

## Article

# Psychosocial job quality in a national sample of working Australians: A comparison of persons working with versus without disability<sup>☆</sup>



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## ABSTRACT

**Objectives:** There is growing international policy interest in disability employment, yet there has been little investigation of job quality among people working with disability. This study uses Australian national data to compare the psychosocial job quality of people working with versus without disability. **Methods:** We used 10 annual waves of data from a large representative Australian panel survey to estimate the proportion of the population experiencing poorer psychosocial job quality (overall and by individual 'adversities' of low job control, high demands, high insecurity, and low fairness of pay) by disability status and impairment type. We used logistic regression to examine the pooled cross-sectional associations between disability and job quality, adjusting for age, sex, education and job type.

**Results:** Those working with any disability showed approximately 25% higher odds of reporting one or more adversity at work (OR: 1.23, 95% CI: 1.15, 1.31), and this finding was consistent across impairment types with the exception of intellectual/developmental disability. Estimates were largely unchanged after adjustments. Similar results were found for reporting two or more adversities compared one or more.

**Conclusions:** We observed that working people with a disability in Australia reported systematically poorer psychosocial job quality than those working without disability. These results suggest the need for further research to understand the reasons for these patterns, as well as policy and practice efforts to address this inequity.

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## Introduction

In Australia and internationally, there is a renewed national policy focus on narrowing the difference in labour force participation between working age people with versus without disability. The Australian Bureau of Statistics reported that labour force participation

rate for people with disability was 54% in 2009, versus 83% for those with no disability (Australian Bureau of Statistics, 2012). The gap in labour force participation for those with and without disability increased with age (e.g., people with a disability aged 55–64 had a 40% participation rate). People with sensory and speech impairment had the highest rate of labour market participation (54%, with a 7% unemployment rate), while those with psychological impairments had the poorest (29% participation rate, with 19% unemployment). Unsurprisingly, disabled persons with 'employment restrictions' had lower participation rates (46%) than those without restriction (71%). Still, one fifth of those with disability who were not working reported no employment restriction, meaning it was not disability per se that prevented them from being in paid employment. Overall, occupations were similar for those with and without disability; however there was some variation by impairment type. A third of those with intellectual impairments were employed in low skill jobs (such as cleaners), while

<sup>☆</sup>What is new in this paper and what are the policy implications. This study is among the first to investigate the psychosocial quality of jobs held by people with a disability. We found that psychosocial job quality is systematically worse for working people with a disability. These results suggest the need for further research to understand the reasons for these patterns, as well as policy and practice efforts to address this inequity.

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20% of those with sensory and speech impairments were in professional occupations.

There has been little empirical research on the quality of the jobs held by people with disability despite the fact that Article 27 of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), to which Australia is a signatory, recognises the rights of people with disability to work on an equal basis to others including the right “to just and favourable conditions of work, including equal opportunities and equal remuneration for work of equal value, safe and healthy working conditions” (United Nations, 2006). Such knowledge could inform the design of jobs, programmes, and policies to enhance the employment of people with disability and serve as a baseline from which to monitor progress in the area into the future. Filling this gap in knowledge is particularly relevant in the Australian context, where a National Disability Insurance Scheme (NDIS) was legislated in 2012 (Productivity Commission, 2011) and is currently being pilot-tested in selected Australian locations, with rollout of the full scheme anticipated in mid-2016 (National Disability Insurance Scheme, 2015). The NDIS aims to enhance the individualised focus of support and services accessed by those with disabilities in order to better meet their personal goals and aspirations, which can include paid work or other community participation. The financial viability of the scheme is premised on narrowing the disability employment gap by increasing employment opportunities and the sustainability of employment for persons with disabilities. The quality of these employment opportunities will likely play a role in the effectiveness of uptake, and the sustainability of employment for people with disability.

It is well-established that work can influence health and wellbeing in both positive and negative ways (Ross & Mirowsky, 1995; LaMontagne & Keegel, 2009; van der Noordt, IJzelenberg, Droomers, & Proper, 2014). There also evidence that persons with disability have poorer health and wellbeing compared to others, which is at least partly explained by the disadvantaged socio-economic circumstances in which they live and work (Honey, Emerson, & Llewellyn, 2011; Emerson, Llewellyn, Honey, & Kariuki, 2012; Emerson & Hatton, 2007). Hence, attention to optimising the quality of employment for people with disabilities, and at a minimum ensuring equal working conditions to those without disability, should be a guiding principle of programme and policy development, as it may increase the attractiveness of paid employment, optimise the influence of such work on health and wellbeing, and enhance the sustainability of employment for people with disability.

