estimates obtained with controls for job characteristics, thus, only the latter are presented here. A graph of the hazard ratios indicating the effects of work-related disability controlling for job characteristics is presented in Figure 3[9]. These are effects estimated from models that include the two indicators of disability - work-related disability, and long-term disability - as well as the subjective health scale and control variables. Inclusion of the subjective health scale has little impact on these estimates. The estimates reported for the effects of work-related disability on job separations during 1997--1998 are very similar to estimates from analyses of separations occurring from the entire period of observation (1993–1998). However, the sample of jobs and job separations occurring from 1993–1998 is much larger, so there is greater statistical power to identify significant effects in the full sample.

[9] An evaluation of interactions between sex and work-related disability revealed statistically significant interaction only on job separation to engage in caregiving

Figure 3. Effects of Work Disability on Job Separation



Work disability has **statistically significant effects** on the following types of job separations (see note a below): caregiving (among women); environmental stress (e.g. noise); dismissal; illness; and poor pay.

Work disability has, at least, **borderline significant effects** (see note b below) on all job separations **except** separations to return to school, to take a different job, and family responsibilities/ caregiving among men.

a. The following are the critical z-values for each reason: environmental stress - 2.2; care giving, dismissal, interpersonal conflict, illness, - 2.3; move, pay - 2.4; , retirement - 2.5; school, other (unspecified) - 2.7; other job - 2.8; macroeconomic reasons - 3.0. These z-values indicate levels of confidence equivalent to a two-tailed alpha level of .05 when there are 50 "failures".
b. Borderline effects are indicated by Z >= 1.96 when standard error is not adjusted for complex sampling design. Effect considered to be borderline.

NOTE: Estimates are from models that include the following variables: non-work disability; work disability; other/unspecified disability; respondent report of fair/poor health; respondents replied "don't know" to self-reported health question; aboriginal status; immigrant status; first language French; first language other non-English; five dummy variables indicating level of parental education and missing data on parental education; four continuous measures of age-cohort; two indicators of marital status (currently married, previously married); and a variable indicating imputation of start date of job spell. Analyses that are not separately conducted by sex are stratified by sex. All analyses are also stratified by panel, and by the following age-cohort groups: 15-24; 25-39; 40-54; 55 and older).Also included are indicators of employment status, employment sector, management position , earnings, and whether the job is associated with a pension. See text for complete description of variables. All analyses exclude job spells if income data is unavailable.

The effects of work-related disability on job separations are remarkably stable over time. The analyses clearly indicate that work-related disability *does not* increase risk for job separation for most reasons. Effects on separation for involuntary reasons/layoff, and separation for other/ miscellaneous reasons are of borderline statistical significance (i.e. these effects meet conventional criteria for significance, especially when standard errors are not adjusted, but not criteria adopted here). Effects on job separations for reasons of dismissal and environmental stress are statistically significant only in analyses of all job spells (1993–1998), but not in the analyses of the smaller number of job spells ongoing between 1997–1998. Effects on separations due to caregiving among women, poor pay, and illness are significant in all analyses. Thus, work-related disability has a significant effect on four of the twelve outcomes investigated, and at least borderline effects on six of the outcomes.

Effects of Non-work-related Disability

Analyses of the effects of non-work-related disability are not presented because these effects are much less stable over time than the effects of work-related disability. Non-work-related disability has significant effects on job separations during 1997–1998 for two of the twelve reasons: (1) separations to take another job; and (2) separations due to conflict. However, from 1993–1996, estimates of the effects of non-work-related disability on job separations for these reasons are in the opposite direction and are non-significant (resulting in no significant effects when all job spells occurring between 1993–1998 are analysed)[10].

An inconsistent pattern of effects of non-work-related disability is also observed for job separations due to caregiving, dismissal and returning to school. The effects of non-work-related disability on almost half of the outcomes vary substantially over time. Additional research is necessary to further explore these variations. In this report I focus on effects that are more stable over time.

