



The psychosocial quality of work determines whether employment has benefits for mental health: results from a longitudinal national household panel survey

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This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated by the Australian government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (MIAESR). The findings and views reported in this paper, however, are those of the authors and should not be attributed to either FaHCSIA or the MIAESR.

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ABSTRACT

Objectives Although employment is associated with health benefits over unemployment, the psychosocial characteristics of work also influence health. We used longitudinal data to investigate whether the benefits of having a job depend on its psychosocial quality (levels of control, demands and complexity, job insecurity, and unfair pay), and whether poor quality jobs are associated with better mental health than unemployment.

Method Analysis of seven waves of data from 7,155 respondents of working age (44,019 observations) from a national household panel survey. Longitudinal regression models evaluated the concurrent and prospective association between employment circumstances (unemployment and employment in jobs varying in psychosocial job quality) and mental health, assessed by the MHI-5.

Results Overall, unemployed respondents had poorer mental health than those who were employed. However the mental health of those who were unemployed was comparable or superior to those in jobs of the poorest psychosocial quality. This pattern was evident in prospective models: those in the poorest quality jobs showed greater decline in mental health than those who were unemployed ($B = 3.03, p < 0.05$). The health benefits of becoming employed were dependent on the quality of the job. Moving from unemployment into a high quality job led to improved mental health (mean change score of +3.3), however the transition from unemployment to a poor quality job was more detrimental to mental health than remaining unemployed (-5.6 vs -1.0).

Conclusions Work of poor psychosocial quality does not bestow the same mental health benefits as employment in jobs with high psychosocial quality.

INTRODUCTION

Employment is associated with better health, including mental health, than unemployment^{1–3} and as individuals move from unemployment into work, their mental health tends to improve.^{4,5} The positive health effects of paid work are argued to reflect a range of material and latent benefits, such as higher income and access to resources (eg, housing, food), having a defined social role and purpose, access to social support and social networks, and time structure.^{2,4,6,7} However, jobs vary in their physical, psychological, social and economic characteristics and, in contemporary affluent western societies, the psychological aspects of work are strongly associated with health outcomes.^{8–11} Adverse psychosocial work condi-

What this paper adds

- ▶ Because employment is associated with better mental health than unemployment, policy has focused on the risk posed by joblessness, although there is evidence that poor quality jobs can erode mental health.
- ▶ Our study compares the effects of unemployment and employment in jobs with poor psychosocial job quality, and uses longitudinal data to investigate employment transitions.
- ▶ We find that jobs with poor psychosocial attributes are no better, and may have even more adverse effects on mental health, than unemployment.
- ▶ These findings suggest that gaining employment may not necessarily lead to improvement in mental health and well-being if psychosocial job quality is not considered.

tions such as high job demands, low decision latitude or control, job strain, a lack of social support at work, effort–reward imbalance and job insecurity are well established risk factors for poor health.^{12–14}

There has been, however, little direct comparison between the health effects of unemployment and that of jobs of varying psychosocial quality, especially longitudinally. Grzywacz and Dooley¹⁵ developed an employment continuum which contrasted unemployment with different employment categories including optimal jobs, inadequate jobs, jobs with poor psychosocial conditions (low decision latitude, high job demands, low social support) and jobs with low pay or few benefits. While unemployment and inadequate jobs (salary below the poverty line) were associated with significantly greater levels of depression than optimal jobs, so too were poor quality jobs that combined adverse psychosocial conditions. Broom and colleagues¹⁶ also defined jobs along a continuum of psychosocial quality based on the number of different adverse conditions including job strain (high demands and low decision latitude), low job security and low marketability. Cross-sectional analyses revealed a linear association between the number of adverse psychosocial job conditions and mental health. They also found the same prevalence of poor mental health among those in the worst quality jobs (comprising three adverse characteristics) and those who were unemployed.