To address this gap in knowledge, we compare the psychosocial job quality of working people with disabilities to those without, both overall and stratified by impairment type (e.g. sensory and speech, psychological, physical) and gender. We focussed on a measure of psychosocial job quality which has been shown to have predictive validity in relation to health outcomes, and is available in a large nationally-representative longitudinal sample of working Australians—the Household Income & Labour Dynamics in Australia (HILDA) survey (Butterworth et al., 2011a, 2011b). Specifically, we investigated whether psychosocial job quality (each of 4 domains and overall) differed among working people with, versus without, disability (disability overall, and stratified by impairment type and gender).

## Method

### Data

This analysis uses data from the HILDA survey. The survey covers a range of dimensions including social, demographic, health and economic characteristics. The HILDA survey has been conducted in annual waves since 2001. The original panel consisted of 13,969 individuals from 7682 households, randomly selected for the HILDA study using a

multi-staged approach; 488 census collection districts (the smallest geographic area defined in the Australian Standard Geographical Classification (ASGC) comprising an average of about 225 dwellings) across Australia were selected, within each of these districts between 22 and 34 dwellings were selected, and within each dwelling up to three households were selected (Watson, 2008). All household members older than 15 years of age were eligible for interview. The survey collects detailed information using a combination of face-to-face interviews with trained interviewers and a self-completion questionnaire at each annual wave.

The initial household response rate at wave 1 was 66%. Retention of responding individuals at subsequent waves was 87% at wave 2 and > 90% thereafter (Wilkins & Warren, 2013). Over time, new respondents have entered the sample as non-respondents have consented to participate, young household members reached the age of 15 years, or with changes in household composition; for example, if a household member left his or her original household (e.g. children leave home, or a couple separates), an entire new household joins the panel.

We analysed data from 10 waves of the survey, from 2003 and 2012, as only these waves included questions about the type of impairment. The analysis is restricted to employed respondents who completed the questions assessing psychosocial job quality. Respondents did not complete the questions relating to job quality if 1) they were not currently in paid work (36.34%) or 2) they did not return the self-completion questionnaire section of the survey (10.24%). Fig. 1 outlines participant flow into the sample included in these analyses.

### Measures

#### Outcome variable

Full details of the construction and validation of the psychosocial job quality measures are presented elsewhere (Butterworth et al., 2011a; Leach, Butterworth, Rodgers & Strazdins, 2010). Briefly, factor analysis and structural equation modelling of a module of 12 items which assessed psychosocial aspects of work identified three separate factors. These were job demands and complexity (four items,  $\alpha=0.70$ ), job control (three items,  $\alpha=0.82$ ), and perceived job security (three items,  $\alpha=0.64$ ). The scales demonstrated predictable associations with more widely used measures of job demands and control (Leach et al., 2010) and other employment conditions such as casual

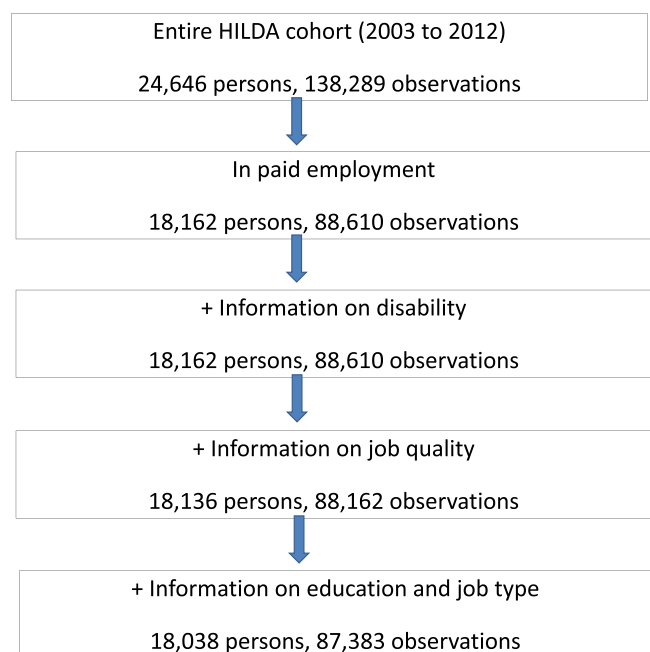


Fig. 1. Participant flow into the analytic sample.

