

The role of psychosocial work factors in the decision to retire early

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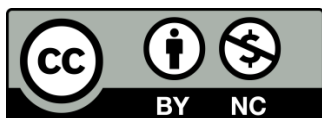
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Executive summary

Background and purpose

Australia's ageing population means there are economic and societal advantages to keeping older people engaged in the workforce. However, a substantial proportion of older workers retire well before the age at which they are eligible for the age pension. Common reasons for early retirement range from taking advantage of good health and economic circumstances to being forced to retire (partly or completely) due to poor health or working conditions.

We investigated the predictors of early retirement among middle-aged workers in the Canberra and Queanbeyan region. Of particular interest was the influence of unfavourable psychosocial working conditions like high job demands, low job control and high perceived job insecurity. Research has shown these factors affect physical and mental health, which we also expected to predict early retirement.

The study

We used data from the Personality and Total Health (PATH) Through Life Project being undertaken by the Centre for Research on Ageing, Health and Wellbeing at the Australian National University. The PATH project is an ongoing community survey of residents of Canberra and Queanbeyan. Participants from three cohorts aged in their early 20s, 40s and 60s at baseline are reinterviewed every four years. Since it commenced in 1999, the PATH project has investigated the intersection between work and health. In 2013, the fourth wave of the 40s cohort survey introduced new measures of work-related issues like bullying, injury, psychosocial environment, sedentary behaviour, shift work, days out of role and early retirement.

The present study involved about 2180 respondents from wave 3 in 2008–09 and about 1770 from wave 4 in 2013. In wave 3, most participants entered responses on a laptop during face-to-face interviews; a few who had moved from the study area sent their responses by post or email. Wave 4 participants entered responses in an online questionnaire.

Respondents were aged 48–53 years at wave 3 and 52–58 years at wave 4. Among the wave 4 respondents, about 5% reported that they had retired at wave 3 and another 15% had retired subsequently. Hence, almost 20% of the PATH respondents at wave 4 considered themselves retired. In order to study the working conditions at wave 3 that may predict retirement at wave 4, this study focused on the 15% of respondents who retired after wave 3 and were still in complete (7%) or partial (8%) retirement at wave 4. Those who considered themselves partly retired reported reduced hours of work, employment in a different type of work, or work with fewer responsibilities.

Key findings

The main self-reported reasons at wave 4 for deciding to retire completely were a perception of having reached an appropriate age to retire, or limitations of one's own health and functioning. In contrast, partial retirement was driven more by external circumstances such as the experience of job loss, lack of satisfaction with work, and caregiving responsibilities or family illness. Reflecting the relatively young age of respondents in this cohort, 10% of respondents who had completely retired and 19% who had partly retired reported that their decision to retire was to enable them to pursue other activities. This suggests that for many people early retirement is an active and engaging time.

About 18% of completely retired respondents received government pensions or payments as their main source of income, compared to 15% in the partly retired and 1% in the not retired groups. There were also differences across retirement categories in household income. The completely retired respondents were less likely to report very high income than both partly and not retired groups, and less likely to report very low income than the partly retired group. Consistent with this, those identified as completely retired were significantly less likely to report financial problems (6.8%) than those who were partly retired (15.4%) or not at all retired (13.8%). Therefore, complete retirement in this cohort is associated with more positive financial circumstances, mainly realised through access to superannuation, with relatively little reliance on government pensions.

Respondents employed in the government sector at wave 3 were more than twice as likely to retire completely at wave 4 as those employed in different sectors. There were no differences in the likelihood of partial retirement. Not surprisingly, age at wave 3 predicted complete and partial retirement at wave 4 among government and non-government employees. When other relevant factors are taken into account, complete retirement in government employees was also predicted by more days off sick and by perceived control over one's future. In addition to age, complete retirement in non-government employees was predicted by anxiety, whereas partial retirement was predicted by being in a non-managerial position and poor physical functioning.

Of particular interest, none of the measured psychosocial work factors (job demands, job control, or perceived job insecurity) predicted subsequent retirement at wave 4 after other factors were taken into account. However, high demands, low control and high insecurity were associated with poorer mental health and physical functioning, which in certain circumstances predicted retirement. Our findings therefore add to the mixed and sometimes complicated evidence for the role of psychosocial factors in older persons' participation in the workforce.

Implications

Our findings suggest that there is no single path to early retirement. In general, the literature supports this conclusion. This implies that designing ways to keep older people engaged in the workforce may not be straightforward.

For work health and safety policy, focussing on psychosocial work factors in order to keep older people at work longer may not have a significant impact, at least in the short term. However, improving psychosocial work conditions may prevent the development or worsening of physical and mental health problems in the long term, and this may contribute to better work ability and person-job fit for older workers.

Limitations of the study

The study had several limitations. With its relatively high proportion of employment in the government sector, the workforce in the Canberra/Queanbeyan region is not necessarily representative of Australian workers. Although the response rate between waves 3 and 4 was about 80%, some degree of non-response bias cannot be completely ruled out. Thirdly, the study was based mostly on self-reports, which can lead to biased or inaccurate responses.

1. Overview

1.1 Background

With an ageing population in Australia, there are economic and societal advantages to keeping people in the workforce for as long as possible. However, a substantial number of older workers retire before the age at which they can access the age pension, which is no younger than 65.5 years as of 1 July 2016 and 67 years from 1 July 2023 (<https://www.humanservices.gov.au/customer/services/centrelink/age-pension>).

Some older workers choose to retire early for lifestyle reasons, especially if they have access to adequate financial support (Mein et al. 2000). Numerous other reasons like poor physical health (Karpansola et al. 2004; Mein et al. 2000; Warren 2015), poor mental health (Harkonmaki et al. 2006; Rice et al. 2011), low socio-economic status (Li et al. 2008) or work-family conflict (Harkonmaki et al. 2006) force some older workers to retire well before a time they may consider ideal.

Prolonging older workers' healthy and productive participation in the workforce requires a better understanding of why they may leave early. However, the relative importance of what may be called 'pull' factors like financial options and 'push' factors like poor health is not completely clear. Push factors for early retirement may include unfavourable psychosocial working conditions like high job strain (Elovainio et al. 2005), low job control (Hintsä et al. 2015; Robroek et al. 2013) and poor job quality (Siegrist et al. 2007). They may also include workplace culture factors like low job satisfaction (Mein et al. 2000; Thorsen et al. 2016) and low organisational commitment (Sejback et al. 2012). However, the research evidence for the influence of psychosocial work factors on retirement decisions is mixed. For example, it is not clear whether observed associations depend on or are independent of factors like age, gender and socio-economic status (Harkonmaki et al. 2006; Hintsä et al. 2015).

Also unclear is the interrelationship between psychosocial working conditions, work health and safety (WHS) outcomes, and early retirement decisions. For example, do poor psychosocial working conditions influence early retirement through negative consequences like poor health or increased risk of injury? Alternatively, do unfavourable working conditions, in combination with other factors, lead to the decision to retire early regardless of the presence of negative WHS outcomes?

These are potentially important considerations in that psychosocial factors are largely controllable within the workplace. The inference therefore is that controlling psychosocial factors may not only promote WHS and productivity but also workforce participation among older workers.

