

Poor health and retirement income: the Canadian case

LYNN McDONALD* and PETER DONAHUE†

ABSTRACT

Using the 1994 Canadian General Social Survey, this study examines the economic effects of retiring because of poor health. When men and women who have retired for reasons of poor health are compared to those who have retired for other reasons, the health retirees are disadvantaged on measures of their health, on human capital variables, in terms of their work history, and ultimately, in their retirement income whether personal or household. The men who retired because of ill health were less likely to receive income from a private pension or from interest and dividends. Almost half of the men reported that their financial situation was worse since their retirement. The women retirees suffered from the same disadvantages as the men although their incomes in retirement were much lower. In the multivariate analyses, health had a significant and negative effect on men's household and personal incomes but there was no effect on the incomes of women. For them, any effect that poor health might have had on household income was offset by factors associated with marriage, and the women's own socio-demographic characteristics. The findings suggest reason for policy-makers to be cautious when contemplating blanket reductions in disability/invalidity and pension rates.

KEY WORDS – retirement income, gender, poor health, disability, invalidity pensions.

Introduction

In this article we examine the factors associated with retirement due to poor health and its influence on retirement income. We focus on poor health because it is one of the more frequently reported reasons for early retirement in Western industrialised nations, yet receives only limited attention from researchers. Few have examined what becomes of retirees who have left the labour force because of poor health, a central issue when considered in light of the retrenchment of social security programmes in many industrialised nations. Most recently, the health of older workers has received short shrift in the debate over the

* Centre for Applied Social Research, University of Toronto.

† Faculty of Social Work, University of Toronto.

increase in the uptake of invalidity/disability benefits and the proposed measures to stem the tide that peaked in the last two decades¹. In response to the sharp rise in beneficiaries, many countries have instituted a number of changes to prevent ‘malingerers’ from using the disability/invalidity pension as an economic bridge to retirement². With a number of countries now reporting successes in the reduction of disability caseloads (*e.g.* Italy, Canada), there comes a certain disquiet about the fate of older workers who are genuinely ill and must retire as a result (OECD 1998b).

The changes to disability pensions reflect the broader trend towards an increase in selectivity over universality in the distribution of income benefits to older persons as part of a widespread attempt to ensure the financial viability of public pension systems (Shaver 1998; OECD 1998b; OECD 1995a). Like the reforms to disability pensions, general pension reforms may also spell trouble for those who must retire because of poor health. Adjustments such as raising the statutory age of retirement (United States, Italy), raising the age at which early retirement payments can be accessed (Finland, Germany, Poland), increasing the number of years of prior employment or contributions before workers can access early retirement benefits (Belgium, Hungary, Germany), and reductions in pension generosity (Germany, Italy, Norway, Canada, United Kingdom), all have negative implications for the older worker who must retire because of ill health or a chronic disability (OECD 1998b). It is possible that many sick older workers will have to delay their retirement in order to qualify for or accrue benefits or, if they cannot work, they will have to accept lower benefits in their retirement.

The disagreement amongst researchers as to the changes in health over the past 25 years has not helped the course of the policy debates over pension reform. The current arguments about reduced mortality and morbidity and ‘compressed morbidity of older workers’ (Fries 1980) tend to mask the fact that some older workers genuinely suffer ill health and are forced to retire as a result (OECD 1995b; Crimmins and Ingegneri 1993; Markides 1993). Not all older workers are healthy, nor is the health explanation of retirement always a cover for some other less socially acceptable reason such as unemployment (Bound 1989; OECD 1995b; Dwyer and Mitchell 1998). Moreover, a decrease in mortality rates does not necessarily mean a decrease in morbidity rates. Although substantial evidence collected in the last 20 years shows increases in morbidity and disability *despite decreases in mortality* (Ycas 1987; Chapman *et al.* 1986; Riley 1990; Kaplan 1991; Crimmins and Ingegneri 1993; OECD 1995a), many still subscribe to the ‘justi-

fication hypothesis' that health is a cover for another reason for retirement (Dwyer and Mitchell 1998: 3).

Using Canada as a case study, in this report we consider three questions: Are there differences between those who retire for poor health and those who retire for other reasons? Does poor health as a reason for retirement affect retirement income? What are the most important sources of income for those who retire because of poor health? The answers to these questions are then discussed in light of the recent changes to disability and pension benefits noted above.

A secondary data analysis of the Canadian General Social Survey 1994 was carried out. This first compares those who retire for health reasons with those who retire for other reasons such as caregiving, redundancy, mandatory retirement, and because of early retirement incentive programmes. Four income models are then estimated. The first two models examine the relative effects of poor health on personal and household retirement income, while the last two models assess what factors provide a financial cushion in terms of personal and household incomes for those forced to retire because of their poor health.

The literature

Although health and its relationship to age and retirement has had an enduring place in the study of retirement, the focus has been narrow. The majority of researchers, usually economists, have focused primarily on the influence of health in predicting early retirement (Bazzoli 1985; Gustman and Steinmeier 1985; Sammartino 1987; Casey 1989; Quinn and Burkhauser 1990; Quinn *et al.* 1990; Ippolito 1990; Costa 1994; Wise 1993; Gustman *et al.* 1995; Siddiqui 1997; Dwyer and Mitchell 1998). Researchers have asked, is it the 'push' of poor health or the 'pull' of a pension that leads to early retirement? The answer to this question has changed over the last 45 years depending upon the sociopolitical contingencies of the times and the theoretical proclivities of the researchers (Lumsdaine 1995). In the early retirement research, ill health was found to be an important predictor of early retirement (Reno 1971). In the early 1990s, however, the emphasis shifted from health to pension income and pension wealth as the more important factors influencing early retirement (Quinn and Burkhauser 1990; Jacobs *et al.* 1991; Guillemard and Rein 1993; Wise 1993). Now, at the beginning of this century there are signs that health is a renewed locus of interest as part of the search for ways to reverse the trend to early retirement.

Today, researchers continue to confirm that poor health figures in the individual retirement decision (OECD 1995a; Bound *et al.* 1997; Kerkhof *et al.* 1997; Dwyer and Mitchell 1998). Indeed, retiring because of poor health has been found to be one of the most frequently cited reasons for retiring (OECD 1995; Schellenberg 1994; Ozawa and Law 1992; Quinn *et al.* 1990; OECD 1995b; Reimers and Honig 1989). It also has been suggested that health limitations increase exits from the labour force for other reasons, even for those who do not cite health as their reason for retirement (Henretta *et al.* 1992) – the reverse of the argument that health is a ‘cover’ for more acceptable reasons for retirement. In the American literature, workers who are in poor health or who perceive themselves to be in poor health tend to retire earlier than those with above-average health (Monette 1996; Schellenberg 1994; Burtless 1987). In a recent analysis of the first wave of the Health and Retirement Survey (1992), Dwyer and Mitchell (1998) show that health problems influence retirement plans more strongly than do economic factors. Poor health also appears to be strongly related to involuntary retirement. In another American survey it was found that the most prevalent reason given for involuntary retirement was poor health, which was reported by 25 per cent of the respondents (Ozawa and Law 1992).

In Canada, illness or disability is one of the most important single reasons for early retirement. Analyses of data from the General Social Survey 1994, found that 24 per cent of retirees cited health concerns as their primary reason for retirement (Monette 1996). Using data from the Survey of Aging and Independence, McDonald (1996) found that 37 per cent of men and 34 per cent of women aged 55 to 64 retired because their health was poor. Schellenberg (1994), analysing the same data, found that approximately 47 per cent of involuntary retirees cited health as their reason for retiring; the number one reason cited for involuntary retirement in Canada.

British research has produced evidence similar to what has generally been found in North America. Early researchers found that poor health played a major role in the retirement decision of older workers (Altmann 1982; Parker 1980). However, Laczko *et al.* (1988), with data from the 1983 Labour Force Survey, found that only three per cent of early retirees gave ill health as their major reason for retirement. More recently, Meghir and Whitehouse (1997), using data from the first wave of the UK Retirement Survey collected in 1988–89, found that health problems had a strong positive effect on the exit of men over 40 years of age from the labour force. Using data from Wave 2 (1994) of the same survey, Tanner (1998) reported that 22.5 per cent of

individuals with occupational pensions and 32.2 per cent of individuals without occupational pension plans cited ill health as their reason for retirement.