status, hours worked and shift work (Butterworth et al., 2011b). For respondents with partial missing data, scale scores were based on completed items and weighted to the expected total had all items been answered. A single item that assessed whether respondents considered that they were paid fairly for their efforts at work was included as a fourth factor measuring one aspect of effort-reward imbalance.

To develop an overall scale of psychosocial job quality, factor scores for all respondents across all waves were dichotomised at the scale point closest to the first quartile of each distribution corresponding to greatest adversity (e.g., high job demands and complexity, low job control, high job insecurity, and unfair pay), and a composite measure constructed by summing the number of adverse psychosocial job conditions (score of 0–4). We created an overall binary measure with categories of 'no adversities' and or 'at least one adversity'; a previous study using HILDA data has shown that mental health is significantly worse with one adversity versus none (Butterworth et al., 2011a).

#### Exposure variables

The measure of disability used in the HILDA survey was based on the definition used in the International Classification of Functioning, Disability and Health (World Health Organization, 2011). Participants were asked if they had an 'impairment, long-term health condition or disability which restricts their everyday activities that had lasted, or was likely to last, for a period of six months or more'. While this question was being asked, specific examples of long-term conditions were presented on a showcard, such as limited use of fingers or arms, or problems with eyesight that could not be corrected with glasses or contact lenses, which were used to categorise reported disabilities into 17 long-term conditions. These questions were introduced into the HILDA questionnaire in 2003 and asked at every subsequent wave. People with disability were classified into five non-mutually exclusive impairment types (more than one can be reported by a single participant): sensory and speech; physical; intellectual; psychological and 'type not specified'. While we do include the 'type not specified' group in the overall disability sample, we do not report specific estimates for this group as they are too heterogeneous to meaningfully interpret.

#### Other variables

Potential confounders were identified from existing literature as being important determinants of job quality and/or correlates of disability. We included age as a continuous variable, gender (male or female) and highest educational attainment (postgraduate degree, bachelor degree, certificate or diploma, completed year 12, not completed year 12). We also included two key measures of the type of job, (1) occupational skill level (low, medium, high) and (2) employment arrangement (permanent, temporary [casual or labour hire], fixed term and self-employed) (LaMontagne et al., 2014).

#### Statistical analysis

Using 10 waves of the HILDA data from 2003 to 2012, we analysed all waves with valid data for disability status and psychosocial job quality. For descriptive purposes, we calculated population weighted summary statistics on the proportion of the observations reporting each job adversity by overall disability status and impairment type.

We used logistic regression models to examine the pooled cross-sectional association between contemporaneously-measured (from same wave) disability and psychosocial job quality using robust estimators of variance to control for within-person and household clustering of observations. We initially adjusted for only age and sex, subsequently adding education to the models, then also including occupational skill level and employment arrangement.

A number of sensitivity analyses were conducted to test the robustness of our results. As a more stringent outcome, we also investigated an overall measure with 'two or more adversities' (in

addition to the main analysis on one or more). We also examined whether results differed when only including those with complete psychosocial adversity data in the overall job quality measure, and restricting the sample to a narrower working age population (25–64 years of age).

## Results

### Description of sample

The analytic sample consisted of 87,383 observations from 18,038 people (Fig. 1). For some people, there were no waves with disability reported (consistently non-disabled waves: 12,266 persons, 53,071 observations). For some others, disability was reported for all contributed waves (1392 persons, 3696 observations). Finally, an intermediate number of people contributed a mixture of disabled and non-disabled waves (4380 persons, 30,616 observations). In Table 1, we present demographic information on the sample, combining all waves with disability reported contrasted with all waves without disability reported (first two columns), with the observations contributed by persons who reported both disabled and non-disabled waves disaggregated accordingly into the two groups (first two data columns). Consequently, there were 16,646 people (12,266+4380) reporting disability for 73,204 observations (83.8% of observations) and 5772 people (1392+4380) reporting no disability for 14,179 observations (16.2% of observations).

