



The causal effect of retirement on health: New evidence from Australian pension reform

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HIGHLIGHTS

- The causal effect of retirement on health is assessed.
- Major reform to the Age Pension provides exogenous variation in retirement status.
- The reform caused a significant decline in retirement among Australian women.
- Retirement is found to have a positive impact on health.
- The results are common to objective and subjective health measures.

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ABSTRACT

The causal effect of retirement on health is studied using the Australian 1993 Age Pension reform to isolate exogenous variation in retirement status. Using instrumental variable methods we find that retirement has a positive impact on subjective and objective measures of health.

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1. Introduction

What is the impact of retirement on the health of individuals? Does an increase in pension entitlement ages, in conjunction with longer work times, contribute to a deterioration or improvement in population health during retirement? These are important questions from a social welfare and public policy perspective, and will become more important as population aging continues. However, these questions are very difficult to answer.

The main challenge in addressing these questions is to find exogenous variation in retirement status, eliminating potential reverse causation from health to retirement so that selection into

retirement – for example, due to poor health – does not confound the causal effect of retirement on health. Another obstacle to adequately answer these questions is how to appropriately measure different dimensions of health. Many population surveys only collect self-reported answers to general questions about overall health status.

Given these difficulties, several papers have explored the causal relationship between retirement and health using a variety of identification strategies and data from a range of countries. The common approach in these studies is to use variation in pension eligibility and retirement rates with limited measures of health outcomes. Conclusions are mixed with results varying by measures of health and the specific countries studied. For example, [Johnston and Lee \(2009\)](#) found retirement to have a positive short-term impact on mental health but not physical health in the UK; in contrast, [Coe and Zamarro \(2011\)](#) found a long-lasting physical health-preserving effects of retirement but no effect on mental health or cognitive ability in Europe. On the other hand, [Kantarci](#)

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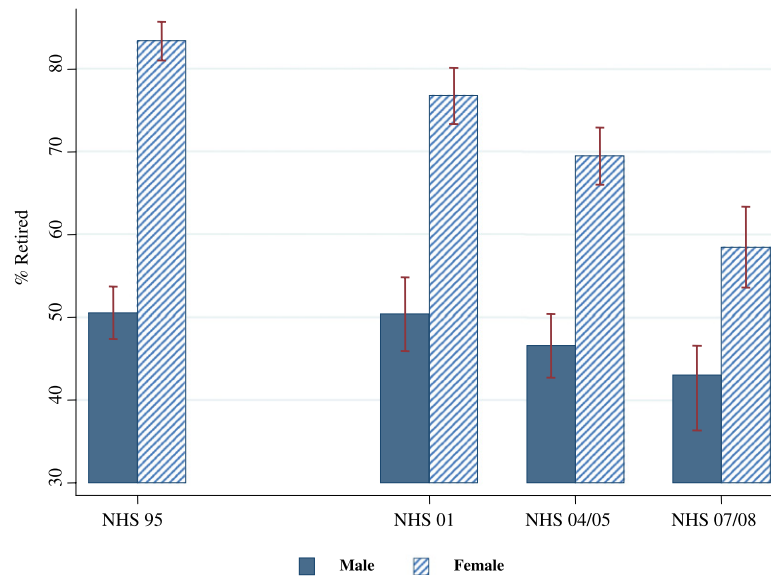


Fig. 1. Retirement incidence—ages 60–64 years.

and van Soest (2011) and Bonsang et al. (2012) report negative effects of retirement on mental health and cognitive ability in the US.

The objective of this paper is to contribute to this literature by using the 1993 Age Pension reform in Australia. This program reform increased the eligibility age for the Age Pension benefit for women, which unambiguously decreased their social security wealth. This within-country exogenous variation in women's retirement incentives provides an ideal experiment to examine the immediate and short-term impacts of retirement on health.

2. Age Pension reform and identification

The Australian Age Pension (AP) is a non-contributory scheme and benefits are means tested on the basis of family income and assets. Approximately 70% of the elderly population received some benefit from the AP, and the program more closely resembles a general entitlement rather than a tightly targeted benefit. Eligibility for the AP is subject to age conditions, with differing age requirements for male and female applicants. Since its inception, the AP qualifying age for men has remained at 65 years. Historically, the qualifying age for female applicants was 60 years. However, in 1993 the government announced the gradual increase in the female qualifying age. Beginning in 1995, the female qualifying age has progressively increased by six months for each subsequent 18-month birth cohort, until also reaching age 65 in 2014. The eligibility age for women belonging to different cohorts is summarized in Table 1.

Our identification strategy uses exogenous program reform-driven labor force participation increases for women to estimate the causal effect of retirement on health. Table 1 shows that during our observation period, women's eligibility age increased from 60 to 64.5, whereas men's eligibility age remained constant at 65. The constancy of the male eligibility age provides a relevance or 'placebo' test for our instrumental variable; the female AP eligibility age (a linear projection over birth-cohort indicators) should be irrelevant in explaining the work propensities of males.

3. Data and econometric strategy

The Australian Bureau of Statistics National Health Surveys (NHSs) for 1995, 2001, 2004/05 and 2007/08 are the primary data

Table 1
Australian Age Pension eligibility age.

Birth cohort	Age Pension eligibility age		Coverage of surveys Age 60–64
	Women	Men	
Before July 1, 1935	60	65	NHS95
01/07/1935–31/12/1936	60.5	65	NHS95-01
01/01/1937–30/06/1938	61	65	NHS01
01/07/1938–31/12/1939	61.5	65	NHS01
01/01/1940–30/06/1941	62	65	NHS01-04/05
01/07/1941–31/12/1942	62.5	65	NHS01-04/05–07/08
01/01/1943–30/06/1944	63	65	NHS04/05–07/08
01/07/1944–31/12/1945	63.5	65	NHS04/05–07/08
01/01/1946–30/06/1947	64	65	NHS07/08
01/07/1947–31/12/1948	64.5	65	NHS07/08
01/01/1949–30/06/1952	65	65	

source for the empirical analysis. Pooling the four independent NHS cross-sections provides a large sample of observations for individuals in the 60–64 year age range, who are our focus in analyzing the effect of retirement on health. Table 1 also indicates the coverage of birth cohorts in each NHS.

A key variable in the analysis is the retirement status of individuals. People who report that they are "not in the labor force" at the time of interview are classified as retired; otherwise, they are classified as participating in the labor force. Fig. 1 shows the incidence of retirement (and 95% confidence intervals) among the 60–64 year age group; the retirement rate for women decreased substantially over the past two decades while the retirement rate for males remained relatively stable.

We consider both subjective health measures (such as self-assessed health status) and objective health indicators (such as whether an individual suffers from anxiety or hypertension) to measure health outcomes.

Our empirical model for the immediate impact of retirement is given by

$$H_i = \beta_0 + \beta_1 \text{Retired}_i + \gamma X_i + u_i \quad (1)$$

where H_i is an indicator variable for individual i having a particular health problem, Retired_i is an indicator that the individual is retired and X_i is a vector of control variables which includes indicators for the individual's marital status, education, income decile and whether living alone. Estimating model (1) by ordinary least squares (OLS) is problematic because Retired and the error term

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