Because these investigations were based on cross-sectional data, interpretation of the direction of influence between mental health and employment circumstances is limited. There is ample evidence of a bi-directional relationship between these factors. While adverse psychosocial job quality is a prospective risk factor for mental disorder,^{14 17 18} there is also evidence that poor mental health is a significant cause of disability and absence from the workforce,^{19 20} and that poor mental health may select people into poor quality jobs.^{21–25}

Our aim in this paper is to address a substantial gap in the literature and examine the longitudinal association between employment circumstances (including employment status and psychosocial job quality) and mental health using seven waves of data from an Australian national survey. We hypothesise that:

1. Across time, mental health will vary according to job quality and that the health of those in poor quality jobs will be similar to those who are unemployed;
2. These results will reflect the contemporaneous relationship between employment circumstances and mental health (ie, poorer mental health associated with current employment circumstances), rather than between-person differences in susceptibility;
3. Prospective analysis will show that employment circumstances predict change in mental health, with unemployment and poor quality jobs leading to worsening mental health when compared to high quality jobs; and
4. The benefit of moving from unemployment to employment will depend upon the quality of that job.

METHODS

Data

This study reports secondary analysis of data from the first seven waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, a nationally representative household panel survey conducted annually since 2001. The survey used a multi-stage sampling approach, sampling households within dwellings within a selection of administrative areas. At baseline, there were 7682 responding households (response rate of 66%). Within households, 13 969 household members aged 15 years and over completed a personal interview and 94% of these returned a self-completion questionnaire (SCQ). Attrition in the HILDA Survey is similar to other international household panels.²⁴ The HILDA Survey was approved by the Faculty of Business and Economics Human Ethics Advisory Committee at the University of Melbourne.

This analysis is restricted to respondents who participated in the wave 1 interview and returned the SCQ, were aged between 20 and 55 at that time, and provided interview and SCQ data on at least two subsequent occasions. The final study sample comprised 7155 wave 1 respondents (3305 men and 3850 women) and 44 019 observations (an average of 6.2 observations per respondent).

Measures

Mental health was assessed using the five item Mental Health Inventory (MHI), a subscale from the SF-36 general health survey. The MHI assesses symptoms of depression and anxiety (nervousness, depressed affect) and positive aspects of mental health (feeling calm, happy) in the past 4 weeks. The MHI has reasonable validity and is an effective screening instrument.^{25 26} The current analyses use the continuous mental health scale score, with higher scores representing better mental health.

Employment status was coded as employed (part time or full-time), unemployed and looking for work, or not participating in the labour force (NILF).

Full details of the construction and validation of the different measures of job quality are presented elsewhere.^{27 28} Briefly, factor analysis and structural equation modelling of a module of 12 items which assessed psychosocial aspects of work identified three separate factors which we labelled: job demands and complexity (four items, $\alpha=0.70$); job control (three items, $\alpha=0.82$); and perceived job security (three items, $\alpha=0.64$). One item that assessed health consequences was omitted from this analysis. The scales demonstrated predictable associations with more widely used measures of job demands and control²⁷ and other employment conditions such as casual status, hours worked and shift work (Butterworth *et al*, 2010, submitted) For respondents with partial missing data, scale scores were based on completed items and weighted to the expected total had all items been answered. For the security items, missingness was greater for self-employed respondents than those identified as employees (14.4% vs 8.2% at baseline). Therefore to minimise potential bias, an alternative single-item measure of security, based on reported satisfaction with job security, was used if all other security data were missing. A single item which 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. Detail of the four factors and the individual items is presented in figure 1. The *demands and complexity* factor included an item assessing stress (Q1) which is less theoretically consistent with the other items. As a sensitivity analysis we considered this item as a separate fifth factor reflecting *job stress* and repeated the analysis based on five factors.

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 and a composite measure constructed by summing the number of adverse psychosocial job conditions (high job demands and complexity, low job control, job insecurity and unfair pay). Because of the small number of respondents reporting all four job adversities, this composite scale was top-coded at three and, thus, produced four categories ranging from 0 (optimal jobs) to three or more psychosocial adversities (poorest quality jobs). In addition, a categorical measure of overall employment circumstances, the employment continuum, combined data on employment status (unemployment or NILF) and psychosocial job quality.¹⁶

Between-person (time invariant) measures of employment experiences were calculated to identify respondents who, at some point during the seven waves of data, were classified as unemployed, NILF or in the poorest quality jobs.