The majority of reported impairments were physical impairments (53.1% of those with any disability) while the smallest group was for those with intellectual impairments (2.8%) (Table 1). Those with a disability were on average older than those without disability. There were slightly more males in both the disability and no disability groups as expected, given this was an employed sample and males have higher levels of labour force participation. This was, however, not consistent across the impairment groups with a much higher proportion of males with sensory and speech impairments working (69.1% males) and fewer working males with psychological impairments (41.4%). Educational attainment was noticeably different across the groups: people with disability had lower levels of high school and bachelor degree attainment but more certificate/diplomas. Those with physical and psychological impairments more commonly completed bachelor degrees, and those with sensory and speech impairments more commonly attained certificate/diplomas. The proportion of those not completing high school was similar across the disability sub-groups, approximately 25–28%, though far lower among those with intellectual impairments (50.3%). Occupational skill level was similar across the overall disability and no disability groups, however there was a considerable difference for those with intellectual impairments where over 50% were in low skill level jobs. Employment arrangements differed for those with and without disability; people with a disability had fewer permanent positions (51.7% versus 58.1%), but more self-employment (20.4% versus 14.7%). Levels of self-employment were highest among those with sensory and speech impairments (25.2%), while permanent employment was highest for those with physical impairments (50.3%).

### Prevalence estimates

Table 2 shows the population weighted prevalence estimates for each indicator of job quality, according to disability status and impairment type. The prevalence estimates include data on all employed persons with data on disability status (18,162 persons and 88,610 observations), slightly more than included in the regression models when adjusting for potential confounders. Our estimates show that people with disability have lower overall psychosocial job quality, with 76.8% (95% CI: 75.6, 77.9) reporting one or more adversity

**Table 1**  
Characteristics of the sample, by overall disability status and impairment type.

	No disability	Any disability	Impairment type			
			Sensory and speech	Physical	Intellectual	Psychological
<b>Persons (obs)</b>	16,646 (73,204)	5772 (14,179)	1251 ( 2520)	3450 ( 7523)	237 (390)	918 ( 1694)
<b>Mean age (sd)</b>	37.9 (13.4)	44.0 (14.0)	47.7 (14.1)	44.8 (13.5)	34.2 (14.7)	40.6 (12.8)
<b>Sex, % obs</b>						
Male	52.3	52.4	69.1	51.0	64.1	41.4
Female	47.7	47.6	30.9	49.0	35.9	58.6
<b>Education, % obs</b>						
Postgraduate	10.9	10.5	9.1	10.7	1.8	10.0
Bachelor	16.5	12.8	10.6	12.4	3.9	15.5
Certificate or diploma	32.3	36.0	40.6	36.7	27.4	34.4
Year 12	18.0	13.5	10.9	12.4	16.7	14.6
Less than year 12	22.4	27.2	28.9	27.8	50.3	25.4
<b>Occupational skill, % obs</b>						
High	36.5	35.3	34.3	35.3	13.1	31.5
Medium	39.0	38.5	37.6	38.4	31.5	41.0
Low	24.5	26.2	28.1	26.3	55.4	27.5
<b>Employment arrangement % obs</b>						
Permanent	58.1	51.7	49.3	50.4	47.4	48.2
Casual/labour hire	19.6	21.1	18.2	20.7	38.5	27.7
Fixed term	7.6	6.9	7.3	6.7	4.4	7.3
Self employed	14.7	20.4	25.2	22.2	9.7	16.8

**Table 2**  
Population weighted prevalence estimates of overall psychosocial job adversities and each of the sub-domains, by overall disability status and impairment type. Number of observations reporting each adversity, prevalence (%) with 95% confidence intervals, HILDA 2003–2012.