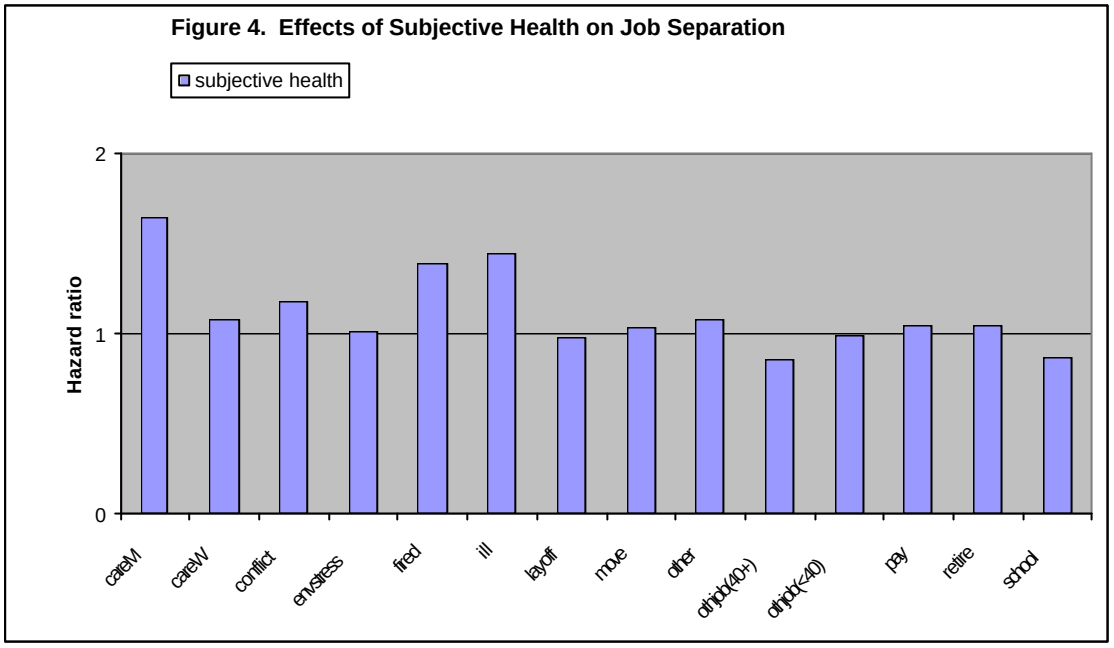
Effects of Subjective Health

A graph of the hazard ratios indicating the effects of subjective health on each type of job separation is presented in Figure 4. The effect of subjective health on job separation due to caregiving varies significantly by sex, so effects are shown separately for men and women. There is also a borderline interaction between age-cohort (divided into those age 40 and older versus younger respondents) and subjective health in predicting leaving a job to take a different job. The interaction suggests that subjective health has no effect on job

[10] Specifically, non-work-related disability is associated with a significantly increased risk of job separation to take a different job during 1997–1998 (hazard ratio=2.1, Z=3.9). Yet, analyses of all job separations from 1993–1996 indicate no effect (hazard ratio=.82, Z=1.2). In contrast, non-work-related disability is associated with a decreased risk of job separation due to conflict during 1997–98 at the borderline level of statistical significance (hazard ratio =.11, Z=2.05), and a non-significant increased risk during 1993–1996 (hazard ratio=2.3, Z=1.82).

separations for this reason among relatively young persons (i.e. those under age 40), but that it reduces the rate of job separations to take a different job among persons in the midlife age range. Because previous research (Smith 1985) found a negative effect of disability on job separation to take a different job, separate estimates for respondents under age 40 and age 40 and over are retained.

