

Entry into work and changes in life satisfaction among young workers

A VicHealth scoping study

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We honour the memory of the inimitable Associate Professor Allison Milner who had a passion for building evidence to improve the mental health of young people.

Summary of project

People 30 years or younger comprise a substantial proportion of Australia's working population. Young workers are more likely to be exposed to adverse psychosocial working conditions than their older counterparts. At the same time, young people are frequently going through change in a number of other areas of life, including relationship formation, living arrangements and financial circumstances. The combination of these life changes poses a risk for mental health problems and wellbeing, and may explain why adolescence and early adulthood is the peak age of onset for mental disorders.

The aim of this project was to assess the impact of entry into employment as a time when young people's wellbeing and resilience may be challenged. Specifically, we examined the difference in life satisfaction when a young person is 'not in the labour force' (NILF) (i.e., in school or other non-working activity, excluding being unemployed) compared to when they are in employment. In addition, we assessed the changes in life satisfaction from being NILF to being employed in a permanent, casual, fixed term job or self-employed as well as differences depending on the psychosocial quality of the work the young person enters. We hypothesised that those entering into high quality employment would have less of a decline in life satisfaction than those employed in a job with poor psychosocial job quality. This study was complemented by a further descriptive analysis of the patterning of life satisfaction among young Australians according to key variables including the industry within which the young person was employed.

The data source for this study was the Household Income and Labour Dynamics in Australia (HILDA) study and the sample included 11,537 young people (aged 30 years or younger). Results suggest that life satisfaction was similar across employment types and industries, and lower when people were unemployed. There was a significant association between life satisfaction and job quality. Multivariate results suggest a small but statistically significant decline in life satisfaction when young people were in employment compared to when they were 'NILF'. Our results also suggest a significant decline in life satisfaction when young people were employed in jobs with poor psychosocial working conditions.

These results suggest younger workers going into the labour market may experience a small decline in life satisfaction and wellbeing, unless they are entering into a job characterised by high psychosocial work qualities. This suggests that promoting high quality psychosocial work for younger workers will protect and promote their wellbeing, and may reduce the likelihood of later mental health problems, particularly if this sets up the young person for a working life characterised by good psychosocial quality jobs.

Funding

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Plain language summary

In this project, we examined how entry into working life affected the life satisfaction of young Australians. We made use of data from an existing national longitudinal survey called the Household Income Labour Dynamics in Australia (HILDA) study, which provides longitudinal data on over 20,000 people for the years 2001 onwards. The main outcome of this study was a global measure of life satisfaction, which we studied in relation to employment, demographic and health related characteristics. We used longitudinal modelling to investigate within person changes in life satisfaction comparing circumstances where a person was not in the labour force (NILF) to when they were employed. Results indicate a small decline in life satisfaction when people were in employment compared to when they were NILF. Our results also show a significant decline in life satisfaction in relation to decreasing psychosocial quality of jobs. The results of this investigation suggest that young people's life satisfaction can be positively influenced through better quality employment, and that efforts to enhance young people's satisfaction should include reducing barriers to employment; as well as the promotion of high psychosocial quality jobs for young people.

Background

Adolescence and early adulthood is the peak age of onset for many mental disorders, with 75% of lifetime cases of mental illness having their first onset by age 24 (1). However, people in this age group are less likely than others to seek professional help (2). This is problematic because early age of onset of mental disorder is associated with a longer duration of untreated illness and poorer long-term outcomes (3). The development of a mental health problem also impairs participation in the labour force (4). However, evidence suggests that this relationship is likely to be bi-directional, whereby not participating in work contributes to mental health problems and vice versa (5). Across all age groups, research is also emerging that poor quality employment is worse for mental health than having no job at all (6, 7). Thus, poor quality jobs may damage mental health to the extent that a person may leave employment all together, while high quality jobs promote mental health and wellbeing as well as workforce engagement.

Currently, young people in Australia aged 15 to 24 years comprise about 30% of all employed persons (8), with a proportion of these people also studying, and being employed in part time and casual work. The most recent data from the Australian Bureau of Statistics suggests that about 14.2 percent of 15-24-year-olds are looking for work and youth unemployment has reached its highest peak since 1998 (8). This data is consistent with previous international studies suggesting that the nature of work young people are employed in is increasingly temporary and insecure (9, 10).

