Overqualification and Risk of All-cause and Cardiovascular Mortality: Evidence From the Canadian Census Mortality Follow-up Study (1991-2001)

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ABSTRACT

Objectives: To evaluate whether education, occupation and overqualification (defined as having a level of educational attainment higher than the skill level required for an occupation) are associated with risk of all-cause and cardiovascular disease (CVD) mortality.

Method: A prospective study of the association between overqualification and all-cause and CVD mortality was undertaken in the Canadian Census Mortality Follow-up study (1991-2001), a 15% sample of Canadian adults who completed the 1991 census long-form questionnaire (n=1,091,800, 39% women, baseline age 35-64 years). Education, occupation and all confounders (age, income adequacy, marital status, years since immigration, ethnicity, Aboriginal origins, province of residence, and community size) were measured at study baseline, with subsequent follow-up for mortality.

Results: Sex-specific age-adjusted Cox proportional hazards models showed an inverse association between education and all-cause mortality (women: hazard ratio (HR)=1.55, 95% confidence interval (CI): 1.45-1.66; men: HR=1.94, 95% CI: 1.87-2.01, for <high school vs. university degree). In addition, age-adjusted occupation was inversely associated with all-cause mortality (women: HR=1.42, 95% CI: 1.32-1.53; men: HR=1.86, 95% CI: 1.78-1.95, for unskilled vs. professional occupation). Similar social gradients were observed for CVD mortality. Overqualification was not associated with risk of all-cause or CVD mortality, demonstrated by non-statistically significant interaction terms between education and occupation.

Conclusions: Increasingly, Canadians are pursuing high levels of education; however, the occupational distribution in the labour market has not changed to the same extent. Results from this study suggest that the resulting increase in workers who are overqualified for their occupation will not lead to increased all-cause or CVD mortality.

Key words: Canada/epidemiology; socioeconomic factors; mortality; cardiovascular diseases

La traduction du résumé se trouve à la fin de l'article.

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There is strong evidence demonstrating an inverse association between socio-economic position (SEP) and mortality.[1] In epidemiologic studies, SEP is typically measured as education, occupation or income.[2] These indicators attempt to measure the underlying construct of SEP, and consequently a degree of overlap exists between them. However, these indicators often reflect a specific period in the life-course and measure different dimensions of SEP, and therefore should not be used interchangeably.[2-4] Studies have attempted to understand the relationship between different SEP measures and health.[5,6] Examining the effect of multiple SEP indicators in the same study, both independently and simultaneously, can provide insight into which SEP measures are the strongest predictors of mortality.

There has been a longstanding interest in social epidemiology concerning the hypothesis that status inconsistency (i.e., having contradictory SEP measures) is associated with adverse health effects. A proposed pathway linking status inconsistency and poor health is via "goal-striving stress", where stress results from an individual's social class achievements (e.g., occupation) not meeting their aspirations (e.g., education).[7] This stress may result in neuroendocrine and immune system disruption and excess cortisol and sympathetic hormone release, which may elevate the risk of mortality, in particular from cardiovascular-related events.[8]

Overqualification – where educational attainment is higher than occupational skill requirements – is a status inconsistency measure of increasing relevance. In 2008, 28% of Canadians in non-management occupations were overqualified, with higher rates among immigrant[9] and younger workers.[10] While post-secondary educational attainment in Canada is increasing rapidly, the occupational skill level distribution of the labour market has not changed to the same extent.[10] These trends suggest that the prevalence of overqualification will likely continue to rise, underscoring the importance of understanding the relationship between overqualification and health.

There are mixed results on the association between overqualification and health, with some studies finding an association with coronary heart disease (CHD),[11] all-cause and CHD mortality,[12] declines in self-rated health[13] and adverse emotional outcomes.[14] However, a more recent study found no association between overqualification and cardiovascular disease (CVD).[15]

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Comparison between studies has been hindered by the use of conflicting methodologies and multiple definitions of overqualification. This approach has led to mixed results, even within the same data source.[16,17] While methodological debate continues,[18] a clear articulation of which types of inconsistencies are being tested and how these methodologies distinguish the effects of SEP and status inconsistencies will help clarify this research area.