Subjective health has a significant positive effect on job separation for three reasons: (1) illness; (2) dismissal; and (3) caregiving among men. Subjective health also has borderline negative effects on leaving a job to take a different job (among respondents age 40 and older) and leaving a job to return to school. Thus, among respondents age 40 and older, there is some evidence that a one unit change in subjective health (rated on a five-point scale) is associated with a 10% reduction in the risk of leaving one job to take another job (hazard ratio=.86, Z=2.13, based on unadjusted standard errors). In contrast, a one unit change in subjective health is associated with more than a 40% increase in risk for dismissal (hazard ratio=1.44, Z=3.2) among respondents of all ages.



Subjective health has **statistically significant effects** on the following types of job separations (see note a below): caregiving (among men), dismissal and illness.

Subjective health has, at least, **borderline significant effects** (see note b below) on job separation due to conflict, to take another job (among men age 40 and older) and to return to school.

a. The following are the critical z-values for each reason: environmental stress - 2.2; care giving, dismissal, interpersonal conflict, illness, - 2.3; move, pay - 2.4; retirement - 2.5; school, other (unspecified) - 2.7; other job - 2.8; macroeconomic reasons - 3.0. These z-values indicate levels of confidence equivalent to a two-tailed alpha level of .05 when there are 50 "failures".

b. Borderline effects are indicated by Z >= 1.96 when standard error is not adjusted for complex sampling design. Effect considered to be borderline.

NOTE: Estimates are from models that include the following variables: non-work disability; work disability; other/unspecified disability; respondent report of fair/poor health; respondents replied "don't know" to self-reported health question; aboriginal status; immigrant status; first language French; first language other non-English; five dummy variables indicating level of parental education and missing data on parental education; four continuous measures of age-cohort; two indicators of marital status (currently married, previously married); and a variable indicating imputation of start date of job spell. Analyses that are not separately conducted by sex are stratified by sex. All analyses are also stratified by panel, and by the following age-cohort groups: 15-24; 25-39; 40-54; 55 and older).Also included are indicators of employment status, employment sector, management position , earnings, and whether the job is associated with a pension. See text for complete description of variables. All analyses exclude job spells if income data is unavailable.

Limitations of the Data and Analyses

Limitations have previously been identified in the measures of health and disability (Bunch and Crawford 1998), and the measures of reasons for job separation (Henretta, Chan, and O'Rand 1992). Although these measures are limited, there is no evidence that these measures are biased. Lack of sophistication in these measures should have simply introduced error into these analyses and thus reduced the chances of detecting significant effects.

One limitation in the measure of reasons for job separation is that only the primary reason for job separation is assessed. Henretta et al. (1992) have argued that current survey questions about reasons for job separation produce responses of limited accuracy, even when multiple reasons for job separation are assessed. Future research should explore the factors that influence inaccuracies in such responses (cf. Cole and Lejeune 1972). However, it is important to note that Henretta et al. argued that inaccuracies in reasons were especially likely for reasons for job separation that were not primary. The analyses reported here are limited to effects of subjective health and disability as contributory causes of job separation for specific primary reasons.

Another set of limitations is analytic. It is possible that estimates of effects are incorrect because the models from which they were derived are incorrect. These analyses did not assess interactions between subjective health or disability with other variables. For instance, some job characteristics may provide resources for resisting illnesses, and others for exacerbating illness, so interactions between job characteristics and subjective health should have been specified. Previous research has not addressed complexities of this sort, and neither does the current report. The purpose of the research presented here is to determine whether subjective health and disability influence the risk of job separations that occur for each of twelve reasons. Having identified such effects, future research can further specify the processes though which these effects come about.

DISCUSSION

The results of all research vary depending on the level of uncertainty that one is willing to accept. This level is embedded in the criteria for identifying statistically significant effects. Coefficients, their standard errors, and z-values for effects presented in Figures 3 and 4 are presented in two appendices, so readers can apply criteria other than those adopted here (Appendix 1 includes effects on separations that can be categorized as voluntary, and Appendix 2 includes effects that can be categorized as involuntary). If conventional criteria for statistical significance are adopted, the major finding of this study is that work-related disability and subjective health have effects on job separation for about half of the reasons investigated.