Younger workers may face a number of challenges when entering the workplace (10). One of our recent studies using analysing the HILDA cohort showed that younger workers consistently report lower job control than older workers (11). Earlier Victorian working population-based studies of ours have shown higher prevalence of job strain (low control jobs with high psychological demands), higher prevalence of unwanted sexual advances at work, and higher prevalence of casual and temporary employment among younger workers (12-15). Other studies have shown that young workers are particularly vulnerable to conflict with supervisors and colleagues (16), bullying, and perceive inequity in their treatment at work (17). There is also some evidence that the adverse employment circumstances young people find themselves in are associated with the risk of depression or anxiety (18). Further, early adversities experienced at work may have negative effects on wellbeing and depressive symptoms years after they are experienced (19). At the same time, early experiences at work

can present an opportunity for young people to develop resilience and the ability to adapt to challenges at work (19, 20).

In this report, we use an existing longitudinal data source, the Household Income & Labour Dynamics in Australia (HILDA) study, to examine the impact of young people's entry into paid work on their life satisfaction. While the influence of resilience on young people's health and wellbeing, as well as the impact of entry into paid employment on a young person's resilience is also of interest, there is no measure of resilience available in HILDA. Life satisfaction is commonly measured as a form of subjective wellbeing. Our premise is that entry into the paid labour force can influence the life satisfaction of young people. In this way, the association between the environment (whether unemployment or employment) and young people's wellbeing can be examined and the extent to which employment conditions impact on young people can be examined. We investigated this by applying advanced economic modelling approaches to a longitudinal cohort of young working Australians. The Household Income and Labour Dynamics in Australia (HILDA) survey provides annually collected time series data on over 19,000 employed individuals, and thus enables examination of the relationship between employment status and life satisfaction over a number of years of observation, in this instance spanning the ages of 15-30 years.

Methods

Data source: The HILDA survey

The Household, Income and Labour Dynamics in Australia (HILDA) survey is a longitudinal, nationally representative study of Australian households established in 2001, with 13 years of data currently available for analysis. The first wave collected detailed information from over 13,000 individuals within over 7,000 households (21). The response rate to wave 1 was 66% (21). The survey covers a range of dimensions including social, demographic, health and economic conditions using a combination of face-to-face interviews with trained interviewers and a self-completion questionnaire. Although data are collected on each member of the household, interviews are only conducted with those older than 15 years of age.

The initial wave of the survey began with a large national probability sample of Australian households occupying private dwellings (21). Interviews were sought in later waves with all persons in sample households who had attained 15 years of age. Additional persons have been added to the sample as a result of changes in household composition with a top-up sample of 2,000 people added to the cohort in 2011 to allow better representation of the Australian population using the same methodology as the original sample (i.e., a three-stage area-based design) (22). The response rates for new respondents who join the HILDA survey are above 70% and the (wave-to-wave) retention rate for respondents who continue in the survey is above 90% (21).

Life satisfaction

Satisfaction with life is used as a global measure of wellbeing. It is measured with a single item and scored on a scale from 0 to 10. The item was worded as follows: 'All things considered, how satisfied are you with your life? A visual aid in the form of a show card was then used to graphically portray the scale respondents were to use in answering this question. Only the extreme values on the scale were labelled, with a score of 0 described as 'totally dissatisfied' and a score of 10 as 'totally satisfied'. A similar question has been used in other longitudinal panel studies internationally (23).

Employment status

In this report we compare life satisfaction when 'not in the labour force' to the other categories of employment status. We considered general employment status (NILF as the

reference) in comparison to unemployed or being employed. Unemployment is defined, following the ABS definition, as actively looking for work in the last 4 weeks. Not in the labour force is defined as not working and not actively seeking work.

Employment arrangement

Following this, we looked at the form of employment arrangement. This is defined by the specific terms of the employment contract grouped into the following mutually exclusive categories: permanent, casual or labour hire, fixed-term contract or self-employed (13, 15). Generally speaking, the quality of jobs tends to be higher in permanent and fixed-term contract arrangements, lower in casual and labour hire, and varied in self-employment (13).