1.2 Purpose of the study

We investigated the influence of workplace, personal, and societal factors on decisions to retire in a community sample aged 52–58 years. For the purpose of this study, 'early retirement' is complete or partial retirement well before the normal retirement age; that is, before eligibility for the age pension. Of particular interest was the role of manageable psychosocial work factors like job demands, job control (skill discretion and decision authority) and perceived job insecurity.

1.3 What we did

For this study we used data from the Personality and Total Health (PATH) Through Life Project being undertaken by the Centre for Research on Ageing, Health and Wellbeing at the Australian National University. The PATH project is a longitudinal community-based survey of a random sample of people living in the Canberra and Queanbeyan region. The project cohort aged in their mid-50s during the most recent fourth wave of data collection provides a unique opportunity to investigate the workforce participation transitions of Australian 'baby-boomers' and the reasons for their retirement. We expected that a considerable number of respondents in this cohort would have left the workforce by the fourth wave of the survey. Our analyses involved about 2180 respondents at wave 3 and about 1770 at wave 4.

1.4 What we found

Despite being aged 58 years or younger, almost 20% of the PATH respondents considered themselves retired at wave 4. About one-quarter of these respondents had been retired for at least four years (i.e. at wave 3). This study focussed on the remaining 15% of respondents who reported to be retired subsequent to wave 3 (about 7% completely retired and 8% partly retired). The partly retired respondents had reduced hours of work, employment in a different type of work, or with fewer responsibilities.

Employees in the government and non-government sectors generally had different self-reported reasons for complete or partial retirement. In addition, analysis of the longitudinal data found several health and job-quality factors, in addition to age, at wave 3 that predicted retirement at wave 4.

The higher levels of complete retirement amongst government sector employees probably reflects the availability of superannuation options. A link between poor physical and mental health and subsequent early retirement decisions was expected and shows the potential importance of these factors, not just for health and wellbeing but also for workforce participation.

Perhaps the most surprising finding was that none of the psychosocial work factors measured at wave 3 – namely, job demands, job control and job insecurity – predicted retirement at wave 4 after taking other factors into account. We anticipated that respondents who found themselves in unsatisfactory employment circumstances would be more likely to retire early. The results suggest that, at least in this cohort, this hypothesis does not hold. While high demands, low control and high insecurity at wave 3 were associated with poorer mental health, and low control and high insecurity with poorer physical functioning, this does not directly correspond to increased likelihood of retirement at wave 4. Box 1 contains highlights from the study.

Box 1: Highlights

The survey

Third and fourth wave of the middle-aged cohort of the PATH Through Life project

Wave 3 in 2008–09: about 2180 respondents aged between 48 and 53 years

Wave 4 in 2013: about 1770 respondents aged between 52 and 58 years

Main findings

Almost 20% of respondents were retired from work at wave 4. About 5% had retired by wave 3 and a further 15% (7% completely and 8% partly) were retired at wave 4 ('early retirement')

Working for the government increased the likelihood of early complete retirement

After analysing wave 3 government and non-government employees separately and taking into account the influence of other factors, higher likelihood of early retirement was found in ...

- Older employees in all sectors (complete and partial retirement)
- Government employees who had more days off sick (complete)
- Government employees with low perceived control (mastery) over their future (complete)
- Non-government employees with significant anxiety symptoms (complete)
- Non-government employees in non-managerial roles (partial)
- Non-government employees with physical functioning limitations (partial)

Neither high job demands nor low job control increased the likelihood of early retirement

1.5 Implications for work health and safety

A significant proportion of older workers will leave employment early – some completely, others partly. Some of this retirement will be involuntary, but much of it will be by choice, and for various reasons. In our study poor psychosocial working conditions were not among the reasons for early retirement. An implication of this finding for WHS is that, at least in the relatively short term, addressing psychosocial work factors is not likely to prevent many older workers from retiring early. The decision to retire early appears to be explained better by factors like age and health.

However, findings from the PATH project and many other studies suggest that psychosocial work factors increase the risk of physical and mental health problems. Therefore, the potential health and wellbeing benefits of addressing psychosocial work factors in the longer term are reasonably well-founded. For older workers these benefits may also have implications that encompass the concepts of work ability and person-job fit, both of which may influence workforce participation (see Section 4 for a brief discussion on this point).

1.6 Remainder of the report

The next section of the report describes the PATH project, including an overview of the survey sample and the data collection methods. Section 3 presents the key findings. It includes the results of a longitudinal analysis investigating the characteristics of respondents at wave 3 (i.e. before retirement) that predict subsequent retirement by wave 4. The report concludes in section 4 with a brief discussion of the findings in the context of recent literature. Section 4 also contains a brief description of the limitations of the study.

2. The PATH project

The PATH Through Life project is an ongoing longitudinal survey. It began in 1999 with a community survey of 7485 people from Canberra and Queanbeyan in south-eastern Australia. Potential respondents were identified via a simple random sample drawn from the electoral roll within three cohorts with birth years 1975–1979, 1956–1960 and 1937–1941. At the start of the survey, respondents in these cohorts were aged 20–24 years (the 20s cohort), 40–44 years (40s) and 60–64 years (60s). The initial rate of recruitment into the survey was between 58% and 65% across the three cohorts and the subsequent retention rate has been very high: a reinterview rate of between 87% and 93% across cohorts and waves. The Human Research Ethics Committee of the ANU has approved each wave of the study and all sub-studies. Participants are reinterviewed every four years.

2.1 The sample and data collection methods

The present report concerns the 40s cohort at waves 3 and 4. About 2180 respondents provided data in wave 3 by entering responses on a laptop during face-to-face interviews. About 1770 respondents provided data in wave 4 by entering responses in an online questionnaire.

Wave 3 survey

Data collection for the first three waves of the PATH project was primarily through face-to-face interviews. Survey interviews were conducted by highly trained interviewers, either at the participant's home or at the ANU. Interviewers travelled around Australia to locations where sufficient numbers of study participants had relocated; for example, major capital cities and the New South Wales south coast. Postal and email options have been offered to those who had moved to other areas interstate or internationally and where it has not been cost-effective to travel to conduct face-to-face interviews.

Although the PATH project was based on a personal interview, the data collected through the survey questionnaire was entered directly by the respondent on a laptop computer. This approach was used to maximise respondent privacy and reduce the potential impact of response bias. However, the interviewers did directly administer physical tests such as for blood pressure and forced vital capacity and cognitive tests.

Wave 3 data collection was completed in 2008–2009 when the 40s cohort participants were aged between 48 and 52 years. For the purposes of the present study, a total of 2182 respondents completed the survey, representing a 93% response rate from the cohort of potential respondents.

Wave 4 survey

The survey methodology for wave 4 of the 40s cohort adopted a somewhat different data collection approach. Respondents completed the survey questionnaire online. This approach is broadly consistent with the previous approach of completion on a laptop, though not at an agreed appointment time and not in the presence of an interviewer. Assistance with technical and content matters was available from the PATH project team at all times via a mobile phone number that was widely distributed to, and used by, the PATH participants.

In addition to the online survey, a sub-sample of respondents was selected to complete a face-to-face interview to enable the more intensive data collection aspects of the PATH project, including physical, psychiatric and cognitive assessment.

Overall 2171 respondents in the 40s cohort were in-scope and invited to participate in the wave 4 survey. The pool of potential PATH wave 4 respondents was divided into two distinct samples: those resident in the Canberra/Queanbeyan region who were offered a face-to-face interview (the face-to-face sample), and those resident outside of the local area who were only offered the opportunity to participate in the online survey (the online only sample). All participants, whether in the face-to-face sample or the online only sample, were given the opportunity to complete the online survey.