	One or more adversities			High demands			Low control			Low security			Unfair pay		
	N, obs	%	(95% CI)	N, obs	%	(95% CI)	N, obs	%	(95% CI)	N, obs	%	(95% CI)	N, obs	%	(95% CI)
<b>All people</b>															
No disability	53,142	72.8	(71.9, 73.6)	24,158	33.6	(32.7, 34.6)	16,560	26.1	(25.4, 26.9)	18,873	31.1	(30.2, 31.9)	15,264	24.2	(23.5, 25.0)
Disability	1007	76.8	(75.6, 77.9)	5054	34.9	(33.2, 36.6)	3329	28.2	(26.1, 30.3)	4448	37.5	(35.9, 39.0)	3443	28.6	(27.2, 29.9)
<b>Impairment type</b>															
Sensory and speech	1929	75.5	(72.4, 78.5)	891	32.4	(28.7, 36.0)	527	26.2	(22.6, 29.8)	783	38.3	(34.6, 42.0)	593	29.2	(24.4, 33.9)
Physical	5900	77.4	(70.6, 78.8)	2775	36.6	(34.8, 38.4)	1724	27.7	(24.9, 30.5)	2395	38.1	(35.8, 40.4)	1900	30.3	(28.4, 32.2)
Intellectual	363	86.4	(80.6, 92.2)	190	45.3	(35.2, 55.4)	124	49.8	(38.4, 61.2)	118	40.4	(31.3, 49.5)	78	31.4	(22.9, 39.9)
Psychological	1391	79.2	(75.6, 82.8)	649	36.6	(32.8, 40.5)	439	33.1	(27.4, 38.7)	572	37.9	(33.7, 42.1)	458	32.3	(28.5, 36.2)

compared to 72.8% (95% CI: 71.9, 73.6) of those without disability. We observed a similar pattern across the sub domains of job quality. While there were only small differences for job demands and complexity and low job control, there were larger differences in low job security (37.5% [95% CI: 35.9, 39.0] versus 31.1% [95% CI: 30.2, 31.9]) and in unfair pay (28.6% [95% CI: 27.2, 30.0] versus 24.2% [95% CI 23.5, 25.0]). Lower overall psychosocial job quality was most common for those with intellectual and psychological impairments (86.4% [95% CI: 80.6, 92.3] and 79.2% [95% CI: 75.6, 82] respectively reporting one or more adversities). This pattern held across the sub-domains of job quality, with people with intellectual impairments reporting the highest prevalence of high job demands and complexity, low job control and low job security. People with psychological impairments had higher than average prevalence of low job control and unfair pay.

#### Regression analyses

Once accounting for the differences in the age and sex distribution (model 1), we found that people with disability had higher odds of reporting one or more psychosocial job quality adversity when compared to those without disability, with an odds ratio of 1.23 (95% CI: 1.15, 1.31) (Table 3). This was true for all impairment types, and the largest disparity was for those with intellectual and psychological impairments (OR 2.27 [95% CI: 1.64, 3.14], and OR 1.52 [95% CI: 1.26, 1.84] respectively). Findings were similar for the job quality sub domains with a 25% increased odds for people with disability compared to those without disability for low job control (OR 1.23, 95% CI:

1.14, 1.33), low job security (OR 1.34, 95% CI: 1.25, 1.43) and unfair pay (OR 1.24, 95% CI: 1.16, 1.34). There was however the exception of high job demands and complexity, where there was no statistically significant difference overall between people with and without disability. For all the sub-domains of job quality, people with intellectual and psychological impairments fared the worst. Those with intellectual impairments had twice the odds of low job control (OR 1.98, 95% CI: 1.41, 2.77) and low job security (OR 2.34, 95% CI: 1.66, 3.29), while people with psychological impairments generally reported about a 50% increase in the odds of low job control (OR 1.43, 95% CI: 1.16, 1.76), low job security (OR 1.72, 95% CI: 1.43, 2.06) and unfair pay (OR 1.52, 95% CI: 1.17, 1.98). Those with sensory and speech impairments fared the best of all the impairment groups, with no statistically significant difference in high job demands and complexity or low job control compared to people without disability.

After further adjusting for educational attainment (model 2), we found there was little difference in the odds for reporting one or more adversity (see Table 3). Similarly, after further adjustment for occupational skill level and employment arrangements (model 3), there was minimal change to the estimates for reporting one or more adversity. The odds for high job demands and complexity were minimally increased for those with intellectual and psychological impairments, while the odds for low job control were minimally attenuated for the same two groups.

**Table 3**

Logistic regression models comparing those with disability to those without disability, overall and for each impairment type.