Job quality

A multidimensional measure of psychosocial job quality was then constructed using the measures of psychosocial job characteristics available in the HILDA survey (job control, job demands and complexity, job insecurity, and unfair pay). Full details of the construction and validation of the job quality measure are presented elsewhere (6, 24, 25). In brief, factor analysis and structural equation modelling identified three separate factors, which were labelled: job demands and complexity (three items); job control (three items); and perceived job security (three items). An additional single item assessing whether respondents considered that they were paid fairly for their efforts at work was included as a fourth factor measuring one aspect of the effort-reward imbalance model (26). The individual scales were associated with more widely used measures of job demands and control, and other employment conditions such as casual status, hours worked and shift work. Each factor was dichotomized to identify the quartile experiencing the greatest adversity and the composite measure constructed by summing the number of adverse psychosocial job conditions (high job demands and complexity, low job control, high job insecurity and unfair pay). Because of the small number of respondents reporting all four job adversities in a single year/wave, this composite scale was top-coded at three and, thus, produced four categories ranging from optimal jobs to three or more psychosocial adversities (poorest quality jobs).

In this report we compare life satisfaction when 'not in the labour force' to each of the categories of job quality when young people are employed.

Other variables used in this report

We include other variables as confounders in regression models or in descriptive tables: age (measured continuously); highest level of education (postgraduate, bachelor, certificate or diploma, year 12, less than year 12); presence of disability or long term health condition (yes/no) and household structure (couple or lone adult residing with dependents, couple without dependents, lone person without dependents, and a group or multiple person household); occupational skill level (low [sales, machinery workers, and labourers], medium [technical and trade workers, community and personal service workers, and clerical and admin workers], and high [managers and professionals] according to the Australian and New Zealand Standard Classification of Occupations occupational groupings (27)) and information on industry of employment (an 18 level variable defined by the ANZSIC 2006 division).

Analytical approach

Longitudinal linear fixed-effects regression models were used to estimate the association between employment status (exposure) and life satisfaction (outcome), and in a second analysis between categories of employment status graded by psychosocial job quality and life satisfaction. The results show the difference in average life satisfaction within persons in each employment state (permanent, casual or labour hire, fixed term, self employed or unemployed) or each level of job quality (optimal, 1 adversity, 2 adversities, 3 or more adversities) relative to not being in the labour force. These models provide an indication of within-person effects, where each individual acts as their own control and estimates are not confounded by personal, demographic and environmental factors that do not change over time (time-invariant) (28). Fixed-effects models are particularly useful where time-invariant confounding is likely to cause bias in causal estimates. For example, both mental health and perceived psychosocial working conditions may be affected by within-person factors such as personality, early childhood experiences, or medical history (each of which are time invariant in the analyses conducted). We controlled for time-varying (or variant) confounding by including a number of relevant covariates (age, household structure, health status and education) into the fixed-effects models.

With respect to the time between exposure and outcome, psychosocial job quality was related to mental health in the same year of observation, based on evidence from a previous panel study of four annual waves showing that changes in job stressors were associated with changes in mental health over a one year time frame (29) as well as previous analyses in the HILDA dataset (30).

We have modelled the life satisfaction variable as a linear continuous variable. The variable however is a five level ordinal variable, and the ideal estimation for this kind of variable is an ordered probit model. The coefficients from these models are more difficult to interpret and there is little practical difference in the estimates. Thus we include results from the linear models in the main result of the paper, and to allow for this comparison, we also provide the corresponding estimates from an ordered probit model of life satisfaction in Appendix Table 3B, 4B and 6B.