The lack of statistically significant effects of subjective health and work disability on specific types of job separation is of interest because previous research which combined all job separations, indirectly suggested that all separations would be affected by subjective health and disability (Hum and Simpson 1996; Mackenbach 1999; Mutchler, Burr, Massagli, and Pienta 1999; van de Mheen, Stronks, Schrijvers). Effects are thus much more specific than most previous research has suggested. I first address results that meet the criteria for statistical significance outlined above. Effects that meet those criteria clearly indicate stable effects. I then address effects that are less certain, but which meet conventional criteria for statistical significance, and which have been supported by previous research.

Job Separation Due to Disability, Illness or Injury

The largest effects of both disability and subjective health are on job separations due to disability, illness or injury. Unfortunately, the categorization of reasons for job separations in the SLID does not distinguish between separations that are attributed to illness and those that are attributed to injury or disability. Thus, it is impossible to determine whether disability has an effect on job separations that are directly attributed to the disability, or if people who are disabled are at increased risk of leaving jobs because they are in poor subjective health. This limitation of the SLID also makes it impossible to differentiate the effects of subjective health (discussed below) on job separations due to disability from effects of subjective health illness. It would have been useful for the SLID to differentiate illness from disability as reasons for job separation, because these reasons differ in their relation to the reasoning that may motivate action. For instance, people who are ill or disabled may decide to leave a job before their disability leads to noticeably impaired performance, or has negative repercussions. In contrast, an effect of disability on job separation due to illness would suggest that people with disabilities leave jobs because they do not feel well enough to work.

Research on the reasoning processes involved with job separation is necessary to evaluate the role of reasoned action, and other complex processes involving self-image or identity. One simple modification of the SLID survey that would help researchers to investigate the processes involved in job separation would be to collect information about intended destination states of respondents who report leaving a job due to illness or disability. Information should also be collected about how long people expect it will take to reach the intended destination. If such data were to be collected then intended destination states and duration to those states could than be compared to actual destinations and durations. It would be easy to modify future waves of the SLID to collect this information. Respondents who report leaving a job due to illness or disability could be asked a series of questions about factors that influenced their job separation, and what they intended to do after leaving the job. I also suggest that

future waves of the SLID separately code those who report that the job ended due to illness and those who report the job ended due to disability.

Dismissal

Both work-related disability and subjective health increase the risk of being dismissed from one's job. This suggests that employers frequently fire workers who have difficulty performing in a job, and that such firings are relatively common among persons who self-identify as having a work-related disability. If workers who recognize that they have a work-related disability are at increased risk of being fired, it may be because few options are made available for them to modify the job, or help them to perform the job well in spite of the disability. Workplace policies to address such issues may help reduce the effect of work-related disability on dismissal.

One question that cannot be answered with these data is whether such dismissals involve relatively rationalized yet de-humanising processes, such as the "culling" of the ill or the disabled from the labour force. Another question that cannot be answered is whether factors leading up to dismissal caused disability or reductions in subjective health. In some cases, tensions leading to the dismissal may have started before the health problems began. Even though these analyses are of longitudinal data, anticipation of the job separation may have had an effect on subjective health. Thus, interpretation of the effects of subjective health on involuntary job separations should be interpreted with caution. However, difficulties in determining causal order do not undermine the finding that subjective health predicts dismissal. This finding has not been explored in other samples.

Job Separation Due to Caregiving

The effect of work-related disability and subjective health on leaving a job to provide caregiving or other family/ personal responsibilities varies by sex. Almost half of the job separations among women involved caregiving for children, while the other half (n=118 unweighted) involved job separations for "other family/personal responsibilities". Only two job separations am88ong men, however, involved caregiving for children, while the rest (unweighted n=59) involved "other personal family responsibilities". Thus, the observed sex difference in these analyses may partially be due to the conflation of caregiving with "other personal/family responsibilities"[11].