Recent studies examining the association between overqualification and mortality have reported mixed results. The Canadian Census Mortality Follow-up Study allows for a more meaningful measure of qualification status as occupation is classified in terms of minimum skill requirements, a measure that can be directly linked to an individual's level of education attainment. Consequently, the objective of this study was to determine whether education, occupation and overqualification increase risk of all-cause and CVD mortality.

METHODS

Study sample

The Canadian Census Mortality Follow-up Study is a nationally representative population-based cohort of non-institutionalized Canadians followed for mortality from 1991 to 2001. The cohort encompasses a 15% sample of the adult population of Canada over the age of 25 who completed the 1991 census long-form questionnaire (N=2,735,152). Record linkage methods included probabilistic linkage to income tax records. Linkage outcomes indicated that respondents who could not be matched to income tax records were more likely to be female, older than age 65, unmarried, or of lower income or educational attainment.[18] Baseline data collected in the census long-form questionnaire (1991) include data on various socio-demographic, family, household and neighbourhood characteristics of each respondent. Mortality was ascertained by linking census data to the Canadian Mortality Database, identifying over 260,000 deaths in this sample.[19] Statistics Canada estimates that 97% of all deaths to study subjects were ascertained in the Canadian Census Mortality Follow-up Study.[19]

For the purpose of this study, we restricted the original sample to respondents between 35-64 years of age at study baseline, working over 25 hours per week. These inclusion criteria are designed to account for potential bias resulting from younger individuals being more likely to be overqualified and less likely to die during the 10-year follow-up period. Similarly, it is difficult to accurately estimate occupational status in individuals over 64 years of age, and thus their exposure to overqualification as they approach and begin retirement. Therefore, it was assured that individuals had the opportunity to reach a "status-defining" occupation and are representative of labour force participants, whose exposure to overqualification was hypothesized to result in inequalities in mortality. The final sample consisted of 1,091,800 subjects (421,600 women and 670,200 men).

Exposure measurement

Educational Attainment

Education was classified into four groups using academic achievement. These included: <high school graduation, high school graduation (including trades certificate), post-secondary certificate or diploma, and university bachelor's degree or higher.

Occupation Skill Requirements

Occupation was categorized using the National Occupational Classification (NOC) system.[17] The NOC, developed by Human Resources and Development Canada, groups occupations based on minimum training and/or education required to work in an occupation. Occupations were classified into five categories: requiring no education (unskilled), requiring secondary school education (semi-skilled), requiring post-secondary education below bachelors level (technical/skilled/supervisory), managers, and requiring bachelors education or higher (professional).

Overqualification

Overqualification was defined as a mismatch between educational attainment and occupational achievement. To examine the health consequences of overqualification – above the health effects of occupation alone – we specified statistical interactions between education and occupation. Here, we examined whether the mortality risk associated with a given occupation differs depending on the respondent's level of education. We hypothesized that the effects of occupation on mortality would differ by level of education, being greater in overqualified respondents.

Outcome ascertainment

All-cause and CVD mortality were examined in this study. Underlying cause and date of death were ascertained from the Canadian Mortality Database. CVD mortality was classified using the World Health Organization's International Classification of Diseases, Ninth Revision (ICD-9)[20] for deaths occurring from 1991 through 1999 and Tenth Revision (ICD-10)[21] for deaths occurring in 2000 or 2001.