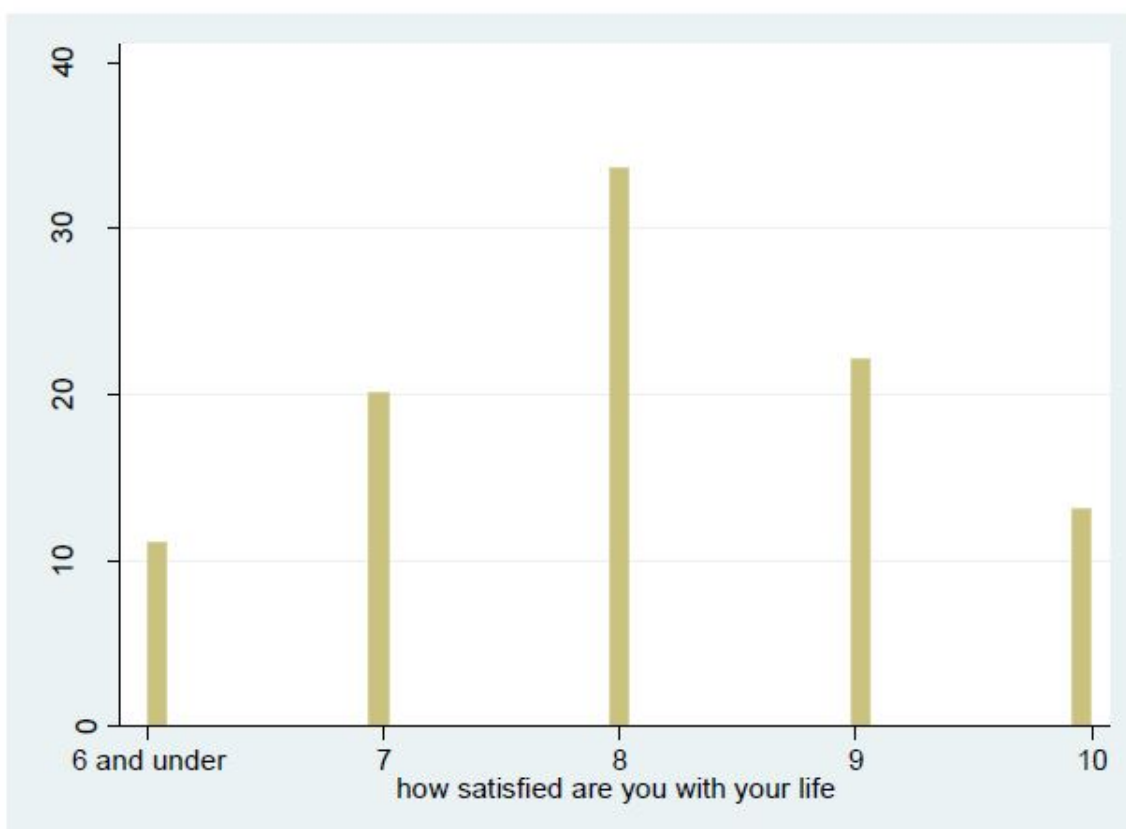
We also conducted a sensitivity analysis limited to individuals who were not engaged in full or part time study.

Results

Life satisfaction in young people

A summary of the distribution of responses to the life satisfaction question for the complete age-limited sample (up to 30 years) is provided in Figure 1. In the original 10 level variable responses are highly skewed towards high levels of satisfaction, with the most common response being 8, and almost 40 per cent selecting above 8. There are very small numbers selecting life satisfaction below 6 so we collapsed the lower categories into 'six and under' creating variable that was more normally distributed.

Figure 1: Proportion of people reporting each level of life satisfaction, revised scale



Demographics of the sample

Table 1: Description of key demographics of persons in the analytic sample: First and last wave in the HILDA study. Persons = 11,537, Observations = 47,780.

	First wave	Last wave
Age (mean, (sd))	20.56 (5.02)	24.11 (4.93)
Income (mean, (sd))	36,502 (21,712)	44,123 (26,651)
Life sat – 10 item (mean, (sd))	8.10 (1.49)	7.89 (1.43)
Life sat – 5 item (mean, (sd))	2.12 (1.24)	2.01 (1.18)
Gender		
Male	49.37	49.37
Female	50.63	50.63
Household structure		
Couple	20.92	23.48
Couple with children	46.54	40.49
Lone parent	13.66	11.15
Lone person	3.79	10.92
Other	15.09	13.96
Employment status		
Employed	60.58	71.66
Unemployed	10.30	8.10
Not in the labour force	29.12	20.25
Employment arrangements*		
Permanent	45.22	54.71
Casual or labour hire	41.93	29.56
Fixed term	8.14	9.10
Self employed	4.71	6.63
Occupational skill level*		
High	20.67	28.04
Medium	39.02	42.30
Low	40.31	29.66
Education (highest level)		
Postgraduate	2.74	5.03
Bachelor	10.39	14.88
Certificate or diploma	17.65	25.25
Year 12	18.89	25.76
Less than year 12	50.33	29.08
Long term health condition		
Yes	14.04	14.90
No	85.96	85.10