Covariates included age, sex, partnered status (married/de facto vs no partner), physical disability (SF-36 physical functioning subscale), per cent of post-education life in paid employment, educational qualifications (tertiary degree, diploma/certificate, completed secondary school, not completed secondary school), experience of financial hardship²⁸ and residence in a socially disadvantaged area. The personality trait of negative affect may influence reports of job quality and mental health and, thereby, inflate the observed association.^{17 29 30} Therefore, the neuroticism scale from an adaptation of Saucier's brief personality index, included in wave 5 of the HILDA Survey, was used as a covariate.³¹ Finally, an item which assessed whether respondents had changed jobs in the past year was used to differentiate between those who remained in the same job

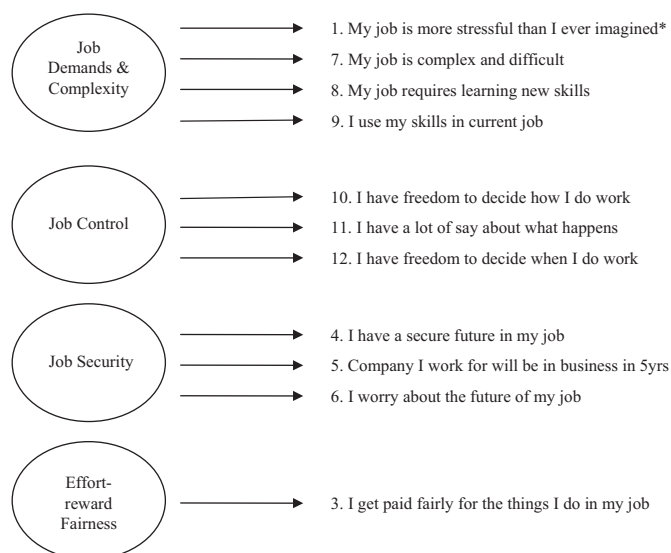


Figure 1 Items and factor structure of psychosocial job quality from the HILDA Survey. Item 2 'I fear the amount of stress in job will make me ill' was excluded from the current analyses. *Previous factor analyses suggest item 1 may load either with the job/demands complexity factor or on its own as a work stress/strain factor (see Leach *et al*²⁷). As such, supplementary analyses were conducted with this item/factor considered a separate category of job adversity in the calculation of overall job quality.

but reported changed job conditions and those who moved between jobs with different characteristics.

Statistical methods

The first three hypotheses were tested using longitudinal random-intercept regression models with two levels: occasion clustered within individuals. These models fitted a fixed (average) regression slope for mental health over time, while permitting the intercept to vary between respondents (reflecting the different initial mental health scores of individuals). Robust SEs were used to account for respondent clustering within households, although sensitivity analyses also modelled occasion within individual within households. To determine appropriate model specification, initial analyses evaluated sex differences in the association between employment circumstances and mental health, contrasting a model with main effects of sex and employment circumstance with a model which also incorporated the interaction terms. The initial longitudinal model (model A) regressed mental health on time-varying employment circumstance. Subsequent models included the covariates described above (B), the time-invariant measure of neuroticism (C) and the between-person employment terms (D). To more directly evaluate the temporal relationship, the full model was repeated but restricted to those individuals who did not change employment circumstances between adjacent waves and considered *change* in mental health over 12 months and lagged predictors. This model assessed whether prior employment circumstances were associated with change in mental health (E). Finally, we investigated specific employment transitions from unemployment: regressing change in mental health on the terms used in model B. Sensitivity analyses confirmed the generality of the reported results: multilevel linear growth-curve models modelling time/wave with a random slope and including household-level information; a random-intercept model restricted to respondents who changed jobs; a fixed-effect (within-person) model to directly evaluate the effect of changes

in employment circumstances and other covariates; assessing the linear trend in job adversity; and using the modified 5 factor measure of job quality described above.