All 1545 potential respondents still resident in the local Canberra/Queanbeyan region were offered a face-to-face interview. A trained interviewer initiated contact via phone and arranged a time for the interview at either the respondent's home or at the PATH offices at the ANU. The interviewer encouraged respondents to complete the online questionnaire no more than two weeks before their face-to-face interview was scheduled.

The interviewers contacted the 626 potential respondents residing outside of the Canberra/Queanbeyan region by phone and invited them to participate in the online survey. A secure log-in and password was provided to all participants. A standard reminder protocol with reminder emails and follow-up phone calls was developed to follow-up non-responding survey members.

Wave 4 data collection was completed in late 2013. Of the 1545 potential PATH respondents still resident in the Canberra/Queanbeyan region, 1469 completed face-to-face interviews (95% completion rate). All respondents participating in the face-to-face interview were also encouraged to complete their online survey prior to their interview. Almost all respondents complied with this request. Several respondents who did not complete the face-to-face interview still completed the online survey. Of the 626 potential respondents not invited to participate in the face-to-face interview, 281 (45%) completed the online survey. For this study, a total of 1774 respondents (82%) completed the online survey.

Appendix A contains more details about the PATH 40s sample.

2.2 PATH research into work, health and retirement

Since wave 1, information has been collected on physical health and chronic health conditions, disability, genetic risk factors, early life adversity, past mental health problems, adolescent transitions, marital history and family formation, personality measures, physical activity, life stress and social support, diet, employment circumstances and occupational stress, anxiety and depression, substance use and cognitive abilities. Generally, the items and scales included in the PATH project are well established, widely used and validated instruments so as to facilitate comparison across studies and ensure data quality.

In successive waves of data collection, new questions have been added to assess major life transitions, significant life events, and lifestyle changes relevant to each cohort and age. Topics covered by recently added questions include changes in work environments, job characteristics, workforce status and retirement.

From the project's beginning, the survey for the 40s cohort has included a strong focus on the intersection between work and health. The project followed participants through the peak of their careers. The PATH researchers recognise that the workplace is an important context in which to promote health and wellbeing, and is also a potential source of health risks and adversities. Physical and mental health are central to efforts to increase productivity and workforce participation. Conversely, the social and economic consequences of disability and ill-health are manifest through low levels and disrupted patterns of workforce participation.

To date, the PATH project has included several standard measures of employment characteristics, including tenure, hours worked, occupation, and whether holding a supervisory or managerial role. The survey has also collected data on sickness absence, income and measures of financial deprivation. The unique opportunity presented by the PATH project is that these workplace factors can be examined in relation to the very detailed and extensive longitudinal data on mental health and wellbeing, physical functioning and chronic health conditions, disability and days out of role, linked administrative data on health service and medication use, and (innovatively) cognitive measures such as memory, processing speed and verbal intelligence.

A key focus of the previous and current wave of the 40s cohort is on retirement. The survey provides a unique opportunity to track a cohort of baby boomers across the workforce participation transition and investigate the factors associated with decisions to retire before reaching age-pension eligibility.

Respondents were asked whether they were fully or partly retired and, if partial, in what way they considered themselves partly retired. They were also asked about their age at retirement, reasons for retirement, and employment circumstances at the time of retirement. While the self-reported information on retirement is interesting, the real strength of the PATH project is the longitudinal data that enables consideration of how factors like health, socioeconomic circumstances and work characteristics are associated with subsequent early retirement decisions. Appendix B contains the PATH survey questions assessing the experience of retirement at waves 3 and 4.

Being a survey of the community rather than specific to the workplace alleviates concerns about the appropriateness of collecting information from workers about their lives outside of the workplace. As the survey examines personal experiences across the many domains of a person's life it enables comparison and consideration of the intersection of factors from different aspects of life, including work, family, social, health, cognitive and psychological domains. The community focus of the PATH project enables respondents to be followed as they move in and out of the workforce, as they change jobs, and as their responsibilities and duties at work change.

3. Key findings

3.1 Complete and partial retirement

At wave 3, the PATH 40s cohort was predominantly aged between 48 and 53 years: one respondent was 47 and 11 were 54 at the time of data collection. At that time fewer than 7% of respondents reported that they were retired, with about 3% completely retired and 4% partly retired. The majority of respondents retired at wave 3 were women (70%), which is unsurprising given women generally have an earlier age of retirement than men. In contrast, four years later in wave 4, with the sample now aged between 52 and 58 years, about 20% reported themselves to be retired (10.2% completely retired and 9.3% partly retired). The retired respondents were about a decade younger than the Age Pension eligibility age.

3.2 Previously retired

Although not the focus of this study, we briefly report on the current circumstances of those who were already retired at wave 3. When we consider their circumstances four years later at wave 4, we find that the majority of those who reported themselves to be completely retired remain completely retired (73%). In contrast, those at wave 3 who were partly retired are now almost evenly distributed across the categories of completely retired (31%), not retired at all (36%) and partly retired (33%). Thus, there is considerable variability over time in this partly retired category, consistent with the literature. Although small in overall numbers ($n = 26$), examination of respondents who changed from partly retired to not retired at all shows that most (69%) are working part-time, most do not report any financial problems (81%) and most are in a marriage or marriage-like relationship (77%).

3.3 The transition to retirement

Excluding the respondents who were retired at wave 3 left 1631 respondents who were the focus of the analysis of retirement transitions. Overall, 247 of these respondents (15%) were retired at wave 4: 7% ($n = 117$) had completely retired and 8% ($n = 130$) reported themselves to be partly retired. Of those now retired, only a handful ($n = 19$) were not actively employed at wave 3 (3 were unemployed; 16 were not participating in workforce).

The inclusion in the PATH project of a partly retired option reflects the concept of “bridge” employment (Ruhm, 1990). Rather than a binary state, some experience retirement as a gradual transition from a state of full-time employment to full-time retirement via a range of intermediate states and circumstances. These transition states could include a reduction in hours worked, change in the type or intensity of work, or a reduction in responsibilities at work. In recognition of the subjective and individual nature of the retirement transition, respondents were asked to report why they considered themselves as partly retired (see

Table 1).

In general, it seems most respondents who considered themselves partly retired did so because they had reduced their hours of work. A number of respondents also reported reasons that may reflect the desire for more autonomy over the nature of their work, a change in their type of work, or a change to a less demanding job. A limitation of this question is that it is limited to a single (main) response category. Thus it may be that many categories were applicable to an individual.

We also assessed the main reason why respondents reported that they retired. This item was asked of both the completely and partly retired respondents (Table 2). The results suggest that the decision to completely retire strongly reflects a perception of reaching an appropriate age to retire, or by limitations of one's own health and functioning; more so than those who are partly retired. In contrast, partial retirement was more driven by external circumstances such as the experience of job loss, lack of satisfaction with work, and caregiving responsibilities or family illness. Perhaps reflecting the relatively young age of respondents in this cohort, many (19% who had partly retired and 10% who had completely retired) reported that their decision to retire was to enable them to pursue other activities, suggesting early retirement is an active and engaging time for many.