*Percentage of those employed

Table 1 shows the key demographics of the sample. We include summary measures from the first and last waves in HILDA to describe how the sample changes over time. The average age at the entry to the study was 20.5 years, with the average age at the last recorded observation was 24 years. The income in the initial wave was approximately \$36,500, and this rose to approximately \$44,000 in the final wave. There were equal numbers of men and women in the sample, and this remained consistent over time. Household structure changed over time, with an increase in couple and lone person households. This probably reflects the shift from young people living with their family ('Couple with children') to on their own or with others. There was an increase in the proportion of people employed from 60.6% to 71.6%, and a corresponding reduction in those who were 'NILF', falling from 29% to 20%. Of those who were employed, there was an increase in permanent jobs (45% to 55%) and a decrease in casual jobs (42% to 30%). Those in high skill occupations also increased (21% to 28%). For the entire sample, education levels increased over time, with the proportion of those with a certificate/diploma rising from 18% to 25%, and bachelor degrees from 10% to 15%. The presence of long-term health conditions/ disability was relatively stable, with approximately 15% reporting the presence of a health issue.

Bivariate associations between work and life satisfaction

Table 2: Life satisfaction (scale 1 to 10) by employment type and job quality in analytic sample. Persons = 11,537, Observations = 47,780.

	Mean life satisfaction, (sd)
Employment type	
Employed	7.99 (1.28)
Permanent	7.97 (1.22)
Casual or labour hire	8.04 (1.35)
Fixed term	8.01 (1.23)
Self employed	7.94 (1.33)
Unemployed	7.70 (1.72)
NILF	7.99 (1.60)
Psychosocial job quality	
No adversities	8.23 (1.12)
One adversity	8.01 (1.29)
Two adversities	7.82 (1.31)
Three or more adversities	7.60 (1.45)
Gender	
Male	8.00 (1.39)
Female	7.99 (1.35)

Age	
<20	8.25 (1.35)
20-25	7.93 (1.34)
26-30	7.82 (1.37)
Occupational Skill	
Low	8.02 (1.37)
Medium	7.98 (1.28)
High	7.98 (1.14)
Current Main Job Industry**	
Electricity, Gas, Water & Waste Services	7.80 (1.35)
Information Media & Telecommunications	7.82 (1.16)
Professional, Scientific & Technical Services	7.88 (1.10)
Manufacturing	7.89 (1.42)
Financial & Insurance Services	7.89 (1.12)
Administrative & Support Services	7.90 (1.37)
Transport, Postal & Warehousing	7.91 (1.44)
Wholesale Trade	7.92 (1.35)
Public Administration & Safety	7.96 (1.21)
Accommodation & Food Services	7.99 (1.34)
Health Care & Social Assistance	8.01 (1.22)
Retail Trade	8.02 (1.28)
Other Services	8.05 (1.41)
Construction	8.06 (1.32)
Rental, Hiring & Real Estate Services	8.10 (1.14)
Mining	8.12 (1.24)
Agriculture, Forestry & Fishing	8.13 (1.34)
Education & Training	8.17 (1.17)
Arts & Recreation Services	8.20 (1.17)

** ANZSIC 2006 division

Table 2 shows the bivariate associations between life satisfaction and employment characteristics. Life satisfaction was similar across employment types, with a mean score of 8 for all employment types but was lower when people were unemployed, with a mean score of 7.70. The association between life satisfaction and job quality was the strongest of those examined, with life satisfaction increasing with increasing job quality. When young people were employed in optimal jobs, they had a mean life satisfaction score of 8.23, and when in a job with three or more adversities their life satisfaction was 7.60. Life satisfaction was similar for men and women, and seemed to decline slightly with age. Those aged under 20 years had a mean score of 8.25, while those who were 26-30 had a mean score of 7.82. Life satisfaction did not appear to vary by occupational skill level but there were some variations by industry.

The lowest life satisfaction was reported by those employed in ‘electricity, gas, water and waste services (mean score 7.80), Information, media and telecommunications (mean score 7.82) and ‘professional, scientific and technical services’ (mean score 7.88). The industries with the highest life satisfaction scores were ‘Arts and recreations services; (mean score 8.20), ‘education and training (mean score 8.17) ‘agriculture, forestry and fishing’ (mean score 8.13).