For the analyses reported, cases with missing data (averaging 0.49%, range 0–2.5% of items within waves) were excluded on an analysis-by-analysis basis. We repeated the main analyses on fully imputed data using the process of multiple imputation by chained equations and replicated the current results. Response bias and attrition can also influence longitudinal analysis. We repeated the main analysis, applying (adjusted) HILDA sample weights, which reflect the probability of wave 1 participation, as importance weights and again replicated the reported results. Across the seven waves of data, attrition was 21.1%. Modelling showed that being male, younger age, poor physical and mental health, not having a partner and lower levels of educational attainment were independent predictors of attrition, but that the employment continuum was not. Repeating the analysis controlling for attrition did not alter the results. All analyses were conducted using Stata 10.0.

RESULTS

Preliminary analyses

Table 1 presents the baseline characteristics of the sample and table 2 reports longitudinal data on sample size, employment circumstances and mental health problems (defined as a score <50 on the MHI). A relatively small number of respondents were identified in the poorest quality jobs or as unemployed at any point in time. However, there was considerable movement between different employment circumstances over the seven waves, with experience at 'any time' much higher than the occasion-specific rates. Similarly, there was considerable variability in mental health scores and over a quarter of respondents were identified with a mental health problem at some point during the study.

We initially evaluated whether it was necessary to stratify analyses by sex. A random-intercept regression model (mental health score as outcome) which included the main effects and interaction between employment circumstances and sex was a significantly better model than one comprising only main effects (likelihood ratio test: $\chi^2=53.01$, $df=5$, $p<0.001$). However, this was entirely driven by sex differences in the NILF category, and comparison of the same two models excluding the NILF category showed no difference ($\chi^2=3.74$, $df=4$, $p=0.44$, NS). Given that our focus is on employment circumstances and unemployment, we concluded that sex did not have a significant modifying effect and therefore considered men and women together.

Table 1 Baseline characteristics of the sample

Characteristic	
n	7155
Mental health (SF-36), mean (SD)	73.4 (17.2)
Physical health (SF-36), mean (SD)	87.9 (19.1)
Sex (male)	46.2%
Age, mean (SD)	38.5 years (9.5)
Partnered (married or de facto)	70.8%
Educational attainment	
Tertiary qualifications	23.8%
Not complete high school	29.6%
Previous work history, mean % of adult life (SD)	78.7% (25.7)
Experienced financial hardship	14.9%
Resides in disadvantaged socio-economic area	30.1%

Table 2 Descriptive data on employment circumstances and mental health across waves

	Overall (%)	Wave 1 (%)	Wave 2 (%)	Wave 3 (%)	Wave 4 (%)	Wave 5 (%)	Wave 6 (%)	Wave 7 (%)	Any (%)
Optimal jobs	26.4	21.7	25.3	25.8	27.1	25.7	29.2	31.1	60.1
1 Adversity	30.5	30.1	29.7	30.7	30.7	32.3	30.8	29.3	74.5
2 Adversities	15.8	18.5	16.2	15.6	15.3	15.6	14.5	14.3	50.4
Poorest jobs	5.7	7.0	6.4	6.1	5.2	5.6	5.1	4.4	21.5
Unemployment	3.0	4.2	3.7	2.7	2.5	2.5	2.6	2.1	12.1
Not participating in the labour force (NILF)	18.7	18.6	18.7	19.1	19.3	18.3	17.8	18.8	34.3
Mental health problems (score <50 on the MHI)	9.9	10.4	9.9	9.6	10.4	10.0	9.6	9.5	28.1

Employment circumstances and mental health over time

An initial random-intercept regression model examined the longitudinal association between labour-force status (employed, unemployed, NILF) and mental health, controlling for the covariates reported above. The results confirmed that those who were employed had significantly better mental health (mean predicted mental health score: 75.1; 95% CI 74.9 to 75.4) than those who were unemployed (68.5; 67.5 to 69.5) or NILF (69.1; 68.6 to 69.6).