Five microeconomic studies of the United Kingdom, Germany, Italy, the United States and the Netherlands, reaffirmed that health status is an important element in all early withdrawals of older workers from the labour market, especially for those moving to a disability benefit scheme. This result was the same for all five countries irrespective of the indicator used to measure health status (OECD 1998b).

Less attention has been paid to the characteristics of those who report poor health as their route into retirement. Most studies find that health retirees tend to be younger than workers who retire for other reasons (OECD 1995b; McDonald 1996; Monette 1996), and that men tend to cite ill health as a reason for retirement more than women (Midnanik *et al.* 1990; OECD 1995b; Monette 1996). A common finding in almost all of the literature is the importance of occupational status in predicting retirement due to ill health. Lower-skilled or blue-collar employees are more likely to retire as a result of poor health (OECD 1995a; Schellenberg 1994; Henretta *et al.* 1992; Chirkos and Nestel 1991; Mitchell *et al.* 1988). Researchers suggest that blue-collar or less skilled workers tend to be engaged in employment that is physically demanding, thereby placing these workers at a greater risk of retirement should their health decline (Chirkos and Nestel 1991; Mitchell *et al.* 1988). It has also been suggested that these older workers may be more severely impaired by their health problems, may not have a set of skills that are transferable to a job better suited to their abilities, or may perceive the costs of unemployment as less than those of retraining or an extensive job search (Feldman 1991; Daly and Bound 1996). In the UK, as reported earlier, those without occupational pension plans are more likely than those with occupational pension plans to report retiring due to ill health (Tanner 1998). Therefore, those most likely to retire due to poor health may also be those least able to afford to retire.

Although researchers have made numerous attempts to estimate the influence of health on the age of retirement, there has been relatively little attention paid to the effect of health on retirement income. More attention has been paid to the psychological outcomes attached to retiring because of poor health, and even this research has been assessed as scant (Reis and Puskar Gold 1995). Most researchers investigating income aggregate workers who leave the labour force for health reasons with all other workers who are not working, but who are below the

normal retirement age (Cheal and Kampen 1998). They also make comparisons between the retired and not retired on income, rarely if ever comparing those who retired for health reasons to other retirees (OECD 1995 a). In the majority of these studies the effect of health has not been singled out for study nor is it even clear that what is being studied is retired workers. Nonetheless, the results indicate that households headed by older men who are not in the labour force have lower incomes than households headed by men in the labour force (OECD 1995 a). The situation of women has remained unexamined.

A limited number of studies that directly examine the health question find that older workers forced to exit the labour market unexpectedly because of their health, will have lower incomes because of the years of lost income and because of decreased pension contributions (McGoldrick and Cooper 1989; McDonald *et al.* 2000). The economic consequences of retirement due to health may be offset, at least to some degree, if the individual affected is eligible for disability benefits to bridge their income into retirement (OECD 1995 a; McDonald 1997) but not even this is certain.

The reverse relationship – the effect of earnings on health – has been investigated as part of the broader international discussion about the evidence pertaining to socioeconomic gradients in health status. Stimulated by such benchmark studies as the Black Report (Townsend and Davidson 1988), the basic issue has been whether lower income or lower socioeconomic status generally lead to poorer health or the reverse. Some argue that those who are poor, particularly those who have been poor since childhood, have inferior housing and nutrition which enhances the likelihood of periods of ill health. Others argue that poor health may influence the ability to obtain a decent education or a well-paying job, and still others argue that the relationship can run both ways (Kerkhofs and Lindeboom 1997; Moore and Rosenberg 1997). The debate is far from being settled, although one investigation relevant to our analysis finds support for the socioeconomic gradient of health. In an examination of the relationship between pre-retirement earnings histories and mortality after age 65 for half a million Canadian men, a clear and significant gradient was found. Higher earnings decades prior to age 65 were associated with low mortality during the ensuing nine years (Wolfson *et al.* 1993). The same study also discovered that being married, not retiring early, and improvements in earnings during the latter decades of one's career, were significantly associated with higher survival probabilities (Wolfson *et al.* 1993: S178).

Although the research appears consistently to support the notion of

poor health as one of the major determinants of retirement, there are a few reasons for scepticism. Most studies rely on post-retirement rationales for retirement. Therefore, some people may tend to overestimate the role that health actually played in their retirement decision (Bazzoli 1985). It has also been suggested that poor health is not only a more socially acceptable rationale for leaving the work force, but that it is a prerequisite for enrollment in some public and private transfer programmes (Ruhm 1990; Laczko *et al.* 1988). Access to disability/invalidity benefits is known to affect the link between ill health and retirement although there is no consensus as to the extent (OECD 1998a; OECD 1995b; Disney *et al.* 1994). In the UK, the Department of Social Security (1993) reported an increase in the numbers claiming invalidity benefits from 600,000 in 1978–79 to 1,500,000 in 1992–93. Closely associated with access to disability/invalidity benefits is the generosity of such benefits. In many countries, disability schemes have been found to offer quite generous compensation and, in turn, may increase early exits from the labour force (OECD 1998a). Therefore, the numbers available on those retiring for health reasons are not firm.

Public income support programmes in Canada

When older Canadians retire for health reasons the primary government transfer programmes with the potential to provide income support include the Old Age Security programme (OAS) and the Canada/Quebec Pension Plan (C/QPP). Almost all Canadian citizens qualify for an Old Age Security Pension at 65. Canadians with higher incomes are subject to an income tax ‘clawback’ in which they repay all or part of their benefits. Poorer Canadians can apply for a means-tested Guaranteed Income Supplement (GIS) that is based on family income if the beneficiary is married. The C/QPP, a pay-as-you-go plan, provides retirement benefits at age 60 to those who have contributed to the plans. It also pays a disability benefit to bridge workers to retirement or re-employment. A smaller income support programme is the Spouses Allowance (SPA) provided to spouses of OAS pensioners and widow(er)s aged 60 to 64 with limited income. The replacement income level for a single person earning the average wage is approximately 39 per cent (Canadian Institute of Actuaries 1995). In most Canadian communities, older persons who rely primarily, or only, on OAS/GIS – about 34 per cent – live below

Statistic Canada's low income cut-offs which encompasses those who spend, on average, at least 20 percentage points more of their pre-tax income than the Canadian average on food, shelter and clothing (National Advisory Council on Aging 1999; Statistics Canada 1998; Statistics Canada 1997).

Research methods

The data reported here are from a larger study which investigated the effects of forced retirement for reasons of poor health, unemployment, caregiving responsibilities and mandatory retirement provisions. The study employed a multimethod approach using various Canadian national data files in conjunction with in-depth interviews with a purposive sample of involuntary retirees ($N = 100$)³. Here we report on the analysis of the public-use data from the General Social Survey, 1994.

The General Social Survey (GSS) was introduced to monitor changes in the living conditions and wellbeing of Canadians, and to provide immediate information on pressing social issues of the day (Statistics Canada 1995). The GSS is a continuing programme with a survey cycle each year. Cycle 9 of the GSS focuses on the quality of life after retirement and post-retirement activities. Information about education, current work and work history, unemployment, retirement and work interruptions, was collected.

The data for Cycle 9 were collected monthly from January 1994 to December 1994 in order to offset seasonal variations in the data collected. The target population for the GSS was all persons 15 years of age and over living in Canada, excluding those living in institutions and the Yukon and North West Territories. Data for Cycle 9 were collected using Computer Assisted Telephone Interviewing (CATI), with most of the sample being selected by Random Digit Dialing (RDD). A small supplementary sample from the Labour Force Survey was added to the RDD sample (Statistics Canada 1995). The sample consisted of 11,875 respondents with 10,381 from the RDD sample and 1,495 from the Labour Force Survey. The GSS is based on a complex survey design, with stratification and multiple stages of selection, and unequal probabilities of selection of the respondents. A rescaled weight was used in the main analyses to take into account the unequal probabilities of selection, however, this weight did not take into account the stratification and clustering of the sample's design.