Work-related disability increases the risk of job separation to engage in caregiving, but only among women. This effect is consistent with the idea that work-related disability may contribute a push, which sometimes combines with a normative pull, for women to engage in caregiving and other family

[11] It was necessary to combine these outcomes because there were too few cases of caregiving alone to analyze.

responsibilities. Women who have a disability may find it especially difficult to remain at work while caregiving, especially when the care is for children. The pull of family/ personal responsibilities among men who have work-related disabilities may be too weak to motivate them to leave a job for this reason.

Yet, subjective health predicts job separation to engage in family/ personal responsibilities among men, but not women. Among women, subjective health increases risk of job separation for only these two reasons: (1) due to illness; and (2) due to dismissal. The lack of an effect of subjective health on voluntary job separations, such as separations to engage in caregiving, may be explained by many different factors. For instance, the problems captured by subjective health scales are relatively common in the lives of women (Johnson and Wolinsky 1994). Thus, changes in subjective health ratings may represent less discontinuities in the lives of women than men, and therefore have a weaker effect on job transitions. Additionally, among women who regularly feel in poor health, the tasks involved in full-time caregiving (mostly for children) may be perceived as less attractive than work.

In contrast, among men who are in poor health, alternative family and personal tasks may be perceived as more attractive than work. It is difficult to identify explanations for why subjective health among men increases the rate of job separation to engage in personal/family responsibilities. The answers may be tied to the precise responsibilities undertaken by this small group of men when they leave a job due to illness. More information on this unique group is needed.

One obvious policy implication of these results is that additional resources should be provided to ill and disabled workers who are engaged in caregiving. Policies that increase such resources could help ill workers to recover, and help disabled workers to more effectively cope, and thus avoid declines that make it difficult to simultaneously engage both family and work roles.

Separation Due to Poor Pay or Environmental Stress

The only other effects that are deemed to be statistically significant are the effects of work-related disability on job separations due to poor pay and environmental stress. Since an effect of disability on job separations due to poor pay remains after hourly wages are controlled, the explanation is not that people with a work-related disability are paid less than those with no disability. It may be that disability increases risk of job separations due to poor pay because disability increases the costs of working, and these costs may not be sufficiently compensated by jobs that pay poorly. Cost-benefit calculations may also explain the effect of disability on job separation due to environmental stress, as exposure to environmental stressors may be considered a cost of working. However, it is also possible that people with disability leave jobs due to environmental stress because they are especially likely to obtain jobs in stressful environments, or because they are more likely to perceive conditions as environmentally stressful

than workers without disability. For instance, people with disability may be especially likely to perceive conditions of the workplace as stressful if workplaces are not fully accessible.

It is important to note that the effects of disability on job separations due to environmental stress, poor pay, and all of the other reasons noted above remain after subjective health is controlled. Thus, the decision to leave a job for these reasons seems to be influenced by how well one can perform the job, not simply by how well one feels while working. Assuming it takes increased effort for someone with a work-related disability to perform a job, this result suggests that increased effort does not necessarily translate into poor subjective health.

Retirement

Prior studies on the effects of health and disability on specific reasons for job separation have primarily focused on retirement (see, for example, Henretta, Chan, and O'Rand 1992). Though the effects presented in the figures and graphs are not statistically significant, the analyses of the SLID data are consistent with previous research. Zero-order effects of disability on retirement (i.e. effects without controls for job characteristics, not shown) are significant at the conventional levels adopted in previous studies (Hz=2.1, Z=2.0 in the sample of all job spells from 1993 -1998, with no adjustment for design effects).

One contribution of the current analyses is to show that the effects on retirement are among the weakest of all effects of disability on job separation — work-related disability increases the rate of job separation for other reasons investigated much more than it affects retirement. Yet, the effect of work-related disability on retirement is also uniquely informative.