Table 3 presents results (coefficients and SEs) from a series of models examining the association between employment circumstances and mental health over time and within individuals. Model A showed that, compared to those in the poorest quality jobs, better quality jobs were associated with better mental health but that there was no difference in the mental health of those in the poorest quality jobs and those who were unemployed or NILF. The inclusion of a range of covariates (model B) resulted in a slight reduction in the magnitude of the coefficients, but again those in better quality jobs had significantly better mental health than those in the poorest quality jobs. However, the mental health of those in the poorest quality jobs was also significantly worse than those who were unemployed or NILF. Consistent with expectations, covariates associated with poorer mental health included being female, younger age, poorer physical health, not having a partner, having a limited employment history and financial hardship. In model B, as in all subsequent longitudinal models, there was no effect of wave, indicating no systematic change in mental health across time.

Model C incorporated a measure of neuroticism. Because this measure was only collected on one occasion, the analysis was restricted to respondents with data at wave 5. Therefore the analysis was based on 37 458 observations from 5956 respondents, whereas model B was based on 41 751 observations from 7090 respondents. The inclusion of the measure of neuroticism did not change the pattern of results, although the covariate age was no longer significant and neuroticism was significant. Model D incorporated the three between-person terms representing any experience of a poorest quality job, unemployment or NILF. Each of these terms was significantly associated with mental health, suggesting that individuals at risk of adverse employment circumstances had poorer mental health overall (even at times when these circumstances did not apply) than those not at risk. Despite this, the time-varying measures of employment circumstances remained significantly associated with mental health. That is, apart from the between-person effects, the specific employment circumstances of an individual at a particular point in time were also associated with their mental health. Thus, individuals reported significantly poorer mental health on

the specific occasions that they were in the poorest quality jobs compared to when they were unemployed, NILF or working in better quality jobs.

Prospective effect of employment circumstances

The next analysis (model E) examined the effect of employment conditions on mental health using a prospective design: regressing change in mental health on lagged employment circumstances (and covariates). That is, we use data from the previous wave, approximately 12 months earlier, to predict change in mental health over the 12 months. Because it is focused on a subset of respondents (those who did not change employment circumstances between adjacent waves), this analysis is based on 15 086 observations from 5762 respondents. Again, the same pattern of results was observed. Job quality was associated with change in mental health scores over time, with the poorest quality jobs associated with worsening mental health. Further, those respondents in the poorest quality jobs showed significantly greater decline in mental health over time than those who were unemployed or NILF.

Employment transitions and mental health

The final analysis assessed specific transitions from unemployment. There were 693 respondents who moved from unemployment to another employment circumstance or remained unemployed across two consecutive waves (with 957 transitions). A lagged longitudinal regression model was conducted, with mental health change scores as the dependent measure (similar to model E). Predicted difference scores from the model are presented in figure 2. The results confirm that those who moved into optimal jobs showed significant improvement in mental health compared to those who remained unemployed. Those respondents who moved into poor quality jobs showed a significant worsening in their mental health compared to those who remained unemployed.

A range of sensitivity analyses replicated these results. Operationalising job quality as a linear effect confirmed that increasing adversity was associated with declining mental health (β coefficient = -1.68, SE 0.08). The same results with nearly identical coefficients were obtained when the four-item demands and complexity factor was split into two separate factors assessing demands and complexity and job stress.

DISCUSSION

Our findings demonstrated that psychosocial job quality was strongly and independently associated with mental health. Over time, those in optimal jobs had better mental health than those in poorer quality jobs. There was a linear relationship between

Table 3 Coefficients (and SEs) from a series of longitudinal random-intercept regression models assessing the relationship between employment circumstances and mental health