Regression analyses

Table 3: Fixed effects models of life satisfaction (scale 1-5) comparing NILF to employment state

	Coef	95 % CI	P value
Employment status			
NILF	Ref		
Employed	-0.05	-0.09, -0.02	0.001
Employment type			
NILF	Ref		
Permanent	-0.06	-0.09, -0.02	0.003
Casual or labour hire	-0.04	-0.08, -0.01	0.009
Fixed term	-0.06	-0.10, -0.01	0.017
Self employed	-0.06	-0.13, 0.01	0.075
Unemployed	-0.12	-0.17, -0.08	<0.001

Adjusted for age, long term health condition/disability, household structure and education

Table 3 shows the results of a fixed effects (within persons) regression analysis, where we compared the average effects of being in each employment state to the reference category of NILF. There was on average a -0.05 decline in life satisfaction when young people obtained employment. We observed a small but statistically significant drop in life satisfaction when people entered most types of employment arrangement and statuses compared to when they were ‘NILF’. There were similar declines (approx. a decline of 0.05 of a point) for all types of employment contracts (permanent, casual or labour hire and fixed term). There was no significant difference when people were self-employed compared to NILF. The largest decline was observed when people were unemployed, with a 0.12 decline in life satisfaction compared to when they were ‘NILF’.

Figure 2: Graphic of the relationship between life satisfaction and employment state

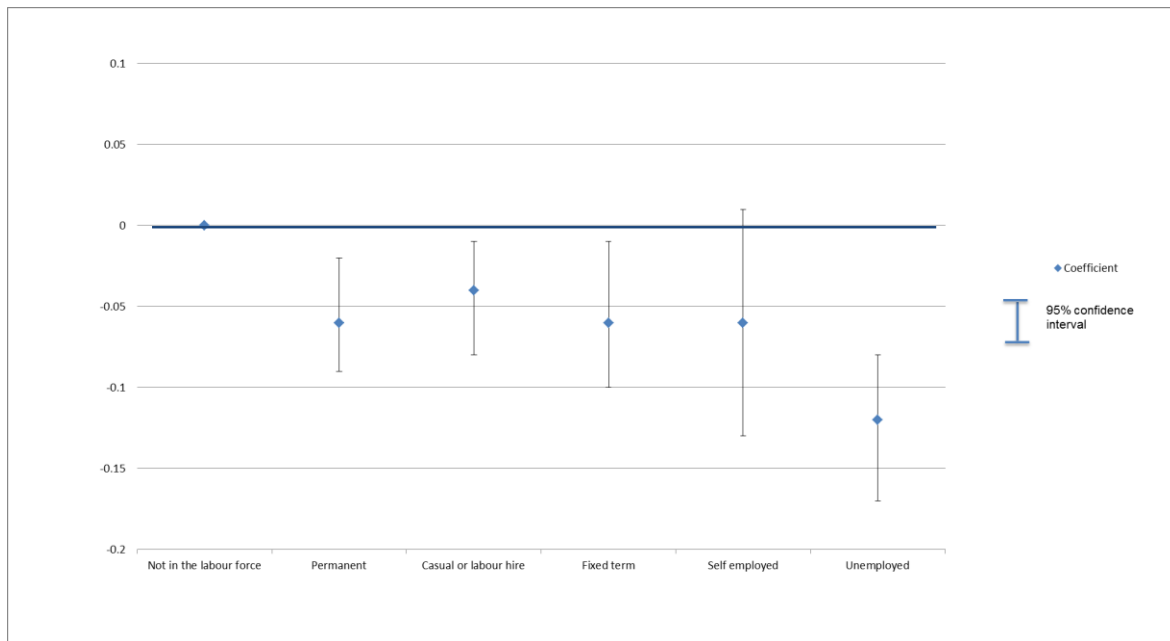


Figure 2 is a graphical representation of the findings presented in table 3. The average change in life satisfaction within people is represented by the blue markers and the 95% confidence intervals are represented by the error bars above and below the estimates. Here we see the line of ‘no effect’ at the value of 0.00, which represents life satisfaction in the reference category of NILF. We see that employment states were associated with a decline in life satisfaction (with the exception of self-employment where there was no difference), with the largest decline for unemployment.