Confounders

Confounders included age, income adequacy, marital status, years since immigration, ethnicity, Aboriginal origins, province of residence and community size. Income adequacy, divided into quintiles, was calculated as the ratio of total family income to the Statistics Canada low income cut-off (LICO) for family and community size.[22]

Statistical analyses

Sex-specific Cox proportional hazards models were used to calculate hazard ratios (HR) and 95% confidence intervals (95% CI) to test the association between education and occupation (independently) on risk of all-cause and CVD mortality. Follow-up was calculated from study baseline (census day) until date of death or end of study (December 31, 2001), whichever comes first. All analyses were adjusted for age, with a subsequent model adjusting for education or occupation (when not the exposure of interest) and a limited set of possible confounders (age, income adequacy, marital status, years since immigration, ethnicity, Aboriginal origins, province of residence and community size). To examine the effect of overqualification on all-cause and CVD mortality, we evaluated two models: 1) an interaction term for education and occupation in models that simultaneously adjusted for both variables, and 2) a categorical variable specifying a respondent as overqualified, qualified or underqualified. Analyses were conducted using SAS version 9.1 (SAS Institute, Cary, NC).

The Canadian Census Mortality Follow-up Study was approved by the Statistics Canada Policy Committee after consultations with

Table 1. Baseline Characteristics According to Measure of Status Consistency of Non-institutionalized Men and Women Aged 35-64, Canadian Census Mortality Follow-up Study, Canada (1991-2001)

	Men					Women				
	n	Deaths	Qualified (%)	Over-qualified (%)	Under-qualified (%)	n	Deaths	Qualified (%)	Over-qualified (%)	Under-qualified (%)
Total Sample	670,200	34,750	37	11	52	421,600	11,168	41	14	46
Education										
University degree	118,400	3347	71	29	N/A*	62,200	1039	71	29	N/A*
Postsecondary diploma	87,700	3113	50	24	26	86,600	1939	35	32	33
Secondary graduation	260,900	12,686	32	8	60	157,200	3954	46	7	47
<secondary graduation	203,300	15,604	17	N/A*	83	115,600	4236	22	N/A*	78
Occupation skill requirements										
Professional	91,800	3029	69	N/A*	31	73,800	1458	52	N/A*	48
Management	113,100	4705	37	13	50	38,400	937	35	13	52
Technical, skilled, supervisory	235,600	12,225	16	6	78	121,300	3226	23	7	69
Semi-skilled	169,500	10,147	42	13	46	148,900	4164	44	20	36
Unskilled	60,200	4644	58	42	N/A*	39,300	1383	63	36	N/A*
Age group										
35-39	169,000	2702	39	14	46	115,500	1152	43	16	40
40-44	156,500	3833	40	13	47	109,000	1735	43	14	43
45-49	122,400	4982	38	11	52	81,300	1999	40	13	47
50-54	95,300	6482	34	9	57	56,200	2139	38	11	51
55-59	76,400	8229	32	8	60	38,400	2285	36	11	53
60-64	50,600	8522	31	8	61	21,300	1858	36	11	54
Income adequacy quintile										
5: Highest	198,800	9649	42	10	48	130,700	3160	44	12	44
4	172,800	8620	36	11	53	107,500	2660	40	13	47
3	144,400	7450	35	12	53	85,300	2275	39	14	46
2	100,400	5561	33	13	53	60,900	1830	38	16	46
1: Lowest	53,800	3470	32	14	54	37,200	1243	37	17	45
Marital status										
Married	545,400	26,410	37	11	53	289,900	6793	40	13	47
Common-law	38,400	1831	37	11	52	26,500	569	41	13	46
Widowed	4400	622	33	9	58	14,000	835	38	11	51
Separated	13,700	917	37	12	51	14,900	426	41	14	45
Divorced	26,300	2048	37	13	50	38,700	1321	41	14	44
Never married	42,100	2922	42	17	41	37,700	1224	46	17	37
Years since immigration										
Non-immigrant	512,400	27,635	36	10	53	322,300	8955	41	12	47
Immigrated at age <14	24,300	731	40	13	47	15,700	304	42	12	45
0-5 years	13,700	296	40	28	32	8900	120	40	30	30
6-10 years	10,500	271	42	22	36	7200	118	41	26	33
11-20 years	41,200	1265	41	18	41	29,100	447	42	22	36
21+ years	65,600	4507	36	9	54	37,000	1197	40	13	47
Non-permanent resident	2500	45	40	25	35	1500	27	40	30	30
Ethnicity										
Not a visible minority	618,100	33,139	36	10	53	382,900	10,506	41	13	47
Black	9000	305	42	17	41	8400	185	42	18	41
East Asian	16,800	531	41	20	39	12,200	222	41	21	38
Latin American	1900	39	38	28	34	1400	15	42	29	29
South Asian	12,200	376	43	24	32	7300	99	41	27	32
South-east Asian/Pacific	5400	150	39	34	28	6200	88	38	36	26
South-west Asian or Arab	6000	177	44	24	33	2700	41	43	23	34
Multiple visible minority	800	33	41	19	39	700	12	40	25	35
Aboriginal origins										
No Aboriginal origins	650,400	33,576	37	11	52	407,100	10,680	41	14	45
Not registered Indian/band member	11,200	568	34	11	56	7600	221	38	13	49
Registered Indian/band member	8600	606	32	10	58	6900	267	35	12	53
Province										
Alberta	62,600	2924	36	11	52	39,100	1027	41	15	45
British Columbia	80,900	3717	37	13	50	48,600	1284	41	17	42
Manitoba	27,500	1603	33	10	57	17,200	532	39	13	48
New Brunswick	16,700	857	35	9	56	10,000	231	42	13	45
Newfoundland	13,300	675	34	7	59	8100	199	40	10	50
Northwest Territories	4700	216	36	11	53	3100	73	40	12	48
Nova Scotia	20,700	1092	35	11	54	12,200	337	41	14	45
Ontario	247,800	13,027	38	12	50	162,600	4526	41	14	45
Prince Edward Island	3100	180	33	9	57	2100	56	40	15	44
Quebec	167,400	9138	38	11	51	103,100	2475	41	12	48
Saskatchewan	23,900	1262	30	9	61	14,500	397	39	13	49
Yukon	1500	59	37	14	49	1000	31	39	22	39
Community size										
≥1,000,000	207,400	10,469	39	14	47	143,600	3681	42	15	43
500,000-999,999	109,200	5366	41	12	47	72,400	1892	43	14	43
100,000-499,999	99,900	5057	38	11	51	61,800	1701	42	14	44
10,000-99,999	93,300	4943	36	10	54	55,500	1470	40	13	47
<10,000 with metropolitan influence	151,200	8317	31	8	61	83,300	2254	37	12	51
<10,000 no metropolitan influence	9200	598	28	8	64	4900	170	33	10	57