	Model A	Model B Add covariates	Model C Add neuroticism	Model D Add between-person	Model E Lagged predictors of change in mental health
Employment continuum					
Optimal jobs	5.95 (0.33)***	5.77 (0.33)***	5.40 (0.35)***	5.04 (0.34)***	6.27 (0.79)***
1 Adversity	4.10 (0.32)***	4.00 (0.32)***	3.84 (0.34)***	3.38 (0.33)***	4.26 (0.78)***
2 Adversities	2.42 (0.33)***	2.32 (0.33)***	2.40 (0.35)***	1.85 (0.33)***	2.89 (0.83)***
Poorest jobs	(Ref)	(Ref)	(Ref)	(Ref)	(Ref)
Unemployment	-0.07 (0.55)	1.36 (0.55)*	1.61 (0.58)**	1.36 (0.56)*	3.09 (1.32)*
NILF	0.49 (0.39)	2.07 (0.39)***	2.00 (0.41)***	1.89 (0.40)***	2.20 (0.81)**
Sex		-0.75 (0.31)*	-1.38 (0.30)***	-0.45 (0.32)	0.28 (0.27)
Age		0.09 (0.02)***	0.01 (0.02)	0.09 (0.02)***	0.06 (0.01)***
Physical health		0.15 (0.01)***	0.15 (0.01)***	0.15 (0.01)***	0.08 (0.01)***
Partner status		2.62 (0.25)***	2.67 (0.26)***	2.53 (0.25)***	0.59 (0.29)
Time in work		4.84 (0.66)***	4.23 (0.65)***	3.70 (0.68)***	2.53 (0.59)***
Education (higher degree)		(Ref)	(Ref)	(Ref)	(Ref)
Diploma/certificate		-0.47 (0.35)	0.31 (0.34)	-0.25 (0.35)	-0.18 (0.32)
High school		-0.01 (0.42)	0.69 (0.41)	0.03 (0.42)	0.18 (0.38)
Incomplete high school		-0.56 (0.38)	0.41 (0.37)	-0.43 (0.38)	-0.05 (0.34)
Low SES area		-0.15 (0.23)	-0.07 (0.24)	-0.03 (0.23)	0.07 (0.28)
Experience of hardship		-4.82 (0.29)***	-4.52 (0.30)***	-4.64 (0.29)***	-2.11 (0.46)***
Neuroticism			5.26 (0.03)***		
Any experience of poorest quality job				-3.47 (0.38)***	
Any experience of unemployment				-2.02 (0.52)***	
Any experience of NILF				-2.37 (0.37)***	
Lagged mental health score					-0.50 (0.009)***
Wave		0.02 (0.03)	0.05 (0.14)	0.03 (0.03)	-0.04 (0.06)
Constant	70.43 (0.34)	48.85 (1.08)	25.49 (1.23)	52.24 (1.11)	21.34 (1.35)

*p<0.05; **p<0.01; *** p<0.001.

NILF, not participating in the labour force; SES, socio-economic status.

the number of adverse conditions experienced and mental health, with deterioration observed for each additional adverse condition. This relationship was evident among those who changed jobs and prospectively: job quality predicted subsequent mental health. As hypothesised, we found that those respondents who were unemployed had significantly poorer mental health than those who were employed. However, the mental health of those who were unemployed was comparable or more often superior to those in jobs of the poorest psychosocial quality. This relationship was also evident in

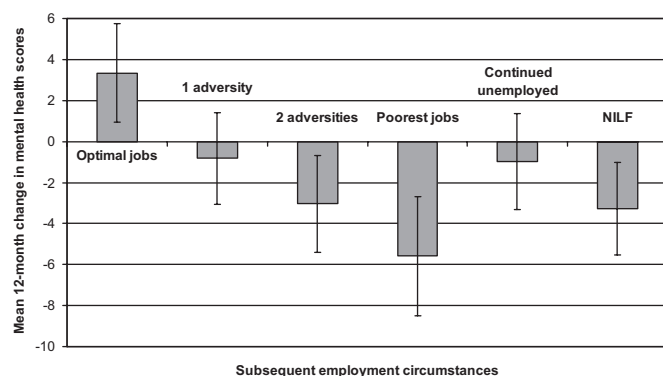


Figure 2 Predicted 12-month change in mental health scores (and SEs) for transitions from unemployment, by subsequent employment circumstances. *Predicted mean mental health change score plotted at the following levels of covariates: female, partnered, completed high school, not residing in low socio-economic area, not experience hardship, and at the mean of all continuous variables. NILF, not participating in the labour force.

prospective models, where the mental health of those in the poorest quality jobs declined more over time than the mental health of respondents who were unemployed. Finally, while moving from unemployment into a high quality job led to improvement in mental health, the transition from unemployment to a poor quality job was more detrimental to mental health than remaining unemployed.