The subsample used here includes only those persons who worked in

the labour force at some time, whether they worked full time or part time, and whether they reported themselves as retired ($N = 1607$ unweighted). 'Retired' was a self-definition and the reasons for retirement were a 'yes' or 'no' response to a multiple response question, asking 'Why did you retire? Your employer offered an early retirement incentive; your health required it; you were unemployed and couldn't find another job.' Another category was included and, from this, a variable describing whether or not the respondent retired to provide care was constructed. In an assessment of the overlap of reasons for retirement, 2.6 per cent of the sample noted two reasons or more. Amongst health retirees, the largest overlap was not with unemployment – usually considered the less desirable explanation – but rather between health and 'other reasons' for women, and between health and 'wanting to retire' for men. In order to reduce any ambiguity about the reason for retirement, any respondents who gave two or more reasons for retirement were removed from the data file ($N = 31$).

There is an ongoing debate on how best to measure health and its influence on retirement behaviour. Existing data sets in most industrialised countries cannot resolve this debate since they do not provide health measures of sufficient quality to determine whether self-reported health measures can be treated as exogenous determinants of retirement (Gustman *et al.* 1995: S60). It is important to note some of the concerns regarding self-report measures of health that have been expressed (at least for men): given self-evaluated health, judgements are not comparable across respondents; reports about health may be used to rationalise retirement; and they may represent a financial incentive for retirement since early retirement benefits are often attached to incapacity for work (Bound 1990). What is more, the measure used here is retrospective and represents an abrupt move from work to retirement without acknowledging that the retirement process is sometimes gradual (McDonald 1996). Removing the overlap in reasons for retirement, as well as removing those retired respondents who reported any form of work activity, was an attempt to minimise some of these problems but, nonetheless, the results must be interpreted with caution.

The theoretical framework guiding these analyses is the lifecourse perspective. This perspective is chosen because it emphasises the timing by which individuals and families make their transitions into and out of various roles in relation to the time schedules of society (Hareven 1996). At the heart of the lifecourse perspective is 'the synchronisation of individual time and historical time, and the cumulative impact of

earlier life events as shaped by historical forces on subsequent events' (Hareven 1996: 31). Briefly, retirement for health reasons, which is an unsynchronised event, is the function of the meshing of past work history, family history, and current historical trends – the globalisation of economic activity and accelerated technological development which have plunged many industrialised countries into an historical transformation of the industrial structure of the economy (McDonald 1996).

Consistent with a lifecourse perspective, four sets of independent variables measuring demographic characteristics, past work characteristics, income characteristics and retirement behaviour are included in the analyses. All variables, except age, age squared, household size, income, year retired, educational level, and occupational status are categorical measures⁴. The sociodemographic characteristics include those factors that are known to influence retirement income (McDonald 1996). Place of birth, a dummy variable, is used in the analysis in lieu of ethnic background because there is clear evidence that ethnicity differentially affects access to social and economic resources and, hence, retirement income (Wanner and McDonald 1986). Marital status, and household size are indicators of consumption levels, financial resources and social support, all factors relevant to retirement income. Age is included because age and income usually have a curvilinear relationship. To incorporate the nonlinearity in the relationship between age and income, the square of age has been included in the model (Kerlinger and Pedhazur 1973: 208). Formal education, like ethnicity, also affords differential access to social and economic rewards and is usually associated with larger incomes in retirement. Self-reported health and chronic health limitations are included here to assess if health actually has played a role in the retirement transition.

Of the work characteristics, level of education and a measure of socioeconomic status based on Blishen *et al.* (1987)⁵ are included in the analysis since these factors are known to have a very strong influence on income in retirement (McDonald 1996). Self-employment, which is generally linked to individual control over work activities, is included, because this form of employment might allow for more discretion in the transition into retirement when confronted with poor health. Whether the respondent previously worked in the goods-producing or services sector has implications for pensions, since the goods sector in Canada is characterised by orderly career lines with expected retirement ages and a job-related pension. Whether the retiree had worked full time or part time before retirement is considered an important variable, because this factor is known to affect retirement income, especially for women (McDonald 1996). Another important retirement variable used in the

analyses is how long the respondent had been retired, a variable created by subtracting the number of years retired from the respondent's age.

The income variables are based on self-reported, total personal income and household income for the year of 1993 before taxes⁶. Both variables are used because of the secondary poverty of married women, many of whom would be poor but for the fact that they reside in a non-poor family (Cheal and Kampen 1998). The data were collected in interval widths of \$4,000 ranging from less than \$5,000 to \$100,000 and over. The response categories are recoded to their midpoints and then logged to correct for the slight skew in the income distribution (Afifi and Clark 1990).

Owning one's own home is used as proxy for assets and dummy variables for receipt and non-receipt of a private pension, and investments and dividend income are included in the analyses. The dummy variable for government transfer payments include a number of sources of income – family allowance, social assistance, employment insurance, and the Canada/Quebec disability pension – so it is difficult to discern the exact source of public income.

The first analytic strategy compared those who had retired for health reasons with those who had retired for all other reasons on the four sets of characteristics. Models which assess the comparative effect of retiring for health reasons on retirement income were then estimated. Finally, the estimation of retirement income models for both those who had retired because of poor health and other reasons with health interaction effects were assessed (Tables 7 to 10) to show how similar characteristics operate differently, depending on whether one had retired for poor health or other reasons. Analyses were performed separately for men and women because of the cumulative differences in labour experiences for the two groups, which are due mainly, to the fact that women's work and retirement decisions are far more sensitive to family responsibilities across the lifecourse (Henretta *et al.* 1993). The number of cases in the various analyses diminish because of missing values and the breakdown of the data into more specific groups even though pairwise deletion was used in the analyses.

Findings

Table 1 shows the percentages for the reasons for retirement by gender. For the women, the most frequently reported reasons are, poor health and wanting to retire, followed by caregiving, a reason that is irrelevant

TABLE 1. *Reasons for retirement by gender, General Social Survey 1994*

Reasons for retirement*	Women	Men %	Total
Wanted to retire	21	24	23
Caregiving	13	–	6
Unemployment	9	10	10
Health	22	25	24
Early retirement incentive offered	4	10	7
Mandatory retirement policy	11	16	14
Spouse retired	7	–	3
Respondent felt old enough	9	11	10
New technology	–	–	–
Other reasons	4	3	3
Total (%)	100	100	100

* Overlap between categories has been removed.

– Following Statistics Canada guidelines, estimate cannot be reported because of insufficient cases.

to males. For the men, the most frequently reported reasons are ill health and wanting to retire, followed by mandatory retirement regulations which still operate in seven of the 10 provinces in Canada. As in most Western nations, ill health is ostensibly an important reason for retirement in Canada. Considering the total population, close to one in four Canadians report retiring because of poor health.

Table 2 presents the means and percentages for sociodemographic characteristics by ill health as the reason for retirement. An examination of the data for the men indicates that the men who retire for poor health are slightly younger, they are more likely to have retired at an earlier age and are more likely to have been retired longer. The average age at which the male health retirees leave the labour force is well below the national average for Canadian men which hovers at about age 60. It is also important to note that the health retirees would not qualify for a public pension since the age of entitlement is 60 years of age for the Canada/Quebec Pension Plan (C/QPP)⁷. They would, however, be eligible for a disability pension under the C/QPP. The men who retired because of poor health are less likely to be married, which fits with the well-known evidence that married men have lower mortality than their single counterparts. Consistent with previous research, they have significantly lower levels of education.

Although the health measure does not capture the respondent's health at the time of retirement, approximately 56 per cent of the male health retirees report fair to poor health compared to about 20 per cent of the respondents who retired for other reasons. When chronic health

TABLE 2. *Sociodemographic characteristics by health as a reason for retirement. General Social Survey 1994*

	Men		Women	
	No	Retired for health reasons Yes	No	Yes
Age				
mean	69.8*	68.4	70.2	69.3
s.d.	6.5	6.7	6.8	6.5
Born in Canada (%)				
Yes	76.8	77.4	78.5	78.9
No	23.2	22.6	21.5	21.1
Marital status (%)				
Separated/divorced	3.6*	10.3	7.0	5.5
Widowed	10.6*	9.2	36.4	41.2
Single	4.6*	5.8	9.8	10.3
Married	81.2*	74.7	46.8	43.0
Level of education				
mean	11.9*	8.8	12.0*	10.8
s.d.	4.2	4.2	3.6	3.8
Household size				
mean	2.1	2.1	1.8	1.8
s.d.	.8	.9	.9	.8
Age retired				
mean	60.8*	58.3	58.2*	56.7
s.d.	5.4	7.1	7.1	7.7
Activity of spouse (%)				
Working	7.9	11.3	19.6	18.7
Retired	90.7	86.6	75.8	77.7
Ill	–	–	–	3.2
Years retired				
mean	9.1*	10.1	11.9*	12.6
s.d.	6.2	6.7	8.1	8.1
Health (%)				
Poor	5.4*	24.4	4.5*	21.5
Fair	15.4*	31.6	13.6*	27.4
Good	29.3*	27.0	26.6*	24.8
Very good	29.4*	11.3	33.0*	19.6
Excellent	20.5*	5.8	22.3*	6.8
Chronic health limitation (%)				
Yes	25.6*	73.2	31.5*	55.9
No	74.4*	26.8	68.5*	44.1
Population ('000)	1,644		1,135	

* $p \leq .05$ for t-tests and chi-square tests.