An effect of work-related disability on retirement suggests that rates of relatively early retirement will be reduced as rates of disability among the population of retirement age decreases. Such a decrease in the rate of early retirement could have implications for the planning of pension programs, staffing within corporations, and government programs targeted towards retired workers.

Leaving One Job to Take Another Job

The negative effect of subjective health on job separation to take a different job, found in this study, is broadly consistent with the results of Smith's (1985) study of U.S. men. However, that study found focused on the effects of disability alone, rather than subjective health. Disability was found to reduce the rate of leaving one job to take a different job. The lack of an effect of work-related disability on job separation to take a different job found in the current study, however, is inconsistent with Smith's results. There are many reasons why this effect was not exactly reproduced here. The sample analysed by Smith was of U.S. men who were household heads between 1969 and 1973, and who were

initially in the labour force. Smith found longstanding disability to have a negative effect on mobility into a new job, and for current disability to have no effect. Most of the recent disabilities in that study were found to be of short duration. In contrast, the effect of any ongoing work-related disability was evaluated in the current report, whether the disability was longstanding, or recent. Most of the work-related disabilities among the SLID respondents were longstanding—beginning before the year in which job-separation occurred—so the failure to distinguish between recent and longstanding disabilities is not a plausible explanation for the different results of the two studies. The difference is more likely due to differences in the measures of disability, the populations surveyed, and temporal changes in the relationship between disability and job separation to take a different job.

The results of the analyses presented here are clear—Canadians who report poor subjective health tend to be at decreased risk of leaving one job for another. Future studies should determine whether this effect contributes to a more general retardation of socio-economic and labour force mobility among people with poor subjective health.

Layoff and Other Involuntary Separations

There is borderline evidence that work-related disability increases the risk for involuntary separations (i.e. layoff & seasonal work). An effect on layoff could occur if there is discrimination against disabled workers, or if the system of seniority that governs lay-offs is stacked against disabled workers. More fine-grained, micro-level data on employee-employer relations is necessary if these effects are to be explored.

Temporal Variations in Effects of Non-work-related Disability

Effects of non-work-related disability on job separation may vary over time in a complex, but systematic, pattern that is difficult to detect in the absence of theory, or interpret in a post hoc manner. One idea that should be explored is that some people with non-work-related disability are people who have adapted, within the work setting, to an impairment that is associated with disability in other settings. Most people with a non-work-related disability who have been in a job for some time may have adapted to their disability. Yet non-work-related disability may also increase risk for the development of a work-related disability among a subset of persons. Thus, unstable effects of non-work-related disability on job separation may be due to some persons shifting from non-work-related disability to work-related disability, and others shifting from non-work-related disability to job separation.

CONCLUSIONS

As the demands of jobs change and norms around alternatives to work such as retirement and caregiving change, the relationship of disability and subjective health to job separation may also change. Thus, the results presented in this report may be unique to Canada during the late twentieth century.

Both disability and subjective health will continue to contribute pressure to leave jobs in combination with factors such as poor pay, societal norms regarding caregiving and opportunities for retirement. Alternatively, subjective health may contribute to inertia, deterring one from seeking out or taking a different job if the illness captured by subjective measures of health are typically associated with a period of uncertainty that interferes with the pursuit of other life goals and plans.

An explanation for these effects that emphasizes goals and plans necessarily implies that the effects of disability and subjective health are mediated by the rational choices of workers. In some cases this may be true, but in other cases, explanations that emphasize rational choice may be too narrow. People who leave work because they are having difficulty performing a job may be doing so to preserve a valued identity, such as the identity of being an effective worker. Reasoned action may be embedded in such identity processes.