In developing a measure of psychosocial job quality, our starting point was the need to classify jobs along a continuum of adversity so as to compare unemployment with jobs ranging from inadequate/adverse quality through to high quality jobs offering security, autonomy and reasonable workload.¹⁵ The approach extends the notion of job strain (the combination of heavy and conflicting job demands with low job control) by adding other adverse characteristics of many contemporary jobs, such as insecurity.³² The individual factors used were generally compatible with other theoretical approaches reported in the literature (eg, Siegrist¹⁰ and de Lange *et al*¹⁴), although the items used to assess job demands also assessed job complexity. Measures of job strain (demand-control) generally locate job complexity as an aspect of job control.³³ However, complexity has also been used as a component of job demands and can refer to cognitive load and demand.³⁴ The construction of an overall measure of psychosocial job quality seems robust to differences in the individual factors used as we have replicated the current findings including different aspects of job quality (eg, stress, marketability) and using different scales.¹⁶

While the longitudinal association between psychosocial job quality and mental health reported here is evident in the literature,¹²⁻¹⁴ the current study adds to this through the use of large-scale national data and analysis of seven waves of longitudinal data. The adverse health effects of unemployment, and

the benefits associated with moving from unemployment to employment, are also well established and were replicated in our findings.^{4 5 35} Our study, however, addresses the lack of evidence on the relative importance of the quality of work compared to unemployment. These longitudinal results extend the cross-sectional findings of Broom *et al*¹⁶ that jobs with poor psychosocial job quality were associated with similar (or poorer) mental health as unemployment. In contrast, Grzywacz and Dooley¹⁵ found that, in the US context, jobs with poor psychosocial conditions were associated with slightly better mental health than unemployment or working in jobs with inadequate pay and health benefits (working poor), while jobs with good conditions delivered optimal mental health. While other researchers have examined the mental health consequences of inadequate employment defined by very low pay or benefits,³⁶ we know of only one other longitudinal study contrasting unemployment and psychosocial job quality. Leach and colleagues²² reported analysis of follow-up data from the survey used by Broom, and found that transitions into unemployment and poor quality jobs both had an adverse effect on health. However, their analysis was based on just two waves of data, collected 4 years apart. The current analysis used multiple waves of data collected annually. The 12-month interval between data points seems a more appropriate time frame for a prospective (lagged) analysis of the influence of employment conditions on mental health, and is consistent with recommendations by de Lange and colleagues.¹⁴ Observing the effects of job quality over a much longer period of time may not be plausible given that respondents may change jobs, perhaps because of their dissatisfaction with their employment circumstances, or their employment conditions may change. Such changed circumstances would confound the prospective association.

The comprehensive analytic approach enhances confidence in our findings. An extensive range of covariates were included in models to minimise the possibility of confounding, such as due to personality differences or financial hardship.³⁰ We also sought to address possible selection effects. Stansfeld and colleagues²¹ recently showed that childhood and psychological distress predicted job characteristics in adulthood and other factors, such as poor educational attainment or lack of job-relevant skills, could also be associated with poorer health and the likelihood of unemployment or working in poor quality jobs. Potential confounding influences were managed by longitudinal models demonstrating that change in employment circumstances was associated with change in mental health and the careful selection of covariates. In addition, the inclusion of between-person terms assessing any experience of adverse employment circumstances captured the aspect of the association between employment circumstances and mental health that reflected selection or underlying susceptibility. The fact that the time-varying measures of job quality and unemployment remained significant and were only slightly attenuated following the inclusion of the between-person terms, indicates that the association between employment circumstances and mental health is largely driven by a time-varying relationship.