Table 1 Why respondents considered themselves *partly* retired

Reason and classification	Per cent
Hours of work	62
Work fewer hours	24
Work only casually/occasionally	23
Plan or looking for part-time work	15
Type of work	6
Less demanding/fewer responsibilities	6
Greater autonomy	11
Work for self	9
Work from home	2
Change	14
Different line of work	6
Voluntary/charity work	8

It is important to keep in context the fact that 73% of those who reported themselves to be completely retired at wave 4 had worked full-time in their last job. Thus, while we are considering the concepts of transitional or bridge employment, it is clear partial retirement is not the pathway for all and that many move directly from full-time work to full-time retirement.

Table 2 Main reason why retired

	Completely retired (Per cent)	Partly retired (Per cent)
Appropriate age	45	23
Retrenched	17	22
Own illness/disability	16	11
Other activities	10	19
To look after family	4	8
Unsatisfied with job	3	9
Family illness/disability	2	6

3.4 Circumstances in retirement

A series of cross tabulations on wave 4 data found no statistically significant differences across the three retirement categories (completely retired, partly retired and not retired at all) in their gender profile ($\chi^2 = 1.49$, $df = 2$, not significant) or relationship status ($\chi^2 = 0.45$, $df = 2$, n.s.).

There were significant differences evident in main source of personal income ($\chi^2 = 1043.6$, $df = 14$, $p < .001$), reflecting receipt of superannuation by 60% of those completely retired vs 26% partly retired and 1% of not retired, and the inverse pattern for wage or salary (2% of completely retired, 28% partly retired and 86% not retired). Further, around 18% of completely retired respondents reported receipt of government pensions or payments as their main source of income, compared to 15% in the partly retired and 1% in the not retired groups. There were also differences across retirement categories in household income ($\chi^2 = 80.27$, $df = 10$, $p < .001$). Those who were completely retired were more likely to be in a middle income band between \$1075 and \$2400 per week (57%) than those who were partly retired (38% in this income band) and those not at all retired (40%). The completely retired respondents were less likely to report very high income than both partly and not retired groups, and less likely to report very low income than the partly retired group. Consistent with this, those identified as completely retired were significantly less likely to report financial problems ($\chi^2 = 11.61$, $df = 4$, $p < .05$; 93.2% no financial problems) than those who were partly retired (84.6%) or not at all retired (86.2%).

Therefore, in this cohort, complete retirement is associated with more positive (though not extremely positive) financial circumstances, mainly realised through access to superannuation, with relatively little reliance on government pensions.

3.5 Factors that predict subsequent retirement

After excluding respondents who were already retired at wave 3, we examined the characteristics of respondents reported at wave 3 that may predict subsequent retirement at wave 4. The analysis used multinomial logistic regression, with not retired as the baseline category for all models. That is, the models contrast the factors that are associated with complete retirement versus not retired, and partial retirement versus not retired in a single model. Table 3 shows the results for each of the predictors analysed individually and without adjustment for other covariates.

The analytical models consider a range of socio-demographic characteristics (age, sex, partner status), economic factors (household income), work characteristics (whether employed in the government sector, whether work part-time, hours worked per week [in quintiles], whether a manager or a supervisor), the psychosocial aspects of work (low skill discretion, low decision authority, high demands, perceived job insecurity), health (number of chronic physical conditions, high depression symptoms, high anxiety symptoms) and physical functioning (assessed by quintiles of the SF12).

Although the relationships are bivariate (one-to-one and unadjusted for other factors), the results in Table 3 show broad consistency in the factors associated with complete and partial retirement. Unsurprisingly, older age was associated with increased likelihood of complete and partial retirement at wave 4, increasing the unadjusted relative risk by 34% and 21% (respectively) for each additional year. Part-time work was associated with increased likelihood of complete and partial retirement. Perhaps surprisingly, long-work hours were associated with lower likelihood of complete and partial retirement.

Interestingly, low skill discretion was the only psychosocial work factor considered in this analysis that predicted wave 4 retirement status, although this was only statistically significant for complete retirement. Measures of health and wellbeing at wave 3 were more likely to predict retirement. For example, respondents with two or more chronic physical conditions were more likely to completely retire compared to those without such conditions. Similarly, respondents identified with the poorest physical functioning on the SF-12 Physical Component scale were almost three times more likely to completely or partly retire than those with the highest level of physical functioning. Experiencing significant depression symptoms doubled the likelihood of complete and partial retirement when no other factors were considered. Significant anxiety symptoms also increased the likelihood of both retirement outcomes.

Table 3 Unadjusted multinomial logistic regression analyses assessing the association between individual characteristics at wave 3 and complete or partial retirement at wave 4

		Completely retired (vs not retired)		Partly retired (vs not retired)	
		RRR	95% CI	RRR	95% CI
Age	Years	1.34	1.20–1.49	1.21	1.08–1.35
Gender	Male (ref)	1.00		1.00	
	Female	1.70	1.23–2.36	1.17	0.85–1.63
Partner	No partner (ref)	1.00		1.00	
	Married/de facto	0.77	0.52–1.14	1.22	0.77–1.94
Income	0-Lowest	3.05	1.79–5.21	2.41	1.33–4.36
	1	0.88	0.51–1.50	0.82	0.46–1.45
	2	1.03	0.67–1.60	0.98	0.62–1.56
	3	0.69	0.43–1.09	0.90	0.58–1.40
	4-Highest (ref)	1.00		1.00	
Sector	Government	2.24	1.60–3.15	0.96	0.69–1.34
	Other (ref)	1.00		1.00	
Employment	Full-time (ref)	1.00		1.00	
	Part-time	1.88	1.22–2.90	1.88	1.23–2.87
Managerial position	Manager	0.71	0.49–1.01	0.75	0.51–1.09
	Supervisor	0.73	0.45–1.17	0.53	0.30–0.93
	Non-manage (ref)	1.00		1.00	
Hours worked	0-shortest (ref)	1.00		1.00	
	1	0.76	0.42–1.39	0.76	0.42–1.38
	2	0.73	0.47–1.14	0.54	0.34–0.86
	3-longest	0.31	0.17–0.57	0.57	0.35–0.94
Job control					
Skill discretion	Low	1.52	1.04–2.12	1.18	0.81–1.71
	High (ref)	1.00		1.00	
Decision authority	Low	1.25	0.86–1.84	1.13	0.78–1.65
	High (ref)	1.00		1.00	
Job demands	Low (ref)	1.00		1.00	
	High	1.03	0.70–1.51	0.80	0.55–1.15
Job insecurity	Low (ref)	1.00		1.00	
	High	1.14	0.73–1.77	1.24	0.82–1.90

		Completely retired (vs not retired)		Partly retired (vs not retired)	
		RRR	95% CI	RRR	95% CI
Chronic physical conditions	None (ref)	1.00		1.00	
	1	0.90	0.62–1.31	0.84	0.57–1.23
	2 or more	1.54	1.04–2.27	1.27	0.85–1.92
Physical functioning (SF12)	0 Poorest	2.99	1.96–4.58	2.89	1.84–4.54
	1	1.91	1.21–3.00	1.77	1.09–2.89
	2	1.06	0.64–1.77	1.39	0.84–2.29
	3	1.35	0.69–2.64	1.52	0.77–3.00
	4 Best (ref)	1.00		1.00	
Depression	No (ref)	1.00		1.00	
	Yes	1.98	1.33–2.95	2.24	1.50–3.35
Anxiety	No (ref)	1.00		1.00	
	Yes	1.52	1.02–2.26	1.71	1.14–2.54
Sick leave	No (ref)	1.00		1.00	
	Yes	1.41	0.95–2.11	1.07	0.71–1.60
Mastery	Scale score	0.92	0.88–0.96	0.96	0.92–1.01

Notes: Ref=Reference category; Bold numbers are statistically significant ($p < .05$). Multinomial logistic regression is an extension of logistic regression, but is used for nominal outcomes where the dependent variable has more than two mutually exclusive and unordered categories. The association between the dependent variable and the predictor variable(s) is represented by a Relative Risk Ratio (RRR), which is the exponentiated regression coefficient. The estimates are unadjusted for the influence of other covariates.