	Persons (obs)	Model 1 <sup>a</sup>		Model 2 <sup>b</sup>		Model 3 <sup>c</sup>	
		OR	95% CI	OR	95% CI	OR	95% CI
<b>One or more adversities</b>							
No disability		(ref)		(ref)		(ref)	
Disability	18,038 (87,383)	1.23	(1.15, 1.31)	1.24	(1.15, 1.32)	1.23	(1.15, 1.32)
Sensory and speech	16,976 (75,693)	1.26	(1.08, 1.46)	1.26	(1.08, 1.47)	1.25	(1.07, 1.45)
Physical	17,523 (80,696)	1.32	(1.21, 1.44)	1.32	(1.20, 1.45)	1.31	(1.20, 1.44)
Intellectual	16,735 (73,563)	2.27	(1.64, 3.14)	2.38	(1.62, 3.49)	2.49	(1.67, 3.70)
Psychological	16,941 (74,867)	1.52	(1.26, 1.84)	1.54	(1.27, 1.86)	1.53	(1.27, 1.85)
<b>High job demands</b>							
No disability		(ref)		(ref)		(ref)	
Disability	18,049 (87,672)	1.02	(0.95, 1.09)	1.05	(0.98, 1.12)	1.06	(0.99, 1.13)
Sensory and speech	16,990 (75,935)	0.97	(0.84, 1.12)	1.02	(0.88, 1.18)	1.02	(0.88, 1.19)
Physical	17,535 (80,968)	1.10	(0.97, 1.15)	1.09	(0.99, 1.19)	1.11	(1.02, 1.22)
Intellectual	16,749 (73,798)	1.50	(1.10, 2.02)	1.68	(1.16, 2.43)	1.92	(1.30, 2.83)
Psychological	16,955 (75,103)	1.19	(0.38, 3.77)	1.24	(1.05, 1.47)	1.28	(1.01, 1.65)
<b>Low job control</b>							
No disability		(ref)		(ref)		(ref)	
Disability	16,539 (74,967)	1.23	(1.14, 1.33)	1.20	(1.11, 1.30)	1.18	(1.09, 1.28)
Sensory and speech	15,530 (65,076)	1.17	(0.97, 1.39)	1.13	(0.94, 1.34)	1.10	(0.92, 1.31)
Physical	16,057 (69,297)	1.21	(1.09, 1.35)	1.18	(1.06, 1.31)	1.15	(1.04, 1.28)
Intellectual	15,303 (63,210)	1.98	(1.41, 2.77)	1.80	(1.25, 2.59)	1.64	(1.13, 2.39)
Psychological	15,488 (64,337)	1.43	(1.16, 1.76)	1.44	(0.70, 2.97)	1.32	(1.07, 1.62)
<b>Low Job Security</b>							
No Disability		(ref)		(ref)		(ref)	
Disability	16,458 (74,351)	1.34	(1.25, 1.43)	1.32	(1.23, 1.42)	1.29	(1.20, 1.39)
Sensory and speech	15,474 (64,566)	1.37	(1.17, 1.61)	1.36	(1.16, 1.59)	1.31	(1.12, 1.54)
Physical	16,001 (68,726)	1.40	(1.27, 1.54)	1.38	(1.26, 1.52)	1.33	(1.21, 1.47)
Intellectual	15,247 (62,721)	2.34	(1.66, 3.29)	2.24	(1.55, 3.23)	2.22	(1.50, 3.28)
Psychological	15,431 (63,838)	1.72	(1.43, 2.06)	1.67	(1.29, 2.17)	1.62	(1.35, 1.95)
<b>Unfair pay</b>							
No disability		(ref)		(ref)		(ref)	
Any impairment	16,530 (74,857)	1.24	(1.16, 1.34)	1.25	(1.16, 1.34)	1.27	(1.18, 1.37)
Sensory and speech	15,519 (64,985)	1.26	(1.07, 1.49)	1.26	(1.07, 1.49)	1.29	(1.09, 1.52)
Physical	16,048 (69,194)	1.30	(1.17, 1.43)	1.30	(1.18, 1.43)	1.33	(1.20, 1.46)
Intellectual	15,292 (63,118)	1.19	(0.82, 1.71)	1.18	(0.79, 1.75)	1.29	(0.86, 1.93)
Psychological	15,477 (64,241)	1.52	(1.17, 1.98)	1.54	(1.27, 1.86)	1.57	(1.19, 2.08)

<sup>a</sup> Model 1: Adjusted for age and sex.<sup>b</sup> Model 2: Adjusted for age, sex and education.<sup>c</sup> Model 3: Adjusted for age, sex, education, occupational skill level and employment arrangements.