Effects of subjective health on voluntary separations are much less pervasive than effects of work-related disability, yet these effects are complex. The results presented suggest that subjective health may reduce the risk of some types of positive job separations (to take a different job, and to attend school) and increase the risk for other types of job separation. Though poor subjective health influences transitions out of jobs, it does not seem to facilitate transitions into situations that are normative, or desired.

Both work-related disability and subjective health affect one type of involuntary job separation - dismissal. These effects suggest that employers fire workers in poor subjective health and workers who have a work-related disability precisely because those workers are having difficulties performing their jobs. The estimated effects of poor subjective health and disability do not change after the addition of controls for type of job. Thus, macroeconomic processes, such as selection of ill and disabled persons into sectors with high rates of layoff, do not seem to strongly contribute to the general effects of poor subjective health and disability on involuntary job separations. It is important to note the lack of effects on layoff, because layoff and related involuntary separations are by far the most common types of involuntary separations.

Finally, this research suggests that it would be valuable to pay more attention to the relationship between causes of life course transitions and the reasons for those transitions. Subjective health and disability may causally

contribute to life course transitions, such as job separations, without being considered a reason. Qualitative studies may find much about how the life course is socially constructed by building on the links identified here between causes of job separation and reasons for separation.

Appendix 1. Effects of Work Disability & Subjective Health on "Voluntary" Separations

	Analyses of Separations Occurring From 1997-1998				Analyses of Separations Occurring From 1993-1998			
Reason For Separation	b	se	hazard ratio	z-value	b	se	hazard ratio	z-value
Caregiving (Men)								
work disability	0.40	0.78	1.49	0.51	0.19	0.46	1.21	0.42
subjective health	0.50	0.16	1.64	3.11 *				
Caregiving (Women)								
work disability	0.87	0.32	2.39	2.76 *	0.59	0.23	1.81	2.58 *
subjective health	0.08	0.10	1.08	0.75				
Residential Move								
work disability	0.13	0.38	1.14	0.38	-0.34	0.24	0.71	-1.41
subjective health	0.03	0.09	1.03	0.09				
Other Job (age >= 40)								
work disability	0.03	0.32	1.03	0.09	-0.17	0.21	0.85	-0.80
subjective health	-0.15	0.08	0.86	-1.97 +				
Other Job (age < 40)								
work disability	0.27	0.16	1.31	1.63	0.06	0.12	1.07	0.53
subjective health	0.00	0.04	1.00	0.10				
Poor Pay								
work disability	0.76	0.25	2.13	2.98 *	0.68	0.22	1.98	3.12 *
subjective health	0.05	0.08	1.05	0.59				
Retirement								
work disability	0.61	0.55	1.84	1.11	0.51	0.42	1.67	1.23
subjective health	0.05	0.11	1.05	0.48				
Return to School								
work disability	0.36	0.36	1.43	1.00	-0.07	0.22	0.94	-0.31
subjective health	-0.13	0.06	0.88	2.38 +				

Appendix 2. Effects of Work Disability & Subjective Health on "Involuntary" Separations

Reason For Separation	Analyses of Separations Occurring From 1997-1998				Analyses of Separations Occurring From 1993-1998			
	b	se	hazard ratio	z-value	b	se	hazard ratio	z-value
Illness								
work disability	2.43	0.21	11.35	11.45 *	2.35	0.13	10.49	18.06 *
subjective health	0.37	0.11	1.45	3.48 *				
Dismissal (Fired)								
work disability	0.57	0.37	1.76	1.52	0.66	0.22	1.94	3.01 *
subjective health	0.33	0.11	1.39	2.90 *				
Layoff/ Macroeconomic								
work disability	0.23	0.10	1.26	2.33 +	0.05	0.07	1.05	0.66
subjective health	-0.02	0.03	0.98	0.76				
Conflict at Work								
work disability	0.50	0.40	1.65	1.24	0.26	0.24	1.30	1.07
subjective health	0.16	0.11	1.18	1.51				
Environmental Stress								
work disability	0.49	0.34	1.63	1.44	0.87	0.31	2.38	2.84 *
subjective health	0.02	0.11	1.02	0.16				
Other Unspecified								
work disability	0.39	0.22	1.48	1.81 +	0.21	0.14	1.23	1.52
subjective health	0.08	0.06	1.08	1.17				

REFERENCES

Albrecht, Gary. 1992. "The social experience of disability." in *Social Problems*, edited by C. Calhoun and G. Ritzer. New York: McGraw-Hill.