Of interest were circumstances in which a predictor showed a different pattern of association with complete and partial retirement. For example, compared to men, women were 70% more likely to completely retire between wave 3 and 4, whereas there were no gender differences in the likelihood of partial retirement. Further, respondents employed in the government sector at wave 3 were more than twice as likely to completely retire as those employed in non-government sectors, whereas there were no differences in the likelihood of partial retirement. Finally, respondents with higher scores on the mastery scale (which reflects perceived control over one's future) were significantly less likely to completely retire than those with lower scores, whereas perceived mastery was not associated with likelihood of partial retirement.

Analysis by employment sector

Separating the analyses according to whether respondents were employed in the government or non-government sector at wave 3 produced different patterns of results. Government employees were more likely than non-government employees to be male and to work longer hours. They were also more likely to report low decision authority and high job demands, but less likely to report low skill discretion and job insecurity.

There was no difference between government and non-government employment in why respondents consider themselves partly retired, but there were differences in the main reason for retirement. For example, government employees were more likely to report being unsatisfied with their job and to nominate 'reaching an appropriate age'. In contrast those in non-government employment were more likely to report relative's illness, to look after family or, to pursue other activities. These differences possibly reflect the financial benefits for government sector employees of timing retirement correctly. It may also reflect a lack of support for those in the private sector in a caring role, which for some necessitates early departure from the workforce.

When we conducted the analyses separately for government and non-government wave 3 employees, complete retirement at wave 4 among non-government employees was associated with the following factors:

- age
- gender
- part-time work
- not being a manager
- shorter working hours
- physical functioning limitations
- depression
- anxiety, and
- low skill discretion.

Partial retirement in non-government employees was predicted by:

- age
- part-time work
- not being a manager
- shorter working hours
- physical functioning limitations, and
- depression.

Complete retirement at wave 4 among government employees was predicted by:

- age
- shorter working hours
- physical functioning limitations
- more sick days, and
- perceived mastery.

For government employees, age was the only factor associated with partial retirement at wave 4. This may point to the importance of an 'it's time' perspective for these employees.

As seen above and in Table 3, several health and job quality factors have a bivariate (one-to-one) relationship with early retirement, particularly for non-government employees. However, most of these factors did not predict retirement once other factors were taken into account in multivariate multinomial logistic regression analyses.

When other relevant factors were taken into account, complete retirement in government employees was predicted by age (RRR=1.42, 95% CI = 1.22–1.66), sick days (RRR=1.12, 95% CI = 1.02–1.24) and perceived mastery (RRR=0.93, 95% CI = 0.87–0.99). Age (RRR=1.30, 95% CI = 1.11–1.53) was the only predictor of partial retirement in government employees.

In addition to age (RRR=1.50, 95% CI = 1.06–2.12), complete retirement in non-government employees was predicted by anxiety (RRR=3.14, 95% CI = 1.11–8.89), whereas partial retirement was predicted by age (RRR=1.30, 95% CI = 1.03–1.65), not being a manager (RRR=0.21, 95% CI = 0.05–0.94), and physical functioning limitations (RRR=3.48, 95% CI = 1.36–8.89).

4. Discussion

We analysed data from the PATH project's 40s cohort to investigate patterns of early retirement and the factors associated with this outcome. Although the PATH participants were mostly aged in their early to mid-50s at wave 4, almost 20% were retired from the workforce. We focused our analysis on the 15% of respondents at wave 4 who had retired after wave 3. After excluding those who had retired at wave 3 and were still retired, about 7% of respondents were completely retired and 8% considered themselves partly retired, primarily having reduced their hours or type of work.

Respondents gave age and retrenchment as the major reasons for either complete or partial retirement. Other key reasons were pursuing other activities and own illness/disability, respectively. In contrast, a recent analysis of data from the Household Income and Labour Dynamics in Australia (HILDA) survey suggests that gradual transition to retirement is predicted by high levels of household income, long work experience and working partners (Warren 2015). In both studies, partial retirement was not the path to full retirement for all.

The patterns of retirement at wave 4 provided an opportunity for longitudinal analysis of the characteristics at wave 3 that may predict subsequent retirement. In general, those who had worked in the government sector were more likely to have completely retired than those in non-government employment. This probably reflects the availability of superannuation options.

Our results also suggest that, after taking into account all other factors, those who were more likely to retire were the most disadvantaged in the workforce at wave 3. For example, government employees taking more days off sick or with lower perceived mastery were more likely to retire, as were non-government employees who had physical functioning limitations, significant anxiety symptoms or were employed in non-managerial roles. As expected, age was a strong predictor of retirement in all employment sectors.

Our findings are broadly consistent with the literature. For example, the toll of poor physical and mental health on subsequent retirement decisions was expected. A recent study failed to find an association between poor health and early retirement after adjusting for various potential confounders (Robroek et al. 2013). However, Siegrist and colleagues (2007) found that having two or more symptoms of poor health or self-assessed poor health predicted the intention to retire early. Similarly, Karpsolo and colleagues (2004) found that self-assessed poor health increased the likelihood of early retirement after the age of 55 years. They also found that self-reported mental health problems, musculoskeletal disorders and cardiovascular disease increased the likelihood of early retirement, even after adjusting for potential confounders and illness at baseline (Karpsolo et al. 2004). Data from the HILDA survey shows that health limitations predict labour force participation (Warren 2015). Another study found that – depending on sex, education and lifestyle situation – self-assessed health and chronic health problems increased the likelihood of early retirement (Schuring et al. 2007). Interestingly, a recent qualitative study found that both poor and good physical or mental health predicted the decision to retire early (de Wind et al. 2013). From their interviews with people who retired between the ages of 60 and 64 years, de Wind and colleagues (2013) concluded the following:

poor health influenced early retirement due to a misfit between the job demands and the (perceived future) ability to perform the working tasks, without worsening health problems. Good health influenced early retirement due to a misfit between what people wanted to do in their lives while being in good health, and what they expected to be able to do while working (p. 300).

The strength of association between mental health (anxiety or depression symptoms) and early retirement shows the potential importance of these factors. Recent studies have found that having symptoms of depression increased the likelihood of retiring early (e.g. Rice et al. 2011). However, research has found the relationship between having depression symptoms and intention to retire early (as opposed to actual early retirement) to be statistically significant but not strong (Siegrist et al. 2007).

Our findings that being a government sector employee predicted complete retirement, points to a complex role for financial means. Whereas past research suggests that having good financial circumstances allow workers to choose early retirement, which accords with our findings, it has also found that financial problems tend to keep people at work (Mein et al. 2000). Being in control over one's working and financial circumstances may be an important factor. To support this notion, we found that the extent that workers perceive they have control over their future, or 'mastery', was strongly associated with complete retirement. Specifically, government employees with higher perceived mastery were less likely to retire completely.