– Following Statistics Canada guidelines, estimate cannot be reported because of insufficient cases.

limitations are considered, 73 per cent of the health retirees note a limitation compared to 26 per cent of those who retired for other reasons. Approximately 10 years after retiring, then, more health retirees than those who retire for other reasons experience a chronic

TABLE 3. *Previous work characteristics by health as a reason for retirement. General Social Survey 1994*

	Men		Women	
	No	Retired for health reasons Yes	No	Yes
Class of worker (%)				
Paid	85.4*	77.0	89.1	90.4
Self employed	14.6*	23.0	10.9	9.6
Industry (%)				
Goods	50.1*	66.4	14.8	17.8
Services	49.9*	33.6	85.2	82.2
Occupation (%)				
Professional/manager	23.2*	6.0	19.8*	9.9
Technical	15.0*	6.9	28.6*	13.0
Skilled	23.3*	37.8	26.8*	11.1
Unskilled	38.5*	49.3	24.8*	65.9
Employment status (%)				
Full-time	94.6	95.4	83.1*	71.5
Part-time	5.4	4.6	16.9*	28.5
Occupational status/Blishen				
Mean	42.9*	36.0	42.9*	36.7
s.d.	12.4	11.5	12.4	9.1
Pensions from past jobs (%)				
Yes	64.7*	52.4	38.6*	24.3
No	35.3*	47.6	61.4*	75.7
Worked after retiring (%)				
Yes	9.0*	1.8	4.3	1.9
No	91.0*	98.2	95.7	98.1
Population ('000)	1,644		1,135	

* $p \leq .05$ for t-tests and chi-square tests.

disability which lends some support to the possibility of longstanding health problems.

The picture for the women is very similar. Like the men, the women who had retired for health reasons retired at an earlier age and have been retired longer than the other retirees, although they are slightly younger. The age of retirement of the health retirees (56.7 years) is well below the average retirement age for women which is about 59 years in Canada (see Note 7). The women who retired for health reasons have lower levels of education but they are equally likely to be married. Close to 49 per cent of the women report poor/fair health compared to about 18 per cent of the women who retired for other reasons. Fifty-six per cent report a chronic health limitation, but unlike the men, the female reporting rate is lower overall.

Table 3 indicates that the men who retired because of ill health are

more likely to be self-employed, are more likely to have worked in the goods-producing industries, and had previously been skilled or unskilled workers. A further analysis, not reported in Table 3, showed that about 24 per cent of the men had worked in skilled crafts and trades, semi-skilled manual labour (16 per cent) and unskilled manual labour (23 per cent). In keeping with the nature of their occupations they have lower occupational prestige than the other retirees although they are just as likely to have worked full time. Given their work history, it is not surprising that less than half of the men received occupational pensions and, since the majority report being ill, it makes sense that they are less likely to return to work after retiring. Because of their inferior low human capital, they are also the least likely to be able to re-enter the labour force after retirement (McDonald 1997).

In contrast, the work characteristics are not as meaningful for women as for men mainly because women's work and retirement patterns are more sensitive to family responsibilities (McDonald 1996; 2000). The women who had retired because of poor health are more likely to be unskilled and to have low levels of occupational prestige, to have engaged in part-time work and, as a result, are less likely to have received pensions from previous jobs. Further breakdown of the occupational data showed that approximately 18 per cent of the women had retired from semi-skilled clerical and sales jobs, unskilled clerical and sales jobs (16 per cent), semi-skilled manual jobs (12 per cent), and 18 per cent from unskilled manual jobs.

The lifetime of work disadvantages experienced by the health retirees are reflected in their incomes in retirement (Table 4). The men who had retired because of poor health have significantly lower personal and household incomes compared to the men who had retired for other reasons – indeed, they have almost \$9,000 less personal income and almost \$10,000 less household income. The men who had retired due to poor health are less likely to have an income from a private pension and from investments/dividends. Both groups of men are equally likely to receive a government transfer payment because all retirees in Canada qualify for some level of the Old Age Security pension. The men who had retired for poor health are also less likely to own their own home, an important asset of most Canadians. About 30 per cent of the health retirees' household incomes are below the low income cut-offs for Canada. Lest there be any doubt about their financial distress, 41 per cent of the men who had retired because of their poor health report their income was worse than at the time when they had retired. Interestingly enough, there is no difference between the groups on how many other household members receive a

TABLE 4. *Income characteristics by health as a reason for retirement. General Social Survey 1994*

	Men		Women	
	No	Retired for health reasons Yes	No	Yes
Personal income (\$000)				
Mean	26.1*	17.6	17.5*	13.2
s.d.	17.3	10.2	14.1	7.8
Household income (\$000)				
mean	32.3*	23.9	27.5*	22.8
s.d.	18.4	12.8	17.5	17.3
			%	
Private pension				
Yes	61.0*	39.4	38.4*	24.5
No	39.0*	60.6	61.6*	75.5
Govt. transfer payment				
Yes	92.5	92.7	91.0	96.1
No	7.5	7.3	9.0	3.9
Interest and dividends				
Yes	58.7*	34.6	53.1*	31.6
No	41.3*	65.4	46.9*	68.4
Home owner				
Yes	80.4*	70.5	70.7*	59.1
No	19.6*	29.5	29.3*	40.9
Household member receives income				
None	19.9	22.5	45.6	44.3
One	70.8	66.9	48.7	47.4
Two or more	9.3	10.6	5.7	8.3
Low income cut-off (household)				
Above	84.1*	70.0	72.0*	55.2
Below	15.9*	30.0	28.0*	44.8
Financial situation since retirement				
Worse	26.7*	40.7	27.3*	40.7
Same	53.0*	41.3	50.5*	43.4
Better	20.3*	18.0	22.2*	15.9
Population ('000)		1,644		1,135

* $p \leq .05$ for t-tests and chi-square tests.

separate income. Both groups are likely to have one other source of income in the household, probably that of their spouse.

Turning to the income characteristics of the women in Table 4, it is obvious that the women who retire for poor health reasons are very disadvantaged. Their incomes in retirement are significantly lower than those of the women who had retired for other reasons. Their personal incomes are about \$4,000 lower, while their family incomes are about \$5,000 lower than the comparison group. Being unattached should be the explanation for this difference; both groups, however, are

equally likely to be married. These women are less likely to own their own homes, they are less likely to receive income from a private pension, and from interest and/or dividends. Like the men, they are equally likely to receive a government transfer payment which would give old-age security since their average age is over sixty-five (Table 2). Over 44 per cent of the female health retirees report an income below the low income cut-offs for Canada.

On this point we have preliminary evidence that health retirees experience lower levels of income in retirement than other retirees. Tables 5 and 6 present models that assess the relative impact of retiring because of poor health on household and personal income for men and women. This approach is used because the bivariate analyses do not adequately assess the influence of health, net of the other factors in their influence on retirement income. Personal income is examined here because it demonstrates the secondary poverty of married women (Logue 1991).

As was anticipated, ill health as a reported reason for retirement, has a significant and negative effect on household income for men. It is a little surprising, however, that it has the largest effect, net of the other reasons for retirement (indicated by the size standardised coefficients or betas). Unemployment as the route to retirement, which has garnered the most attention from researchers, has less of a negative effect on income while the other reasons appear to have little or no impact. At the same time, the relative influence of ill health pales in the face of the effects of the sociodemographic characteristics of the men.

Not surprisingly, as the number of household members increases so does household income. Both higher levels of education and occupational status are associated with larger household incomes while marriage gives considerable advantage to household income – all characteristics the health retirees are least likely to possess. The receipt of pensions from past jobs, probably a function of superior human capital, has a strong positive impact on household income but, as noted earlier, only about half of health retirees had private pensions from any job (Table 3).