### Sensitivity analyses

When the cut-point for the psychosocial job quality measure was changed to 'two or more adversities', we observed similar results for the overall disability group. Findings for specific impairment types were also very similar, except for the intellectual impairment group, where we did not observe any difference between those with intellectual impairments and those with no disability (Table 4). Results were very similar overall when we only included those with complete psychosocial adversity data for the overall job quality measure, but we did see a change in the estimate for those with intellectual and psychological impairments. For intellectual disabilities, the OR attenuated from 2.36 to 1.88, and for psychological, the OR changed from 1.43 to 1.33. We also found very little difference in results when restricting the sample to a narrower working age population (25–64).

### Discussion

Our findings from a large, nationally-representative Australian sample is the first to our knowledge to show that people working with disabilities experience systematically poorer psychosocial working conditions than those working without disabilities. People with disability have 25% higher odds of being in jobs with lower psychosocial job quality. The differences in overall job quality are attributable to 3 of the 4 job adversities examined (low job control, low job security, and perceived unfair pay). The elevated odds of high job

**Table 4**

Logistic regression models comparing those with disability to those without disability, overall and for each impairment type.

	Model 1 <sup>a</sup>		Model 2 <sup>b</sup>		Model 3 <sup>c</sup>	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Two or more adversities</b>						
No disability	(ref)		(ref)		(ref)	
Disability	1.24	(1.16, 1.33)	1.25	(1.17, 1.34)	1.26	(1.17, 1.34)
Sensory and speech	1.24	(1.06, 1.45)	1.25	(1.08, 1.46)	1.25	(1.08, 1.46)
Physical	1.26	(1.15, 1.38)	1.27	(1.16, 1.30)	1.28	(1.17, 1.40)
Intellectual	1.01	(0.74, 1.37)	0.99	(0.69, 1.42)	1.03	(0.72, 1.48)
Psychological	1.46	(1.22, 1.74)	1.49	(1.26, 1.76)	1.46	(1.16, 1.83)

<sup>a</sup> Model 1: Adjusted for age and sex.<sup>b</sup> Model 2: Adjusted for age, sex and education.<sup>c</sup> Model 3: Adjusted for age, sex, education, occupational skill level and employment arrangements.

demands amongst workers with disability was attenuated by adjustment for age and sex, but the odds of experiencing low job control, low job security, and perceived unfair pay remain elevated by 20–30% after adjustment for age, sex, education, skill level and employment arrangement.

While the results of the sensitivity analyses were generally consistent with the main findings, there was an anomaly in the results for people working with intellectual disabilities. When examining one or more adversities as an outcome, the odds of workers with an

intellectual disability were more than 2-fold greater than those without disability, but the association was null ( $OR \sim 1$ ) for analysis considering the more stringent outcome of two or more adversities. We have no clear explanation for this other than to note that it was by far the smallest impairment group in our sample (237 people contributing 390 observations), and thus potentially more prone to variation with changes in outcome classification. In summary, our results for workers with intellectual disabilities should be interpreted with caution, and purpose-designed studies may be required to answer questions about job quality for people working with intellectual disability.

Our findings provide the first national data on the psychosocial working conditions of people with disability. As such, these results provide a reference from which to monitor changes into the future that could be attributable to the new Australian National Disability Insurance Scheme (NDIS, implementation from 2016), other changes in policy and practice, or other events with bearing on the quality of employment for people with disabilities in Australia (e.g., economic shocks or downturns). The Australian National Disability Strategy 2010–2020 included a call for the ongoing monitoring of the socio-economic circumstances of people with disabilities ([Disability Policy and Research Working Group, 2011](#)). The current results show that not only are people with disabilities disadvantaged in terms of their levels of labour force participation, but those in employment also experience disadvantage in terms of their psychosocial job quality and, therefore, we suggest that job quality should be included in such monitoring. Such monitoring could also include other job quality indicators such as pay rates and opportunities for upskilling and advancement. In a 2009 report comparing the 27 countries that belong to the Organisation for Economic Cooperation and Development (OECD), adult Australians with a disability were shown to earn, on average, 70% of the income of those without disabilities - the lowest relative income in the OECD ([OECD, 2009](#)). Together with our findings, this suggests that there is considerable opportunity to improve the quality of employment for people with disabilities, and that such improvement is indeed feasible.