* N/A or not applicable refers to situations where the qualification status consistency category is not possible. For example, it is impossible for individuals with the highest level of education to be underqualified for their occupation, or individuals with the lowest level of education to be overqualified for their occupation.

the Statistics Canada Confidentiality and Legislation Committee, the Data Access and Control Services Division, and the Federal Privacy Commissioner. The protocol for this research was reviewed and approved by the Health Sciences Research Ethics Board of the University of Toronto.

RESULTS

Table 1 describes the sex-specific distribution of baseline covariates by qualification status. In both men and women, younger workers were more likely to be overqualified, while older workers were more likely to be underqualified for their occupation. Further, men and women with no visible minority status were less likely to be overqualified and more likely to be underqualified compared to visible minority groups.

Age-adjusted Cox proportional hazards models showed a graded inverse association between both education and occupation and all-cause mortality in men (education: HR=1.94, 95% CI: 1.87-2.01 for <high school graduation vs. university degree; occupation: HR=1.86, 95% CI: 1.78-1.95 for unskilled vs. professional occupation) (Table 2). In women, education and occupation were inversely associated with all-cause mortality in age-adjusted models (education; HR=1.55, 95% CI: 1.45-1.66 for <high school graduation vs. university degree; occupation: HR=1.42, 95% CI: 1.32-1.53 for unskilled vs. professional occupation). In both men and women, these associations were attenuated and remained statistically significant in fully-adjusted models.