The patterns for the men's personal income presented in Table 6 are complementary to the findings on their household income (Table 5). The main differences are for household size and reversal of the retirement decision. When considering only personal income it makes sense that an increase in household members would be a drain on personal income. Returning to work after retirement, a rare activity of health retirees, is also associated with higher personal incomes in retirement although this activity has no significant effect on improving

TABLE 5. *Ordinary least squares regression of log of household income on reasons for retirement for men and women. General Social Survey, 1994*

Predetermined variables ^a	Men			Women		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	.00	.16	.06	-.00	-.24	.00
Age squared	-.00	.99	-.22	.00	.18	.00
Born in Canada	-.00	-.02	.05	.09	.06	.07
Marital status	.27***	.21	.10	.29***	.24	.08
Level of education	.03***	.23	.01	.04***	.25	.01
No. of household members	.11***	.15	.03	.20**	.24	.06
Work characteristics						
Full-time	.01	.03	.10	.06	.04	.07
Occupational status	.01***	.18	.00	.00	.08	.00
Paid worker	-.04	-.03	.06	-.01	-.01	.10
Services industry	.04	.04	.04	.11	.06	.09
Years retired	-.00	-.01	.00	-.00	-.03	.01
Worked after retired	.06	.03	.07	-.23	-.07	.14
Pensions from any job	.20***	.18	.05	.12	.09	.07
Reasons for retirement						
Wanted to retire	.05	.04	.06	.15	.11	.09
Poor health	-.13*	-.10	.06	-.04	-.02	.09
Unemployment	-.06*	-.03	.08	-.00	-.00	.11
Caregiving	-.23	-.05	.18	.13	.07	.11
Mandatory retirement	-.04	-.03	.07	.14	.08	.11
Early retirement plan	.01	.00	.09	.11	.03	.17
Constant		8.694			9.485	
Adjusted R ²		.381			.364	
Number of cases		787			656	

^a For explanatory details, see Note 4.

* $p \geq .001$ ***; .01**; .05*.

family income. To recapitulate, men's household and personal retirement incomes are affected by poor health as a reason for retiring. However, stronger human capital would appear to shield health retirees from lower household and personal incomes, factors in short supply amongst this population.

Turning to the women in Table 5, it is clear that ill health as a reason for retirement has no influence on women's household income in retirement. None of the reasons for retirement, net of all the variables, have any effect on household income. The most important factor that enhances women's household income is a higher level of education followed by marriage and a larger household. Work-related characteristics and conditions proximate to retirement are outweighed by the influence of women's human capital and, most importantly, by

TABLE 6. Ordinary least squares regression of log of personal income on reasons for retirement for men and women. General Social Survey, 1994

Predetermined variables ^a	Men			Women		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	.00	.27	.05	-.02	-.18	.08
Age squared	-.00	-.23	.00	.00	.24	.00
Born in Canada	.06	.04	.05	.08	.04	.08
Marital status	.18***	.12	.06	-.46***	-.29	.08
Level of education	.03***	.20	.01	.05***	.22	.01
No. of household members	-.08***	-.11	.03	-.18***	-.23	.04
Work characteristics						
Full-time	.15	.06	.09	.07	.04	.08
Occupational status	.01***	.17	.00	.01*	.14	.00
Paid worker	-.07	-.04	.06	-.12	-.05	.11
Services industry	.01	.05	.04	.02	.01	.09
Years retired	-.01	.03	.00	-.00	-.10	.01
Worked after retired	.16*	.07	.08	-.16	-.04	.16
Pensions from any job	.32***	.25	.05	.20*	.13	.08
Reasons for retirement						
Wanted to retire	.01	.06	.07	.27*	.14	.11
Poor health	-.13*	-.10	.07	-.01	-.04	.11
Unemployment	-.18*	-.09	.08	-.02	-.01	.13
Caregiving	-.01	-.01	.18	.21	.09	.13
Mandatory retirement	-.01	-.05	.07	.13	.05	.13
Early retirement plan	.09	.04	.09	.46*	.12	.18
Constant		7.942			9.345	
Adjusted R ²		.31			.36	
Number of cases		787			656	

^a For explanatory details, see Note 4.
 * $p \geq .001$ ***; .01**; .05*.

marriage, a factor which did not appear as significant in the bivariate analysis. It is a common finding in retirement research that the potential negative effects of retirement are often buffered by marriage for women, which the data seem to suggest here (McDonald *et al.* 1997; McDonald 1996; O’Rand and Henretta 1992). Even so, ill health still does not affect the women’s personal incomes. As seen in Table 6, wanting to retire is the only retirement motive that influences personal income and, as would be expected when one has a choice, a sizable personal income would be key to the decision. It seems plausible that women’s weaker attachment to the labour force may result in retirement explanations that are more in line with personal than with job-related contingencies and therefore would have more import when it comes to retirement income.

TABLE 7. Ordinary least squares regression of household income on sources of income for men by retirement status. General Social Survey, 1994

Predetermined variables ^a	Men					
	Retired for other reasons			Retired for health reasons		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	.00	.02	.07	.08	.80	.12
Age squared	-.00	-.15	.00	-.00	-.01	.00
Born in Canada	.03	.03	.05	.08	.05	.11
Marital status	.30***†	.24	.05	.64***†	.47	.10
Level of education	.03***	.22	.01	.03**	.22	.01
No. of household members	.01***	.19	.00	.00	.05	.01
Income characteristics						
Own home	.09	.07	.05	-.00	.01	.10
Private Pension	.13***	.12	.05	.04*	.02	.09
Govt. transfer payment	.18	.06	.12	.18	.08	.17
Interest and dividends	.25***	.23	.05	.28***	.22	.09
Years retired	.01	.05	.01	-.00	.00	.01
Constant		9.143			7.062	
Adjusted R ²		.374			.403	
Number of cases		412			151	

^a For explanatory details, see Note 4.

* $p \geq .001$ ***; .01**; .05*.

† Corresponding coefficients for those who retired for health and other reasons significantly different at $p \geq .05$.

When we consider the personal incomes of the women reported in Table 6, their secondary poverty is apparent. Marriage is associated with lower personal incomes because, of course, married women's work histories are irregular, part-time and contingent on family responsibilities. In fact, women's personal income usually represents about 36 per cent of their household income (McDonald *et al.* 1997). In brief, marriage contributes to women's secondary poverty but also absorbs the economic shocks it creates, at least until death of the spouse (McDonald *et al.* 1997).

In Table 7, household income is regressed on sources of income, controlling for the major sociodemographic factors for men who retired for other reasons and for health reasons. A Chow test (1960) for differences in slopes between the health retirees and others is also examined⁸. The pattern for the health retirees is consistent. Marriage, a high level of education, income from a private pension and interest and dividends are associated with higher incomes in retirement, virtually the same factors that operate for those who retired for other reasons. The problem is, as noted in Table 4, only 39 per cent of health

TABLE 8. Ordinary least squares regression of personal income on sources of income for men by retirement status. General Social Survey, 1994

Predetermined variables ^a	Men					
	Retired for other reasons			Retired for health reasons		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	-.01	-.13	.07	.18	.20	.05
Age squared	.00	.13	.00	-.00	-.24	.00
Born in Canada	.23	.16	.05	-.15	-.12	.08
Marital status	.02	.01	.06	.22***	.18	.08
Level of education	.04***	.24	.01	.01	.05	.01
Socioeconomic status	.01***	.11	.01	.01***	.21	.00
Income characteristics						
Own home	.05	.03	.06	.06	.05	.08
Private pension	.27***	.21	.05	.12*	.11	.02
Govt. transfer payment	.17	.06	.10	.11	.06	.13
Interest and dividends	.36***	.28	.05	.33***	.29	.08
Years retired	.00	.04	.01	.00	.02	.01
Constant		9.015		3.324		
Adjusted R ²		.332		.355		
Number of cases		562		178		

^a For explanatory details, see Note 4.

* $p \geq .001$ ***; .01**; .05*.

† Corresponding coefficients for those who retired for health and other reasons significantly different at $p \geq .05$.

retirees receive a private pension and even a smaller number (35 per cent) receive interest or dividends. Notably absent is the effect of a government transfer payment in strengthening the retirement income of either group.