A surprising finding was that unfavourable psychosocial work factors did not predict early retirement after other factors were taken into account. We anticipated that respondents who found themselves with high job demands, low job control or high job insecurity would be more likely to retire early than those not exposed to these conditions. The results suggest that, at least in this cohort, this hypothesis does not hold. This finding is in contrast to several recent studies that have found low job control to increase the likelihood of retiring early (Blekesaune & Solem 2005; Elovainio et al. 2005; Hintsa et al. 2015; Robroek et al. 2013). Studies have also found low job control to be associated with the intention to retire early (Harkonmaki et al. 2006; Siegrist et al. 2007). The evidence for job demands is less clear. For example, Mein and colleagues (2000) found an association between high job demands and early retirement in women but not in men.

Further evidence of the potentially complex relationship between job demands and early retirement comes from a study that found workers with stressful (demanding) jobs often delayed their retirement (Blekesaune & Solem 2005). Perhaps for these workers a certain degree of stimulation is an attractive job characteristic. In contrast, Blekesaune and Solem (2005) found that hard physical work increased the risk of early retirement.

Adjusting for demographics and self-reported health has been found to weaken the association between psychosocial factors, particularly job demands, and early retirement (Harkonmaki et al. 2006; Robroek et al. 2013; Thorsen et al. 2016). After adjusting for the influence of poor physical or mental health, a recent prospective study using data from the Danish National Working Environment Survey (DANES) failed to find significant associations between retirement and factors such as job demands, social support, or peer trust (Thorsen et al. 2016). Nevertheless, the study found job satisfaction to be the strongest predictor of retirement, suggesting that at least some psychosocial or workplace culture factors have an influence. Similarly, effort-reward imbalance, a psychosocial hazard similar in concept to demand-control, has been associated with intended early retirement (Siegrist et al. 2007).

Past research has found the individual components of job strain (high demands and low control) to be better predictors of early retirement (and other outcomes) than the combined factor (Robroek et al. 2013). Hence, we adopted the practice of investigating the effects of job demands and control (skill discretion and decision authority) separately. Other researchers have found mixed results using composite scores or interactions and main effects. Hence, we cannot rule out confounding of the psychosocial factors. For example, low job control might be related to other unmeasured work-related factors. Or, the concept underlying perceived mastery (sense of control over one's future) may also mediate the effects of perceptions of low job control. Also, as suggested above, job demands may act as either a reason for leaving or for staying in the workforce depending on the individual worker and their circumstances.

Although psychosocial work factors did not directly predict early retirement, these factors were associated with poorer mental health, at wave 3. Previous analyses of PATH data have consistently found strong associations between job strain, particularly when combined with perceived job insecurity, and depression (Broom et al. 2006; Leach et al. 2010; Strazdins et al. 2004). These findings are supported by systematic reviews that have consistently found associations between job strain and depression (e.g. Bonde 2008). However, Bonde (2008) noted that despite a common finding that high job strain increases the risk of depression symptoms, these studies are usually based on self-reports and cannot rule out bias and confounding; hence, a causal relationship between depression and job strain, or its components, remains unproven. Also, few studies examine initial-onset depression, which may have different risk factors than recurring or long-term depression (Bonde 2008).

Low job control and job insecurity were also associated with poorer physical functioning at wave 3. It is therefore feasible that there is an indirect pathway between psychosocial factors and early retirement through mental and physical health. However, this is difficult to demonstrate. The present study involved only two time points, four years apart. Also, there is no clear commencement or cessation date for any of the measures. Therefore, the length of exposure and the time between exposure and outcome cannot be judged, which makes conclusions about causality difficult. The timing factor may also have affected any direct relationship between psychosocial factors and retirement, especially if the effect is more immediate than allowed for by the analysis.

The present study looked at workers who retired before the age of 60, which may be better regarded as 'very early'. A recent study found that work factors like physical strain and commitment to the organisation are associated with very early retirement (Sejbaek et al. 2012). However, according to that study, work factors become less important among workers closer to the pension age (Sejbaek et al. 2012). This is also reflected in mixed recent findings about whether or not improving quality of work by, for example, reducing job demands and the need to acquire skills motivates older people to stay at work (Siegrist et al. 2007; Thorsen et al. 2016).

Unsurprisingly, our findings suggest that there is no single pathway to keeping older workers at work. For example, people who work are generally healthier and more financially secure than those who do not. However, as found in this study, some people take advantage of their good health and prosperity to leave the workforce early. Conversely, being in a bad job – such as one where the demands of the job exceed the capabilities of, or reward for, the worker – can make people ill or make their health problems worse.

Poor health is also related to the concepts of work ability and person-job fit, particularly in older workers. Work ability is the interaction of numerous personal, environmental and organisational characteristics that affect an individual's capacity to perform jobs satisfactorily and safely (Gould et al. 2008; Noone et al. 2014; van den Berg et al. 2010). Low work ability has been associated with poor health, low socioeconomic resources, financial hardship and impaired physical functioning (Ilmarinen et al., 1991; Noone et al. 2014). It has also been found to predict early retirement (Salonen et al. 2003). Work ability is similar to the concept of person-job fit; that is, the match between the abilities or desires of the worker and the demands or attributes of the job (Edwards 1991). Recent studies have found an association between person-job fit and job stress (Deniz et al. 2015).

The negative impact of low work ability or person-job-fit is illustrated further by recent research findings that staying at work longer than optimal may actually have a negative effect on health for some workers (Hallberg 2015). The potential combined and separate influences on retirement decisions of factors like personal health and financial means, and the potential health and wellbeing consequences of those decisions, requires further investigation.

Limitations

In addition to those mentioned above, the study had several other limitations. First, the Canberra/Queanbeyan region is not necessarily representative of all of Australia. For example, there are a relatively high number of government sector employees, many of whom have access to superannuation funds in their mid-late 50s. Therefore, the findings may not apply equally well to all older workers.

Although the response rate between waves 3 and 4 was high (about 80%), some degree of non-response bias cannot be completely ruled out. Thirdly, the study was based mostly on self-reports. This can lead to response biases, including bias from questions that lead respondents to form hypotheses for the cause of an outcome. However, the self-reported measures used by PATH have been well validated and shown to predict various health and other outcomes.

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Appendix A: Description of the PATH 40s cohort

This appendix uses survey data from waves 1 and 4 to describe the PATH sample. The description focusses on socio-demographic and employment characteristics.

What does the PATH sample look like?

When originally interviewed at wave 1, the respondents were aged in their early to mid-40s. The profile of the sample was broadly consistent with 2001 Australian census data for similarly aged residents of the Canberra and Queanbeyan region (Table 4). In comparison to the population, the survey participants had a somewhat higher socio-economic profile, with a greater proportion of respondents working in managerial positions, and higher rates of employment. These are characteristics that have been shown to be associated with higher rates of participation in research both in Australia and internationally.