Age-adjusted Cox proportional hazards models demonstrated inverse associations between both education and occupation with CVD mortality in men (education; HR=2.01, 95% CI: 1.87-2.15 for <high school graduation vs. university degree; occupation: HR=1.91, 95% CI: 1.75-2.07 for unskilled vs. professional occupation) (Table 2). In women, similar inverse associations between education and occupation and CVD mortality were observed (education; HR=2.45, 95% CI: 2.02-2.35 for <high school graduation vs. university degree, and occupation: HR=1.96, 95% CI: 1.64-2.35 for unskilled vs. professional occupation). In both men and women, associations were attenuated and remained statistically significant in fully-adjusted models.

Limited evidence was found to support the hypothesized association between overqualification and all-cause or CVD mortality. In the analytic models estimating an interaction between education and occupation, the interaction terms for both men and women were not statistically significant on the multiplicative scale. In analytic models estimating over- or underqualification via a categorical variable, there was a weak association for men between overqualification and all-cause mortality in the fully-adjusted model (HR: 1.06, 95% CI: 1.01-1.12 compared to the qualified group) (Table 3).

Table 2. Cox Proportional Hazard Models Evaluating the Association Between Educational Attainment and Occupational Status With All-cause and CVD Mortality in Non-institutionalized Men and Women Aged 35-64, Canadian Census Mortality Follow-up Study, Canada (1991-2001)

			All-cause Mortality						CVD Mortality					
			Model 1*		Model 2*		Model 3†,‡		Model 1*		Model 2*		Model 3†,§	
	n	Events	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
Men														
Education														
University degree	118,400	3347	1.00				1.00		1.00				1.00	
Postsecondary diploma	87,700	3113	1.30	1.24-1.36			1.19	1.13-1.26	1.34	1.23-1.47			1.22	1.11-1.34
Secondary graduation	260,900	12,686	1.62	1.56-1.68			1.40	1.33-1.46	1.64	1.53-1.76			1.38	1.27-1.50
<secondary graduation	203,300	15,604	1.94	1.87-2.01			1.53	1.46-1.61	2.01	1.87-2.15			1.52	1.40-1.66
Occupation skill requirements														
Professional	91,800	3029			1.00		1.00				1.00		1.00	
Management	113,100	4705			1.18	1.13-1.24	1.02	0.97-1.07			1.20	1.11-1.31	1.04	0.95-1.13
Technical, skilled, supervisory	235,600	12,225			1.44	1.39-1.50	1.09	1.04-1.14			1.48	1.37-1.59	1.09	1.00-1.19
Semi-skilled	169,500	10,147			1.69	1.62-1.76	1.16	1.11-1.22			1.77	1.64-1.91	1.20	1.09-1.31
Unskilled	60,200	4644			1.86	1.78-1.95	1.21	1.15-1.28			1.91	1.75-2.07	1.22	1.11-1.35
Women														
Education														
University degree	62,200	1039	1.00				1.00		1.00				1.00	
Postsecondary diploma	86,600	1939	1.22	1.13-1.32			1.15	1.06-1.25	1.54	1.25-1.90			1.40	1.12-1.74
Secondary graduation	157,200	3954	1.37	1.28-1.46			1.28	1.19-1.39	1.80	1.49-2.19			1.61	1.29-2.00
<secondary graduation	115,600	4236	1.55	1.45-1.66			1.41	1.30-1.54	2.45	2.02-2.96			2.01	1.61-2.51
Occupation skill requirements														
Professional	73,800	1458			1.00		1.00				1.00		1.00	
Management	38,400	937			1.17	1.08-1.27	1.06	0.97-1.15			1.31	1.06-1.62	1.06	0.85-1.33
Technical, skilled, supervisory	121,300	3226			1.24	1.16-1.32	1.07	0.99-1.14			1.38	1.18-1.63	1.02	0.85-1.23
Semi-skilled	148,900	4164			1.27	1.20-1.35	1.06	0.99-1.14			1.62	1.39-1.89	1.11	0.92-1.32
Unskilled	39,300	1383			1.42	1.32-1.53	1.14	1.05-1.24			1.96	1.64-2.35	1.22	0.99-1.51