Marriage is the most important factor for all retirees, net of all other factors as indexed by the standardised coefficient. In fact, marriage is remarkably important to male health retirees. The Chow test, referenced by the crosses, indicates that marriage produces a significantly larger increment in household income for those who had retired because of their health compared to those who retired for other reasons. The pattern is basically repeated in Table 8 which presents the personal incomes of the men. The only difference from the household model is the fact that higher levels of education produce greater returns for those who retired for other reasons.

In Table 9 the same can be observed for women, no matter what their reason for retirement. Marriage is the largest and most important factor influencing women's household retirement income, net of all other variables for both comparison groups. According to the Chow

TABLE 9. Ordinary least squares regression of household income on sources of income for women by retirement status. General Social Survey, 1994

Predetermined variables ^a	Women					
	Retired for other reasons			Retired for health reasons		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	-.145	-.17	.09	-.11	-.13	.13
Age squared	.01	.16	.00	.00	.13	.00
Born in Canada	.15	.10	.08	-.01	-.01	.15
Marital status	.43***	.36	.07	.49***	.41	.12
Level of education	.03**	.15	.01	.02	.10	.02
Socioeconomic status	.01	.09	.00	.00	.08	.01
Income characteristics						
Own home	.22***	.16	.08	.22	.18	.12
Private pension	.13***	.18	.07	.20	.15	.13
Govt. transfer payment	.25*	.12	.12	.06	.03	.24
Interest and dividends	.30***	.24	.07	.19	.15	.12
Years retired	-.00	-.03	.01	-.00	.01	.02
Constant		13.192			13.343	
Adjusted R ²		.373			.403	
Number of cases		288			151	

^a For explanatory details, see Note 4.

* $p \geq .001$ ***; .01**; .05*.

† Corresponding coefficients for those who retired for health and other reasons significantly different at $p \geq .05$.

test, there are no significant differences between the coefficients of the two models testifying to the centrality of marriage for women's household income. It is of interest that, for the women who retired for other reasons, interest, a private pension, home ownership and government transfer payments are significantly associated with larger incomes in retirement. When women's personal income is considered in Table 10, the pivotal role of marriage for health retirees is confirmed. If married, the health retirees' personal income will take a larger drop than that of the married women who had had other motives for retirement. A private pension would be of help to the female health retiree except that, like the males, only about 25 per cent receive such a pension (Table 4).

Most telling in Table 10 is the strong contribution made by government transfer payments to personal retirement income for both groups of women. Keeping in mind that the Old Age Security pension, even when supplemented by the Guaranteed Income Supplement, does

TABLE 10. Ordinary least squares regression of personal income on sources of income for women by retirement status. General Social Survey, 1994

Predetermined variables ^a	Women					
	Retired for other reasons			Retired for health reasons		
	B	Beta	s.e.	B	Beta	s.e.
Demographic characteristics						
Age	-.28	-.24	.10	-.00	-.34	.14
Age squared	.00	.36	.00	.00	.23	.00
Born in Canada	.26	.13	.09	-.01	-.09	.15
Marital status	-.52***†	-.33	.08	-.61***†	-.45	.13
Level of education	.01***	.18	.01	.02	.09	.02
Socioeconomic status	.01*	.11	.00	.01	.06	.01
Income characteristics						
Own home	.13	.07	.09	.01	.05	.12
Private pension	.37***	.23	.08	.32*	.22	.14
Govt. transfer payment	.47**	.17	.15	.90***	.30	.27
Interest and dividends	.41***	.25	.08	.19	.15	.12
Years retired	-.01	.08	.01	-.00	-.05	.01
Constant		17.224			9.896	
Adjusted R ²		.422			.403	
Number of cases		303			151	

^a For explanatory details, see Note 4.

* $p \geq .001$ ***; .01**; .05*.

† Corresponding coefficients for those who retired for health and other reasons significantly different at $p \geq .05$.

not lift any Canadian over the Statistics Canada low income-cut-offs, it appears that health retirees have little recourse from their poverty.

Conclusion

This research provides initial evidence that retiring because of poor health has a significant and negative effect on retirement income, especially for men. When the men and women who had retired for reasons of poor health are compared to those who had retired for other reasons, there is little doubt that the health retirees are disadvantaged in terms of their health and in terms of their human capital. The health retirees exhibit modest work histories, leave the labour force earlier than other retirees and ultimately, have lower retirement incomes, whether personal or household.

Their poorer self-ratings of health, long after retiring, are compatible with studies that have shown that early retirees who report poor health or health limitations as reasons for retirement are more likely to die

prematurely (Iams and McCoy 1991). This finding provides reason for caution about policy interventions that operate on the assumption that the 'justification hypothesis' of health is alive and well. Tightening medical eligibility criteria for disability pensions or upping the ante on the number of years of prior employment and/or contributions is somewhat short-sighted. While the data hint at socioeconomic gradients in health status because of the consistently low status attainment of the health retirees and the higher status attainment of the comparison group (education, occupation, and prestige) we have no way of knowing whether poor health is the culprit or if poverty leads to poor health. What we do know is that the health retirees have experienced a lifetime of disadvantage, that ill health does negatively affect men's personal and household incomes, and that ill health is the most influential motive, net of other reasons for retirement.

Whatever the causal sequence, with these observations it seems equally myopic to roll back social assistance or to reduce the amounts of disability and pension benefits for this group. The household income of a very substantial group of health retirees compared to those who retired for other reasons falls well below the low income cut-offs for Canada – almost half of the women health retirees compared to less than a third of the men live in these straightened circumstances. This further underscores the perils of blanket reductions in disability and pension rates based on policies that are insensitive to the multiple circumstances influencing the retirement transition. The glowing reports of how poverty has been eliminated amongst the elderly in Canada is a slight of hand when differences across groups are examined.

That ill health has no influence on women's retirement income supports the view that women's retirement is less likely to be linked to labour force behaviour and more likely to be a function of family responsibilities, at least for this generation. In essence, women's starting point on the income ladder is so low to begin with and their work patterns so limited, none of their work history much matters when it comes to retirement income. It is marriage that has the largest and most positive effect on women's household retirement income. Conversely, women's secondary poverty, namely the fact that many are 'one husband away from poverty' (Logue 1991: 663) becomes very clear when their personal incomes are considered. Without husbands most of the health retirees would live in abject poverty by any standard. In fact, marriage provides a bigger boost to income for the health retirees than for the women who left the labour force for other motives. As has been argued elsewhere, women's transition into retirement and their

material conditions in retirement are a direct result of gender relations as they are played out in work and the family over the lifecourse (McDonald, Donahue and Moore 1997). The need in almost all Western nations for a pension policy which recognises the realities of women's lives is long overdue.

The men who retired because of ill health did not appear to benefit from government transfer payments and were less likely to receive income from a private pension or from interest and dividends, factors that would have the most salutary effect on household income in retirement. Women who had retired for health reasons were more than disadvantaged by the same conditions. When the factors that might strengthen retirement income are considered, it is clear that the men must rely on their own financial resources in retirement, such as private pensions, or their savings from interest and dividends. At the same time, marriage also helps to protect men's retirement income, a factor rarely acknowledged in the retirement research.

The women retirees, however, suffer from the same disadvantages as the men. When they reach retirement they are more likely to rely on government transfer payments as a major source of income. Like the men, they are more likely to believe that their retirement income has got worse since the day they retired, and over two-thirds believe that their financial situation has become much worse. In the multivariate analyses, however, it is clear that any effect that poor health might have on household income is offset by the benefits associated with marriage and their own sociodemographic characteristics. This is further confirmed when personal income is considered, since marriage has a strong and *negative* influence on personal income.

Although the data present a precursory picture of health retirees, there is enough evidence to suggest that the transition into retirement for reasons of ill health warrants broader consideration than whether or not it affects the age of retirement. The preceding analyses suggests that health retirees constitute a substantial group of Canadians who are handicapped across the lifecourse because of lower levels of education and training, unstable employment histories, lower wages and, ultimately, must depend on their own resources in retirement. The issue at stake for these retirees, and those in other countries in similar circumstances, is whether they should be guaranteed a decent income in retirement by the state, an issue clouded by the 'justification hypothesis', the lack of clarity in the health research about the morbidity of older workers and, perhaps more importantly, by the need to dismantle disability and the public pension systems in the name of fiscal prudence.

NOTES

An earlier version of this paper was presented at the Work, Employment and Society Conference, University of Cambridge, U.K. September 14, 1998.