Allison, Paul D. 1984. *Event History Analysis.* Beverly Hills: Sage.

Bunch, Mary and Cameron Crawford. 1998. "Persons with Disabilities: Literature Review of the Factors Affecting Employment and Labour Force Transitions." Human Resources Development Canada.

Charmaz, Kathy. 1995. "The Body, Identity and Self: Adapting to Impairment." *The Sociological Quarterly* 36:657-680.

Chernick, Michael R. 1999. *Bootstrap methods : a practitioner's guide*. New York: Wiley.

Cole, Stephen and Robert Lejeune. 1972. "Illness and the legitimation of failure." *American Sociological Review* 37:347-356.

Crawford, Cameron. 1998. "Persons with Disabilities: Disability-Status Transitions and Labour Force-Activity Transitions Analysis Based on the Survey of Labour and Income Dynamics." Human Resources Development Canada, Hull, Quebec, Canada.

George, Linda K. 1999. "Life Course Perspectives on Mental Health." Pp. 565-584 in *Handbook of the Sociology of Mental Health*, edited by C. S. Aneshensel and J. C. Phelan. New York: Kluwer.

Grusky, D. B. & Hauser, R. M. (1984) Comparitive social mobility revisited: Models of convergence and divergence in 16 countries, *American Sociological Review*, 49, 19-38.

Hayward, Mark D., Samantha Friedman, and Hsinmu Chen. 1998. "Career trajectories and older men's retirement." *Journals of Gerontology: Social Science* 53B:S91-S103.

Henretta, John C., Christopher G. Chan, & Angela M. O'Rand. 1992. "Retirement reason versus retirement process: Examining the reasons for retirement typology." *Journal of Gerontology* 47:S1-S7.

Hum, Derek and Wayne Simpson. 1996. "Canadians with disabilities and the labour market." *Canadian Public Policy - Analyse de Politiques* XXII:285-297.

Johnson, R.J. and F. D. Wolinsky. 1994. “Gender, race, and health: the structure of health status among older adults.” *Gerontologist* 34:24-35.

Loprest, Pamela J., Kalman Rupp, and Steven H. Sandell. 1995. “Gender, Disabilities and Employment in the Health and Retirement Study.” *Journal of Human Resources* Supplement :S293-S311.

Mutchler, Jan E., Jeffrey A. Burr, Michael P. Massagli, and Amy Pienta. 1999. “Work transitions and health in later life.” *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences* 5:S252-S261.

Pavalko, Eliza K. and Brad Smith. 1999. “The rhythm of work: Health effects of women's work dynamics.” *Social Forces* 77:1141-1162.

Raftery, Adrian E. 1995. “Baysian Model Selection in Social Research.” in *Sociological Methodology v.25*, edited by P. V. Marsden. Washington D.C.: American Sociological Association.

Smith, Ken R. 1985. “Work Life and Health as Competing Careers: An Event-History Analysis.” in *Life Course Dynamics: Transitions and Trajectories*, edited by J. G.H. Elder. Ithaca, NY: Cornell.

StataCorp. 1999. “STATA Statistical Software.” College Station, Texas: Stata Press.

van de Mheen, H., K. Stronks, C. T. M. Schrijvers, and J. P. Mackenbach. 1999. “The influence of adult ill health on occupational class mobility and mobility out of and into employment in the Netherlands.” *Social Science and Medicine* 49:509-518.