* Adjusted for age.
† Adjusted for age, education, occupation, income adequacy, marital status, years since immigration, ethnicity, Aboriginal origins, province of residence and community size.
‡ When added to Model 3, an interaction term between education and occupation for all-cause mortality was not statistically significant (men: p=0.22; women: p=0.74).
§ When added to Model 3, an interaction term between education and occupation for CVD mortality was not statistically significant (men: p=0.25; women: p=0.16).

Table 3. Cox Proportional Hazard Models Evaluating the Association Between Status Inconsistency and All-cause and CVD Mortality in Non-institutionalized Men and Women Aged 35-64, Canadian Census Mortality Follow-up Study, Canada (1991-2001)

			All-cause Mortality				CVD Mortality			
			Model 1*		Model 2†		Model 1*		Model 2†	
	n	Events	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
Men										
Status Inconsistency										
Qualified	247,100	11,051	1.00		1.00		1.00		1.00	
Overqualified	76,000	3100	1.00	0.96-1.04	1.06	1.01-1.12	0.97	0.91-1.05	1.05	0.96-1.15
Underqualified	347,100	20,599	1.15	1.12-1.17	1.00	0.96-1.05	1.12	1.08-1.17	0.96	0.89-1.03
Women										
Status Inconsistency										
Qualified	171,500	4141	1.00		1.00		1.00		1.00	
Overqualified	57,600	1295	0.98	0.92-1.04	1.04	0.96-1.13	0.97	0.83-1.13	1.19	0.98-1.46
Underqualified	192,400	5732	1.10	1.06-1.15	1.02	0.95-1.10	1.13	1.03-1.24	0.90	0.76-1.07

* Adjusted for age.
† Adjusted for age, education, occupation, income adequacy, marital status, years since immigration, ethnicity, Aboriginal origins, province of residence and community size.

DISCUSSION

Overall, strong socio-economic gradients in all-cause and CVD mortality were observed. These associations remained in fully-adjusted models. Adjusting for education and occupation simultaneously attenuated the mortality risk associated with each SEP measure. However, as in previous studies,[23] level of education still displayed a stepwise gradient for both all-cause and CVD mortality, while the occupational gradient became less apparent. The lack of interaction between education and occupation demonstrates a consistent effect of occupation on mortality across educational strata. A weak association was observed between overqualification and all-cause mortality in men. However, overall these findings suggest that overqualification does not confer additional all-cause or CVD mortality risk over and above that associated with individual SEP measures.

Prior literature

Previous studies have demonstrated strong social gradients for both education and occupation in all-cause and CVD mortality,[24] a finding confirmed in this report. In addition, the overqualification hypothesis was not confirmed in this study. These findings add to the mixed results on the association between overqualification and health. Two recent studies from Germany reported an association between status inconsistencies and CVD,[11,15] although only one found an association between overqualification and CVD.[11] However, these studies compared status-inconsistent with status-consistent individuals, an approach that does not differentiate between SEP and status-inconsistency measures. In addition, the use of ordinal – sample-dependent – rankings of SEP measures lacks a theoretical basis for quantifying both the level (as it groups all inconsistencies together) and type of inconsistency. The present study introduces a new measure of overqualification, making it difficult to compare with previous studies.[11,12,15] However, the classification of occupation by minimum skill level required allows a more accurate classification of overqualification. One exception is management occupations, which were included as an independent category as they reflect a range of potential education attainments. A sensitivity analysis individually classifying management occupations into occupation skill requirement categories, defined in a previous study using the NOC classification system,[13] did not change the study results.