- 1 Disability/invalidity benefits are intended to provide income for those who cannot earn a living because they have a severe disability. In a number of countries they became a surrogate for early retirement schemes when unemployment rates were high. (OECD 1995a). The uptake was so sharp that, in 1990, recipients of invalidity benefits outnumbered those in receipt of unemployment benefits in 12 of 23 OECD countries (OECD 1997).
- 2 Some of the changes included: awarding invalidity benefits strictly on medical criteria (Norway); tightening already narrow medical eligibility rules (Australia, Canada); introducing an *All Work Test* in the United Kingdom; reducing payment rates (Greece); monitoring the health and earnings of current pensioners (Slovak Republic) (OECD 1998b).
- 3 For more information, please see the programme for research on the Independence and Economic Security of the Older Population, Research Papers, numbered 17, 28, 29 and 30, McMaster University, Department of Economics.
- 4 Income is reported for 1993.

Dummy variables are defined as follows:

 - 1 if respondent (R) was born in Canada, 0 otherwise;
 - 1 if R is married, 0 otherwise;
 - 1 if R worked full time, 0 otherwise;
 - 1 if R is a paid worker, 0 if self-employed;
 - 1 if R previously worked in services industries, 0 otherwise;
 - 1 if R returned to work after retiring, 0 otherwise;
 - 1 if R wanted to retire, 0 otherwise;
 - 1 if R retired because of poor health, 0 otherwise;
 - 1 if R retired because of unemployment, 0 otherwise;
 - 1 if R retired to caregive, 0 otherwise;
 - 1 if R retired because of mandatory retirement policy, 0 otherwise;
 - 1 if R retired because of early retirement plan, 0 otherwise;
 - 1 if R if respondent owns home, 0 otherwise;
 - 1 if R receives a private pension, 0 otherwise;
 - 1 if R receives a government transfer payment, 0 otherwise;
 - 1 if R receives income from interest and dividends, 0 otherwise.

Continuously measured variables are defined as follows:

 - age is transformed into a continuous variable using midpoints of 6 age groups from -60, 60-64 through to 80+;
 - age squared is the age variable squared;
 - level of education ranges from grade school through to post-secondary education;
 - household is the number of household members;
 - occupational status is measured on the Blishen scale;
 - years retired is the number of years retired.
- 5 The range of scores assigned to occupational categories are as follows: 68.52 managers, 67.51 professionals, 48.47 for technicians, 41.27 for skilled workers, 30.01 for unskilled workers.
- 6 It is important to note that the non-response rate for the GSS on the income variables was quite high - 22 per cent for personal income and 37 per cent for household income.
- 7 In Canada, the age of mandatory retirement is 65 for women, the same as for men.

- 8 This test involves the total sample. A dummy variable is added to the model for whether or not the retirement was due to ill health. Similarly a set of multiplicative terms is added, capturing the interaction of the health variable with the other variables. An overall difference in slopes is indicated by an F-test for the difference in R squared, for the model including interactions and for the model containing only the main effects, while t-tests associated with the interaction slopes provide separate tests for each variable. In this datafile only the main effects model for the men was significantly different from the full models for household and personal incomes. Only the main effects model for personal income was different from the full model for the women.

References

- Afifi, A. A. and Clark, V. 1990. *Computer-Aided Multivariate Analysis*. 2nd Edition. Chapman and Hall, New York.
- Altman, R. 1982. The incomes of the early retired. *Journal of Social Policy*, **11**, 3, 355–64.
- Bazzoli, G. J. 1985. The early retirement decision: new empirical evidence on the influence of health. *The Journal of Human Resources*, **20**, 2, 214–34.
- Blishen, B. R., Carroll, W. K. and Moore, C. 1987. The 1981 socioeconomic index for occupations in Canada. *Canadian Review of Sociology and Anthropology*, **24**, 4, 465–88.
- Bound, J. 1989. The health and earnings of rejected disability insurance applicants. *American Economic Review*, **79**, 3, 482–503.
- Bound, J. 1990. Self-reported versus objective measures of health in retirement models. *Journal of Human Resources*, **26**, 1, 106–38.
- Bound, J., Schenbaum, M., Stinebrickner, T. and Waidmann, T. 1997. Measuring the effects of health on retirement behaviour. Paper presented at International Health and Retirement Surveys Conference, Amsterdam.
- Burtless, G. 1987. Occupational effects on the health and work capacity of older men. In Burtless, G. (ed), *Work, Health, and Income among the Elderly*. The Brookings Institution, Washington, DC, 103–50.
- Canadian Institute of Actuaries 1995. *Canadian Retirement Income Social Security Programs*. Report of the Task Force on Social Security Financing. Canadian Institute of Actuaries.
- Casey, B. 1989. Early retirement: the problems of ‘instrument substitution’ and ‘cost shifting’ and their implications for restructuring the process of retirement. In Schmahl, W. (ed), *Redefining the Process of Retirement: an International Perspective*. Springer-Verlag, Berlin, 135–50.
- Chapman, S. H., Laplante, M. P. and Wilensky, G. 1986. Life expectancy and health status of the aged. *Social Security Bulletin*, **49**, 10, 24–48.
- Cheal, D. and Kampen, K. 1998. Poor and dependent seniors in Canada. *Ageing and Society*, **18**, 147–66.
- Chirikos, T. N. and Nestel, G. 1991. Occupational differences in the ability of men to delay retirement. *The Journal of Human Resources*, **26**, 1, 1–26.
- Costa, D. L. 1994. *Health and Labor Force Participation of Older Men, 1900–1991*. NBER Working Paper Series No. 4929. National Bureau of Economic Research, Cambridge, MA.
- Crimmins, E. M. and Ingegneri, D. G. 1993. Trends in health among the American population. In Rappaport, A. M. and Schieber, S. J. (eds), *Demography and Retirement in the Twenty-First Century*. Praeger, Westport, CT, 225–53.
- Daly, M. C. and Bound, J. 1996. Worker adaptation and employer accommodation following the onset of a health impairment. *Journal of Gerontology*, **51B**, 2, S53–60.
- Department of Social Security 1993. *The Growth of Social Security*. London: HMSO.

- Disney, R., Meghir, C. and Whitehouse, E. 1994. Retirement behaviour in Britain. *Fiscal Studies*, **15**, 1, 24–43.
- Dwyer, D. S. and Mitchell, O. S. 1998. Health problems as determinants of retirement: are self-rated measures endogenous? Working Paper 6503, National Bureau of Economic Research, Cambridge, MA.
- Feldman, J. J. 1991. Has increased longevity increased potential worklife?. In Munnell, A. H. (ed), *Retirement and Public Policy – the Book*. National Academy of Social Science, Washington, DC.
- Fries, J. F. 1980. Aging, natural death and the compression of morbidity. *New England Journal of Medicine*, **303**, 130–5.
- Guillemard, A. M. and Rein, M. 1993. Comparative patterns of retirement: recent trends in developed societies. *Annual Review of Sociology*, **19**, 469–503.
- Gustman, A. L., Mitchell, O. S. and Steinmeier, T. L. 1995. Retirement measures in the Health and Retirement Study. *Journal of Human Resources*, Volume 30 Supplement, S57–83.
- Gustman, A. L. and Steinmeier, T. L. 1985. The effects of partial retirement on the wage profiles of older workers. *Industrial Relations*, **24**, 2, 257–65.
- Hareven, T. K. 1996. Life course. *Encyclopedia of Gerontology*, Volume 2, 31–40.
- Henretta, J. C., Chan, C. G. and O’Rand, A. M. 1992. Retirement reason versus retirement process: examining the reasons for retirement typology. *Journal of Gerontology*, **47**, 1, S1–7.
- Iams, H. M. and McCoy, J. L. 1991. Predictors of mortality among newly retired workers. *Social Security Bulletin*, **54**, 2–11.
- Ippolito, R. 1990. Toward explaining earlier retirement after 1970. *Industrial and Labour Relations Review*, **43**, July, 556–69.
- Jacobs, K., Kohli, M. and Rein, M. 1991. Germany: the diversity of pathways. In Kohli, M., Rein, M., Guillemard, A. M. and van Gunsteren, H. (eds), *Time for Retirement: Comparative Studies of Early Exit from the Labor Force*. Cambridge University Press, Cambridge, MA, 181–221.
- Kaplan, G. A. 1991. Epidemiologic observations on the compression of morbidity: evidence from the Alameda County study. *Journal of Health and Aging*, **3**, 2, 155–71.
- Kerkhofs, M., Lindeboom, M., Theeuwes, J. and Woittiez, I. 1997. Age related health dynamics and changes in labour market status. Paper presented at International Health and Retirement Surveys Conference, Amsterdam.
- Kerkhofs, M. and Lindeboom, M. 1997. Age related health dynamics and changes in labour market status. *Econometrics and Health Economics*, **6**, 407–23.
- Kerlinger, F. and Pedhazur, E. 1973. *Multiple Regression in Behavioral Research*. Holt, Rinehart and Winston, New York.
- Laczko, F., Dale, A., Arber, S. and Gilbert, G. N. 1988. Early retirement in a period of high unemployment. *Journal of Social Policy*, **17**, 3, 313–33.
- Logue, B. J. 1991. Women at risk: predictors of financial stress for retired women workers. *The Gerontologist*, **31**, 5, 657–65.
- Lumsdaine, R. L. 1995. *Factors Affecting Labor Supply Decisions and Retirement Income*. NBER Working Paper Series No. 5223, National Bureau of Economic Research, Cambridge, MA.
- Markides, K. S. 1993. Trends in health of the elderly in Western societies. In Atkinson, A. B. and Rein, M. (eds), *Age, Work and Social Security*. St. Martin’s Press, New York, 3–16.
- McDonald, L. 1996. *Transitions Into Retirement: a Time for Retirement*. Centre for Applied Social Research, Faculty of Social Work, University of Toronto.
- McDonald, L. 1997. The link between social research and social policy options: reverse retirement as a case in point. *Canadian Public Policy and the Canadian Journal on Aging*, (Special Edition). CPP XXIII Supplement; CJA 16th Supplement, 90–113.