Table 4 Wave 1 PATH 40s cohort compared to 2001 Canberra/Queanbeyan census data (per cent of age cohort)

	Males		Females	
	PATH	Census	PATH	Census
Registered marital status				
Married	74.2	67.6	68.8	65.6
Employment status				
Employed (full-time or part-time)	94.8	90.5	85.7	80.8
Education completed				
Bachelor degree or above	42.6	48.5	37.3	40.2
ASCO job classification				
Managers and administrators	30.3	19.2	12.7	11.8
Professional	27.3	29.0	31.8	29.7
Associate professional	18.3	16.1	17.4	14.4
Tradespersons and related	10.2	12.6	1.1	1.5
Advanced clerical and service	0.7	0.6	5.8	6.0
Intermediate clerical etc.	4.2	9.4	21.1	25.0
Intermediate production/transport	4.2	6.1	0.6	0.9
Elementary clerical-sales/service	2.6	3.5	7.2	7.5
Labourers and related	2.2	3.6	2.3	3.2

Notes: Some PATH variables do not sum to 100% due to a small amount of missing data; ASCO: Australian Standard Classification of Occupations.

Examining data from all wave 4 survey respondents who participated in the online survey, a little over half of all respondents were female (53.6%) and 68.8% reported that they were married or in a de facto relationship. Eighty-seven per cent of the respondents had children. Two-thirds reported that they had completed over 15 years of education or training. Just 9.6% were currently smokers and 45.7% reported that they consumed alcoholic drinks weekly or less frequently.

Comparison of wave 4 face-to-face and online-only samples

There is broad consistency between the two different groups of respondents in the face-to-face and online-only samples on key socio-demographic measures. For example, 55% of respondents in the online-only sample were female compared to 53% in the face-to-face sample (χ^2 test of association = 0.41, df = 1, p = 0.52). The two groups also did not differ in terms of partner status, occupational skill level, and having children. However there were differences in labour force status, 71.7% of respondents in the online-only sample were currently employed and 23.4% were not in the labour force compared to 83.5% and 13.5% for those in the face-to-face sample (χ^2 = 23.7, df = 3, p < .001). Those in the face-to-face sample were more likely to be employed in the for-profit and not-for-profit (NGO) sectors rather than the public sector (χ^2 = 17.05, df = 3, p < .001).

Who isn't participating in the workforce?

In total 81.5% of wave 4 respondents were employed: 63.9% in full-time work and 17.6% were working part-time. Most part-time workers (74.1%) were women and considered from the other perspective around 24.3% of working women were employed part-time.

Unemployment was an uncommon state with just over 2% of respondents (n = 43) unemployed at the time of the interview. However, just 7% of respondents reported that they had been 'sacked' or became unemployed at some point during the previous 12 months, and 10.2% of respondents thought they would soon lose their job. There were 16% of respondents who were not actively participating in the workforce; that is, neither working nor actively looking for work. This group primarily comprised adults defined as not participating in the labour force (n = 273), with a small proportion (n = 17) on long-term leave and still with some attachment to their previous employer. Among those not in the labour force, around 62.3% were women and the majority (around 64%) reported being completely retired with a further 22% reporting being partly retired. were involved in caregiving for children or an aged or disabled person or reported that they were in a home duties role.

This profile of workforce participation is not unexpected given the age and life stage of the sample. PATH participants were aged in their mid-50s and as described above most were in a relationship and had children. On average, respondents had 2.6 children with the youngest child aged 22 years.

The survey data provides other insights into the workforce history of participants. Although around 17% of respondents were unemployed or not participating in the labour-force at wave 4, all but 2% of these did report some prior work history. Thus employment is the dominant norm for this cohort. Just less than one third of those currently not working had been out of the workforce for less than one year, and around 50% for less than two years. This seems, therefore, a key age at which to begin to capture early retirement transitions.

Even among those who were currently in the workforce, their work experiences were not static. Participants reported considerable change in their employment circumstances over time. As mentioned above, 7% reported an experience of unemployment in the previous 12 months. Moreover, 47% reported that they had changed jobs since their previous PATH interview four years earlier.

The profile of workers from the PATH project

Details of the socio-demographic (Table 5) and work (Table 6) characteristics of the employed PATH wave 4 respondents are presented below. Consistent with the overall sample profile reported above, there were somewhat more female than male respondents, and most respondents had a partner and children. Reflecting the location in the Canberra/Queanbeyan region, half of the working respondents were employed in the government sector (either Commonwealth or State/Territory government)¹ and most were employed in professional or semi-professional occupations according to broad classification of ANZSCO² codes. While this may raise concerns about the generalisability of the research findings, it is important to recognise that occupational cohorts are also subject to limitations to generalisability. Further, some of the most profound insights in epidemiological research have come from well-studied and documented cohort studies which themselves had limitations around generalisability; for example, the Whitehall study, the Framingham study and the British Doctors study. A necessary feature is the presence of variability in exposure levels that can be linked to outcomes and a justifiable assumption that while the sample may not be representative of the broader population on all characteristics, the relationship observed between exposures and outcomes is similar in the population examined as in other populations.

Although the population of Canberra/Queanbeyan region may differ in some ways from the broader Australian population, there is representation in the sample across important socio-demographic dimensions such as social disadvantage and employment circumstances. Although at an average population level the Canberra community is relatively advantaged, this prosperity is not shared evenly among all residents and around 13% of Canberra households are in the bottom national income quintile. Further, the town of Queanbeyan does not share Canberra's socio-economic advantage and is closer to the national average on a variety of economic measures (see Butterworth et al. 2009). There is no reason to anticipate that the association between insecure employment and depression or between experience of workplace bullying and suicidal ideation would be different in the PATH cohort to what one would observe in a sample drawn from another Australian town or city.

Other features of the sample include the fact that half of the respondents were employed in managerial or supervisory roles; the majority had permanent employment; and on average respondents worked just on 40 hours per week. This last figure is slightly deceptive as it combines hours worked for those working part-time and full-time. Differentiating between these two groups shows that the mean hours worked per week are 44.5 hours for those employed full-time and 26.0 hours for those employed part-time. It is important to recognise that the results reflect the career stage, experience and seniority of cohort of workers. While the findings may not generalise to the overall population across all ages, this is a design feature of the PATH project, with other cohorts (e.g., the 20+ cohort) representing a similar detailed investigation of a younger sample of respondents. Around one fifth of respondents had taken at least one day of sick leave during the four week period prior to their interview.

Based on answers to the Patient Health Questionnaire (PHQ) it is estimated that 17.7% of respondents to the PATH 40s cohort wave 4 survey experienced some level of depression symptoms: 9.0% at the sub-syndromal level, 3.1% with minor depression and 4.5% with major depression. As expected based on the existing literature, women were more likely to report depression symptoms than men (20.2% vs 14.8%). These results are broadly consistent with expectations based on existing evidence. For example, analysis of data of 52–58 year old respondents in the nationally representative 2007 National Survey of Mental Health and Wellbeing found that 2.4% of respondents were identified with a 30-day affective disorder while 9.5% were identified with a 30-day affective or anxiety disorder.

¹ Note that data distinguishing between Commonwealth and State/Territory public sector workers is not available in all previous waves of the PATH project.