The results demonstrate the relevance of psychosocial job quality for the design of employment policies. Work-first policies are based on the notion that any job is better than none as work promotes economic as well as personal wellbeing.^{37 38} While we did find that moving from unemployment to jobs of high psychosocial quality was associated with improvements in mental health, transitions into jobs of poor psychosocial quality led to poorer mental health. A difference of four³⁹ or five^{40 41} points on the MHI is considered to be meaningful or clinically

relevant. Accordingly, the change in mental health scores observed for those respondents moving into optimal and the poorest quality jobs warrants attention. The current results, therefore suggest that employment strategies seeking to promote positive outcomes for unemployed individuals need to also take account of job design and workplace policy.

The current study provides valuable population-level data on the longitudinal experience of psychosocial job quality among Australian workers. There is considerable variability in job quality over time within the population. Across the seven waves of data, over 20% of all workers spent some time in a job rated as the poorest quality, and over half spent time in a job with two adverse work conditions. At any particular point in time, most Australian workers were exposed to one or more of the adverse psychosocial work conditions. While the reported prevalence of adverse job conditions is obviously a consequence of the relative classification of psychosocial job adversity, the results also show that exposure to even a single aspect of poor job quality is associated with poorer mental health. While the difference in mean mental health scores of those in a job with one adverse condition and those in an optimal job would not be deemed clinically relevant, the findings do indicate that, at a population level, relatively small improvements in psychosocial job quality could yield widespread improvement in the overall mental health of the Australian workforce.

There are a number of limitations which need to be recognised. We were restricted to the scales available in the HILDA Survey and, therefore, could not measure other aspects of psychosocial job quality (eg, social support at work⁴²). As is the case with all survey and longitudinal research, our results may be influenced by selection and attrition bias. Although the household response rate was only 66%, the baseline characteristics of the HILDA sample closely resemble the Australian population.⁴³ Although we used a variety of statistical methods to correct for attrition, missing data and selection bias, these effects may still limit the generalisability of our findings. It is also important to note that our measure of psychosocial job quality was a relative measure and was defined by reference to the distribution of job characteristics in the population. While this is a common approach (eg, poverty measures⁴⁴), it does raise questions about identifying a minimally acceptable risk level. Regardless of improvements in job design and workplace policies, a relative measure will always define a proportion of the population as being in jobs of poor psychosocial quality. Therefore, future research could seek to define an absolute level of unacceptable psychosocial job quality against which to benchmark the effectiveness of policies and interventions.

This study addresses the intersection of health, welfare and workplace relations policy. Job security, control and workloads reflect how contemporary jobs are regulated, organised and managed, and trends towards flexible and insecure workforces are evident in Australia and other OECD countries. Deregulation has opened the way to deterioration in working conditions, including the erosion of penalty rates for shift and weekend work, an increase in unpaid overtime and less training and fewer on-the-job opportunities for temporary workers.⁴⁵⁻⁴⁷ Our study indicates that the erosion of work conditions may incur a health cost, which over the longer term will be both economically and socially counterproductive. History shows that the prevalence of poor quality jobs may be amenable to policy and intervention. For example, the reduction in poor quality jobs during the post-war era was linked to regulatory changes to protect and improve work conditions, the growing influence of unions and a booming economy.⁴⁸ It should also be recognised that Australia has a well-

developed welfare system which provides low or no cost health services and unemployment benefits. It may be that poor quality jobs are associated with better mental health than unemployment in countries with a less generous social safety net.

CONCLUSION

This study has shown that work of poor psychosocial quality, characterised by low job control, high job demands and complexity, job insecurity and the perception of unfair pay does not bestow the same mental health benefits as employment in jobs with high psychosocial quality. In fact, we found that moving from unemployment to a job with poor psychosocial quality was associated with a significant decline in mental health relative to remaining unemployed. This suggests that psychosocial job quality is a pivotal factor that needs to be considered in the design and delivery of employment and welfare policy.

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