- McDonald, L. 2000. Alarmist economics and women's pensions: a case of 'semanticide'. In Gee, E. M. and Gutman, G. M. (eds), *The Overselling of Population Aging: Apocalyptic Demography and Intergenerational Challenges*. Oxford University Press, Toronto, 115–28.
- McDonald, L., Donahue, P. and Moore, B. 1997. *Widowhood and Retirement: Women on the Margin*. IESOP Series Paper no. 17. McMaster University, Hamilton, Ontario.
- McDonald, L., Donahue, P. and Marshall, V. 2000. The economic consequences of early unexpected retirement. In Spencer, B. (ed), *Independence and Economic Security of the Older Population*. UBC Press, Vancouver.
- McGoldrick, A. E. and Cooper, C. L. 1989. *Early Retirement*. Gower, Aldershot.
- Meghir, C. and Whitehouse, E. 1997. Labour market transitions and retirement of men in the UK. *Journal of Econometrics*, **79**, 327–54.
- Midanik, L. T., Soghikian, K., Ransom, L. J. and Polen, M. R. 1990. Health status, retirement plans, and retirement. *Journal of Aging and Health*, **2**, 4, 462–74.
- Mitchell, O. S., Levine, P. B. and Pozzebon, S. 1988. Retirement differences by industry and occupation. *Journal of Gerontology*, **28**, 4, 545–51.
- Monette, M. 1996. *Canada's Changing Retirement Patterns: Findings from the General Social Survey*. Statistics Canada Housing, Family and Social Statistics Division, Ottawa.
- Moore, E. G. and Rosenberg, M. W. 1997. *Growing Old in Canada. Demographic and Geographic Perspectives*. Statistics Canada and International Thomson Publishing, Toronto.
- National Advisory Council on Aging 1999. *Challenges of an Aging Canadian Society*. Minister of Public Works and Government Services, Ottawa.
- OECD 1995a. *The Transition from Work to Retirement*. Social Policy Studies No. 16. OECD, Paris.
- OECD 1995b. *The Labour Market and Older Workers*. Social Policy Studies No. 17. OECD, Paris.
- OECD 1997. *Making Work Pay: Taxation, Benefits, Employment and Unemployment*. OECD, Paris.
- OECD 1998a. *The Retirement Decision in OECD Countries*. OECD Working Papers. Volume 6, No. 38. OECD, Paris.
- OECD 1998b. *Social and Health Policies in OECD Countries*. OECD Working Papers. Vol. 6, No. 33. OECD, Paris.
- O'Rand, A. M. and Henretta, J. C. 1992. Delayed career entry, industrial pension structure, and early retirement in a cohort of unmarried women. *American Sociological Review*, **47**, 3, 365–73.
- Ozawa, M. N. and Law, S. W. 1992. Reported reasons for retirement: a study of recently retired workers. *Journal of Aging and Social Policy*, **4**, 3/4, 35–51.
- Parker, S. 1980. *Older Workers and Retirement*. OPCS, HMSO, London.
- Quinn, J. F., Burkhauser, R. V. and Meyers, D. 1990. *Passing the Torch: the Influence of Economic Incentives on Work and Retirement*. Upjohn, Kalamazoo, MI.
- Quinn, J. F. and Burkhauser, R. V. 1990. Work and retirement. In Binstock, R. H. and George, L. K. (eds), *Handbook of Aging and the Social Sciences (3rd Edition)*. Academic, New York.
- Reimers, C. and Honig, M. 1989. The retirement process in the United States: mobility among full-time work, partial retirement, and full retirement. In Schmahl, W. (ed), *Redefining the Process of Retirement: an International Perspective*. Springer-Verlag, New York, 115–31.
- Reis, M. and Puskar Gold, D. 1995. Retirement, personality, and life satisfaction: a review and two models. *The Journal of Applied Gerontology*, **12**, 2, 261–82.
- Reno, V. 1971. *Why Men Stop Working at or Before Age 65*. US Department of Health, Education and Welfare, Social Security Administration, Office of Research and Statistics. May 1971.

- Riley, M. W. 1990. *Aging in the Twenty-first Century*. Boethner Research Institute, Bryn Mar, PA.
- Ruhm, G. J. 1990. Bridge jobs and partial retirement. *Journal of Labour Economics*, **8**, 4, 482–501.
- Sammartino, F. 1987. The effect of health on retirement. *Social Security Bulletin*, **50**, February, 31–47.
- Schellenberg, G. 1994. *The Road to Retirement: Demographic and Economic Changes in the 90's*. Canadian Council on Social Development, Ottawa.
- Shaver, S. 1998. Universality or selectivity in income support to older people? A comparative assessment of the issues. *Journal of Social Policy*, **27**, 2, 231–54.
- Siddiqui, S. 1997. The impact of health on retirement behaviour: empirical evidence From West Germany. *Econometrics and Health Economics*, **6**, 425–38.
- Statistics Canada. 1995. *The 1994 General Social Survey – cycle 9 Education, Work and Retirement. Public Use Microdata File Documentation and Users Guide*. Statistics Canada.
- Statistics Canada. 1997. *A Portrait of Seniors In Canada. 2nd Edition*. Ministry of Industry, Ottawa.
- Statistics Canada. 1998. *Low Income Cut-offs*. Statistics Canada, Ottawa.
- Tanner, S. 1998. The dynamics of male retirement behaviour. *Fiscal Studies*, **19**, 2, 175–96.
- Townsend, P. and Davidson, N. (eds). 1988. *The Black Report*. The Penguin Group, London.
- Wanner, R. A. and McDonald, P. L. 1986. The vertical mosaic in later life: ethnicity and retirement in Canada. *Journal of Gerontology*, **41**, 5, 662–71.
- Wise, D. 1993. Firms' pension policy and early retirement. In Atkinson, A. B. and Rein, M. (eds), *Age, Work, and Social Security*. St. Martin's Press, New York, 51–88.
- Wolfson, M., Rowe, G., Gentleman, J. F. and Tomiak, M. 1993. Career earnings and death: a longitudinal analysis of older Canadian men. *Journal of Gerontology*, **48**, 4, S167–79.
- Ycas, M. A. 1987. Recent trends in health near the age of retirement: new findings from the 1988 survey of employee benefits. *Social Security Bulletin*, **52**, 10, 2–19.

Accepted 13 June 2000

Address for correspondence:

Lynn McDonald, Centre for Applied Social Research, Faculty of Social Work, University of Toronto, 246 Bloor Street West, Toronto, Ontario, Canada, M5S 1A1