Strengths and limitations

Our results should be interpreted taking into account the following limitations. The duration of exposure to overqualification as well as transitions between occupations are not captured in this study, as exposure measures were only assessed at one time point. Therefore some non-differential exposure misclassification may have occurred, which would have biased estimates toward the null. Future studies are necessary to better understand the time-dependent effect of overqualification on mortality. There may be misclassification across underqualified and qualified categories in our main independent variable as on-the-job training and experience may be considered in place of education by some employers. Unfortunately our data source did not contain information on years of relevant work experience, so we were unable to take job experience into account. In addition, immigrant populations are more likely to be overqualified[9] and have better-than-average health given the Canadian immigration system. Therefore, we controlled for years since immigration. Sensitivity analyses excluding all immigrants did not significantly change the results from this study (data not shown). Further, information on important mediators (e.g., health behaviours) of the relationship between education, occupation, overqualification and mortality were not available in this study. Mediators, such as time-dependent health behaviours, have been shown to explain a portion of social inequalities in mortality.[25] Finally, given the limited information on health status available in this cohort, it was not possible to assess whether the association between overqualification and mortality was potentially confounded by this factor (e.g., individuals in poor health seek occupations below their educational attainment).

A major strength of this study was the large sample size of a nationally representative cohort of Canadians, which enabled us to test the association between overqualification and all-cause and CVD mortality. Moreover, we present a more direct measure of overqualification and a statistical methodology that clearly distinguishes between the effects of SEP and overqualification.

CONCLUSION

Education and occupation gradients in all-cause and CVD mortality were observed in this study. However, there was little evidence that overqualification resulted in additional all-cause or CVD mortality, suggesting that the effects of occupation are consistent across educational strata.

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RÉSUMÉ

Objectifs : Déterminer si l'instruction, la profession et la surqualification (définie comme le fait d'avoir un niveau d'instruction supérieur au niveau de compétence exigé pour une profession) sont associées au risque de mortalité toutes causes confondues et de mortalité due aux maladies cardiovasculaires (MCV).

Méthode : Une étude prospective de l'association entre la surqualification et la mortalité toutes causes confondues et due aux MCV a été menée dans l'Étude canadienne de suivi de la mortalité selon le recensement (1991-2001), un échantillon de 15 % des Canadiens d'âge adulte ayant rempli le questionnaire complet du Recensement de 1991 (n=1 091 800, 39 % de femmes, 35 à 64 ans au début de l'étude). L'instruction, la profession et tous les facteurs confusionnels (âge, niveau adéquat du revenu, état matrimonial, années depuis l'immigration, ethnicité, origines autochtones, province de résidence et taille de la communauté) ont été mesurés au début de l'étude, et un suivi ultérieur a été fait pour la mortalité.

Résultats : Des modèles des risques proportionnels de Cox rajustés selon l'âge et le sexe ont montré une association inverse entre l'instruction et la mortalité toutes causes confondues (femmes : coefficient de danger (CD)=1,55, intervalle de confiance (IC) de 95 % : 1,45-1,66; hommes : CD=1,94, IC de 95 % : 1,87-2,01, <diplôme d'études secondaires c. diplôme universitaire). De plus, la profession rajustée selon l'âge était inversement associée à la mortalité toutes causes confondues (femmes : CD=1,42, IC de 95 % : 1,32-1,53; hommes : CD=1,86, IC de 95 % : 1,78-1,95, main-d'œuvre non qualifiée c. main-d'œuvre professionnelle). Des gradients sociaux semblables ont été observés pour la mortalité due aux MCV. La surqualification n'était associée ni au risque de mortalité toutes causes confondues, ni au risque de mortalité due aux MCV, comme en témoignent les paramètres d'interaction non significatifs entre l'instruction et la profession.

Conclusions : De plus en plus, les Canadiens font des études poussées, mais la répartition professionnelle sur le marché du travail n'a pas changé dans la même proportion. D'après les résultats de notre étude, l'augmentation des travailleurs surqualifiés pour leur profession n'entraînera pas de hausse de la mortalité toutes causes confondues ni de la mortalité due aux MCV.

Mots clés : Canada/épidémiologie; facteurs socioéconomiques; mortalité; maladies cardiovasculaires