² ANZSCO: Australian and New Zealand Standard Classification of Occupations

Table 5 Socio-demographic characteristics of respondents from wave 4 of the PATH 40s cohort

Characteristic	Statistic
	Number
Total respondents	1806*
Employed	1466
Per cent of those employed	
Sex	
Male	48.4
Female	51.6
Age (at time of interview)	
52–53 years	20.6
54 years	21.5
55 years	18.3
56 years	20.3
57–58 years	19.2
Partner status	
No partner	16.9
Partner (marriage or de facto)	83.0
Children	
No	10.7
Yes	89.3
Household income	
< \$1075 per week	12.8
< \$1700 per week	18.5
< \$2400 per week	25.5
\$2400+ per week	43.0
NA	4.3

* Includes 1774 who completed the online survey and 32 who completed the face to face survey only.

Table 6 Employment characteristics of respondents from wave 4 of the PATH 40s cohort

Characteristic	Statistic
	Number
Total respondents (n)	1806*
Employed (n)	1466
Per cent of those employed	
Employment status	
Employed full-time	78.4
Employed part-time	21.6
Employment sector	
Public sector – Commonwealth	36.4
Public sector – State/Territory	15.6
Private sector	33.0
Not for Profit/other	14.7
Occupational skill level	
Professional	71.1
Semi-professional	11.5
Trade/manual	8.5
Other	8.9
Managerial position	
Manager	34.4
Supervisor	15.8
Non-management	49.4
Employment type	
Permanent	87.8
Fixed-term contract	5.5
Casual	6.7
Sick leave during last 4 weeks	
Yes	20.2
No	79.8

Characteristic	Statistic
Days away in last 4 weeks	
0	81.9
1	6.5
2	4.5
3	2.5
4	1.1
5	0.9
6+	2.2

	Mean	Interquartile range
Hours worked per week	40.5	36 to 50

* Includes 1774 who completed the online survey and 32 who completed the face to face survey only.

Appendix B: Key PATH items used in this study

Retirement questions

A key focus of the previous and current wave of the 40s cohort is on retirement. The survey provides a unique opportunity to track a cohort of baby boomers across the retirement transition and investigate the factors associated with decisions to retire early. The online questionnaire included a module of items that assessed whether respondents were fully or partly retired and in what way they considered themselves partly retired. The survey also assessed the relationship between respondents' current employment and their "main career" occupation. It investigated age at retirement, reasons for retirement, and employment circumstances at the time of retirement. While the self-reported information on retirement is interesting, the real strength of the PATH data is through longitudinal analysis that enables consideration of how factors such as health, socioeconomic circumstances and the characteristics of work are associated with subsequent early retirement decisions. The following questions were asked about retirement:

Do you consider yourself to be completely retired from the paid workforce, partly retired or not retired at all?

(Completely retired / Partly retired / Not retired at all)

In what sense do you consider yourself partly retired?

(You work fewer hours / You work in a less demanding job or a job with fewer responsibilities / You work in a completely different line of work / You work only casually or occasionally / You work for yourself / You work more from home / You do voluntary or charity work / Currently looking for part-time work / Plan to look for part-time work in the future /Other)

How old were you when you retired, either partly or completely?

(_____ years).

What is the main reason you chose to retire (either partly or completely) or you left your last job?

(Last job was temporary / Retrenched/laid off/made redundant/business closed down / Unsatisfied with job / Reached appropriate age for retirement / Own illness, disability or injury / Relative's illness, disability or injury / To have children / To look after family / home / To pursue other activities)

Were you working part-time in your last job before you retired?

(Yes-part-time / No-full-time).

Psychosocial job characteristics – Job strain and perceived insecurity

Job strain theory, or the job demands-control model, posits two important dimensions of the psychosocial work environment: psychological demands and decision latitude (Karasek 1979). Demands reflect the level of workload and responsibility placed on an individual. Decision latitude is often referred to as 'control'. The theory differentiates two aspects of job control: having control over the way one works, including the content and timing of work (decision authority) and having control over one's experiences or opportunities, including variety and the opportunity to use and develop new skills (skill discretion). While these different aspects of work have been shown to be associated with health outcomes, the theory posits that it is the combination of the two dimensions (demands and control) that is critical (Figure 1).

High-strain jobs, characterised by the combination of high job demands and low levels of control over how these demands are managed, are most strongly associated with adverse health outcomes including mental and physical health conditions. In contrast, jobs that may entail high demands but in which workers have adequate control over how this work is done and the skills that they utilise to undertake this work (labelled as active jobs) do not lead to greater risk and are thought to be associated with increased motivation and satisfaction. Low-strain jobs (low levels of demands and high levels of control) are thought to be protective of health, while the passive jobs (low levels of demands and low levels of control) may be demotivating and also have adverse psychological and health effects through processes similar to learned helplessness.

	Low demands	High demands
High control	Low strain	Active
Low control	Passive	High strain

Figure 1 Job strain model – interaction of demands and control

In the PATH study, job strain is measured by 19 items taken from the Whitehall study (Bosma et al. 1997) which adapted the items from the original Job Content Questionnaire (Karasek 1979). This is a version of job strain commonly used in large-scale epidemiological studies. Job demands are assessed by four items like ‘Do you have to work very fast?’ and job control is measured by 15 items like ‘Others take decisions concerning my work’. All items had four response categories (1 = ‘often’, 2 = ‘sometimes’, 3 = ‘rarely’ and 4 = ‘never’).

Perceived job insecurity was assessed by the question ‘How secure do you feel about your job or career future in your current workplace?’ There were four responses categories (1 = ‘not at all secure’, 2 = ‘moderately secure’, 3 = ‘secure’ and 4 = ‘extremely secure’).

Socio-demographic characteristics

The PATH project assesses a comprehensive range of socio-demographic measures including age, gender, relationship status (married and de facto), and household income (wave 3 onwards).

Employment characteristics

The PATH project has also assessed various employment characteristics, including the following:

- whether employed, unemployed and actively looking for work, or not in the labour force
- whether employed full-time or part-time
- whether or not previously employed full-time
- whether or not current part-time work is in the same field as the main career/ job
- whether employed by a Commonwealth or state/territory government, the private sector, or a non-government organisation, and
- whether in a supervisory or managerial role.

Weekly working hours was based on the question ‘How many hours do you work in a routine week (including unpaid overtime, work taken home, etc.)?’

Mental and physical health

Respondents were identified as experiencing significant depression symptoms using the Patient Health Questionnaire (Spitzer et al. 1999) which is a self-completion measure of depression based on the classification criteria in DSM-IV, and assesses the experience of depression symptoms in the past two weeks. Respondents identified with major, minor or sub-syndromal depression according to the scoring protocols of the Patient Health Questionnaire (PHQ) depression scale were classified with significant depression symptoms for the analyses presented in this report.

Anxiety was assessed using the Goldberg Anxiety scale (Goldberg et al. 1988). Respondents indicating seven or more symptoms were classified as with significant anxiety symptoms.

The survey assesses experience of a range of chronic physical conditions like cardiovascular conditions, arthritis, diabetes, and asthma. Physical functioning and self-assessed health status were assessed with the 12 item Short Form Health Survey (SF12) developed for the Medical Outcomes Study by the Rand Corporation (Jenkinson et al. 1997; Ware et al. 1996).

Personality

Perceived control over one's future, or 'mastery', was measured using a 7-item scale developed by Pearlin and colleagues (1981). This scale was created for use in community-based samples and includes items like 'I have little control over the things that happen to me'. Each item used a 4-point Likert-type scale (1 = 'Strongly Disagree' to 4 = 'Strongly Agree'). Total scale score ranged from seven to 28 with higher scores indicating a greater sense of mastery over life-affecting forces.