We suggest further research is needed to 1) identify factors that may explain the observed disadvantage, 2) identify strategies to address this evident inequality in line with Australia's commitment to the UNCRPD, and 3) evaluate the economic costs and potential health benefits of improving employment conditions for those with a disability in the context of the investment government and employers would be required to make.

The psychosocial job quality measure used was chosen because of its breadth, and because it has shown predictive associations with mental and physical health ([Butterworth et al., 2011a, 2011b](#)) and sickness absence ([Milner, Butterworth, Bentley, Kavanagh, & LaMontagne, 2015](#)). The disparities in psychosocial job quality observed in the current analysis should be addressed in order to optimise the attractiveness and sustainability of work for people with disabilities, and most importantly to provide healthy jobs for people with disability. The need for new strategies in this regard was made clear by a recent report from the Australian Bureau of Statistics showing that labour force participation for working age (15–64 years) people with disability has hardly changed over the last two decades: it was 54.9% in 1993, and fell slightly to 52.8% in 2012 ([Australian Bureau of Statistics, 2015](#)). Further, given evidence suggesting that much of the poorer health and wellbeing among those with versus without disability is attributable to socio-economic disadvantage ([Honey et al., 2011; Emerson et al., 2012; Emerson & Hatton, 2007](#)), improving working conditions could redress some of this gap. These conditions, importantly, are modifiable and include the psychosocial working conditions examined in this paper ([Landsbergis, Grzywacz, & LaMontagne, 2014](#)). A related study using the same 13 waves of HILDA data showed that there was a significantly different relationship between psychosocial job quality, employment status and mental

health among people working with disability compared to those without disability, driven mainly by stronger associations between unemployment, not being in the labour force and mental health for people working with disability ([Milner, Krnjacki, Butterworth, Kavanagh, & LaMontagne, 2015; Milner, LaMontagne, Aitken, Bentley, & Kavanagh, 2014](#)). This further reinforces the case for improving employment opportunities and job quality for people with disability.

We acknowledge certain limitations of this study. This is a descriptive analysis which seeks to document and contrast the psychosocial job conditions experienced by people with disability in comparison to those without disability. The pooled cross-sectional analysis was associative, precluding causal inference. While our analyses controlled for some of the established determinants of psychosocial working conditions (age, sex, education, skill level and employment arrangement) ([LaMontagne, Krnjacki, Kavanagh, & Bentley, 2013](#)), we recognise that there may be other systematic differences between the two groups that our analysis has not accounted for and that more sophisticated modelling would be required to make causal attributions. Separate analyses are being pursued in this regard, such as a recent propensity score analysis showing an association between working with a disability and lower perceived fairness of pay ([Milner et al., 2015](#)). Other limitations arise due to the nature of the sample. HILDA underrepresents people with severe disabilities and it does not include people living in institutions. In addition, because proxy reports (survey responses) are not permitted in HILDA, it is possible that the sample may underrepresent people with communication impairments, and it is possible that people with intellectual disabilities (who reported some of the greatest differences in working conditions) might respond to the survey differently than others. With the exception of results for people with intellectual/development disability, as discussed above, our results were robust to various sensitivity analyses, highlighting the need to interpret the results for working people with intellectual disability with caution.

The limitations of this study are offset by its strengths. These include the large, nationally representative sample with a decade of annual waves of data; the substantial numbers of working people with disability in the analytic sample, the use of a predictively validated psychosocial job quality measure; and adjustment for recognised determinants of psychosocial job quality.

## Conclusions

This comparative examination of psychosocial working conditions revealed systematically poorer psychosocial job quality among working people with versus without disabilities. These results suggest the need for further research to understand the reasons for these patterns, as well as policy and practice efforts to address this inequity. Independent of specific policy initiatives in Australia or internationally, comparable working conditions for people with versus without disability should also be pursued based on human rights and equity principles.

## Competing interests

None.

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