

Clinical Study

The personal and national costs of early retirement because of spinal disorders: impacts on income, taxes, and government support payments

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Abstract

BACKGROUND CONTEXT: Spinal disorders can reduce an individual's ability to participate in the labor force, and this can lead to considerable impacts on both the individual and the state.

PURPOSE: This study was aimed to quantify the personal cost of lost income and the cost to the state from lost income taxation, increased benefits payments, and lost gross domestic product (GDP) as a result of early retirement because of spinal disorders in Australians aged 45 to 64 years in 2009.

METHODS: This was done using cross-sectional analysis of the base population of Health&WealthMOD, a microsimulation model built on data from the Australian Bureau of Statistics' Survey of Disability, Ageing and Carers, and STINMOD, an income and savings microsimulation model. Linear regression models were used to examine the relationship between spinal disorders, labor force participation, income, taxation, and government support payments.

RESULTS: It was found that individuals aged 45 to 64 years who have retired early because of spinal disorders have significantly lower income (79% less; 95% confidence interval [CI], –84.7, –71.1; $p < .0001$), pay significantly less taxation (100% less; 95% CI, –100.0, 99.9; $p < .0001$), and receive significantly more in government support payments (21,000% more; 95% CI, 12,767.0, 35,336.4; $p < .0001$) than those employed full time with no health condition. Individuals who have retired early because of spinal disorders have a median value of total weekly income of only AU\$310, whereas those who are employed full time are likely to receive four times this. This has a large national aggregate impact, with AU\$4.8 billion lost in annual individual earnings, AU\$622 million in additional welfare payments, AU\$497 million lost in taxation revenue for governments, and AU\$2.9 billion in lost GDP: all attributable to spinal disorders through their impact on labor force participation.

CONCLUSIONS: Although the individual has to bear the economic costs of lost income in addition to the burden of the condition itself, the state experiences the impacts of loss of productivity from reduced workforce participation, lost income taxation revenue, and increasing government support payments. © 2012 Elsevier Inc. All rights reserved.

Keywords:

Income; Taxes; Retirement; Economic impacts

Introduction

Back problems or “spinal disorders” are among the most common health complaints affecting a large portion

of the population in most developed countries: between 60% to 80% of people will suffer from spinal disorders at some stage in their lives [1–3]. Although short-term spinal disorders are very common and so often capture attention, permanent or long-term spinal disorders (lasting 6 months or more) are a more serious concern because of their higher potential to cause persisting impairments, limitations, or restrictions in day-to-day activities [4,5]. Within Australia, 14% of the population (2.8 million people) suffer long-term disability resulting from spinal disorders [6].

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EVIDENCE & METHODS

Context

There are wide variations in the incidence of early retirement due to spine-related medical disability depending largely on social factors. Inability to return to work may have significant and unexpected personal and societal economic impacts.

Contribution

The authors found that, in Australia, the costs (personal and societal) of early retirement due to spinal disorders are very high, reducing to 25% of expected personal income and becoming a primary burden to social services.

Implication

While generalizability is problematic between jurisdictions, and economic analyses such as this require multiple assumptions, the negative economic outcomes reported are impressive. One suspects that patients and physicians considering or recommending early medical retirement may not well-understand the personal economic consequences. If the economic impact on patients, their families, and society are to be taken seriously, investment in research to determine effective management strategies that include continued employment as a major outcome is imperative.

—The Editors

The direct medical costs of spinal disorders are large, with the issue being one of the most common reasons for seeking medical care [5]. Within Australia, spinal disorders are the most expensive of any musculoskeletal condition costing an estimated AU\$1.02 billion in 2002 [7], an occurrence that is also reflected in studies in the United States and Europe [5,8]. Although these direct medical costs (direct costs to the medical system as a result of treatment) are large, the indirect costs (costs other than direct medical costs, such as lost income) are often cited as being greater [7,8].

Spinal disorders are a major source of functional disability and a major reason for absence from work [4,5] because of the restrictions on an individual's ability to undertake activities required for their employment [9]. The incidence of spinal disorders is most common in older workers [6], and some of the costs attributable to this older age group are also proportionately high [10].

With the aging of the global population, the 45- to 64-year-old group is making up an increasing proportion of the working population [11–13]. Of those aged 45 to 64 years within Australia who reported spinal disorders as their main health problem, 41% were not in the labor force (compared with 17% of individuals with no health condition) [14], making early retirement because of spinal disorders a serious issue. Early retirement is likely to reduce the income available to the individual and also place

a burden on the government because of the lost income taxation revenue and the increase in government benefit payments to the retired individuals.

There have been no detailed studies on the impact of early retirement on the individual because of spinal disorders. The studies that have reported on the indirect costs of spinal disorders have generally focused only on the loss of employment income and exclude, for example, reductions in income from all sources and reductions in taxation revenue from earned income [15]. In addition, previous research has not examined disaggregated individual outcomes but rather only aggregated outcomes [5,15,16].

This article quantifies, for the 45- to 64-year-old Australian population, the amount of income available to those who have retired early because of spinal disorders, the amount of taxation revenue these individuals pay to the Australian government, the amount of government benefits paid to these individuals, and the amount of lost gross domestic product (GDP). This study quantifies the difference of these values between those who have retired early because of spinal disorders and those in the labor force full time with no chronic health condition to give a more complete picture of the costs of spinal disorders and show how much could be saved if the disability from spinal disorders had been prevented (with interventions such as exercise promotion or surgical interventions [17–20]) and individuals remained in the labor force.

Methods

Data

The output data set of a microsimulation model, Health&WealthMOD, which is Australia's first microsimulation model of health and disability, was used to analyze the associated impacts that ill health has on labor force participation, personal income, and government revenue and expenditure. It was specifically designed to measure the economic impacts of ill health on Australian workers aged 45 to 64 years. The process by which Health&WealthMOD was built is outlined in detail in the study by Schofield et al. [21,22].

The base population of Health&WealthMOD was unit record data extracted from the Survey of Disability, Ageing and Carers (SDAC) conducted by the Australian Bureau of Statistics (ABS) in 2003 [23]. The SDAC contains information on demographic variables (eg, age, sex, family type, state of residence, and ethnic background), socioeconomic variables (level and field of education, income, benefits received), labor force variables (labor force participation, employment restrictions, retirement), and health and disability variables (chronic conditions, health status, type and extent of disability, support and care required). The 2003 SDAC covered both private and non-private dwellings, excluding gaols and correctional institutions. The

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