Table 4: Fixed effects models of life satisfaction (scale 1 to 5) by psychosocial job quality

	Coef	95 % CI	P value
Job Quality			
Not in the labour force	1.00 (ref)		
Optimal	0.03	-0.01, 0.06	0.151
1 adversity	-0.05	-0.08, -0.01	0.006
2 adversities	-0.11	-0.15, -0.08	<0.001
3 or more adversities	-0.20	-0.26, -0.15	<0.001

Adjusted for age, long term health condition or disability, household structure and education

Table 4 shows the results of a fixed effects (within persons) regression analysis, where we compared the average effects of being in different levels of job quality compared to being in the reference category of NILF. We observed an increasing decline in life satisfaction with the decreasing quality of jobs, compared to when they were 'NILF'. There was no observable difference between being NILF and being in optimal jobs. There was a modest decline in life satisfaction when being in a job with one adversity (0.05 of a point) compared to being NILF, and an stepwise increase to 0.20 of a point for when people where in jobs with three or more adversities.

Figure 3: Graphic of the relationship between life satisfaction and job quality

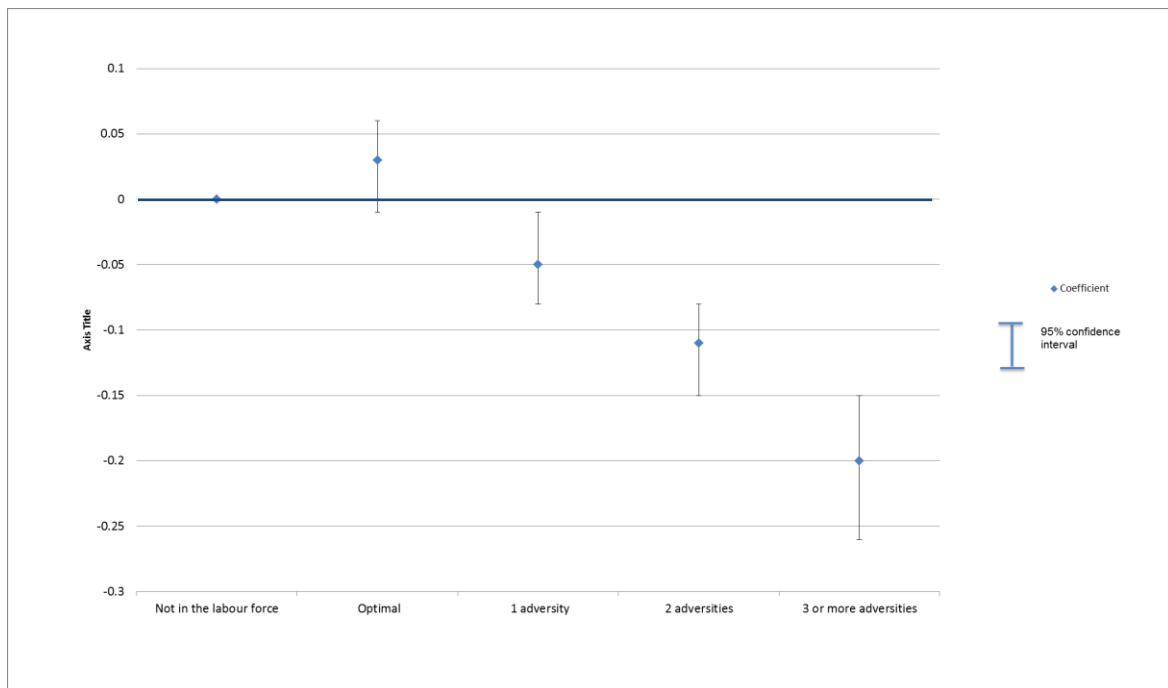


Figure 3 is a graphical representation of the findings presented in table 4. The average change in life satisfaction within people is represented by the blue markers and the 95% confidence intervals are represented by the error bars above and below the estimates. Here we see the line of 'no effect' at the value of 0.00. For optimal jobs, there is no statistically significant difference in life satisfaction compared to being NILF. Meanwhile, jobs with any adversities (one, two or three or more adversities) were significantly associated with increasing declines in life satisfaction compared to life satisfaction when people were in NILF, with the largest decline for jobs with three or more adversities.

5.5 Number of transitions from 'Not in the Labour Force' to employment

Type of transitions	Number of initial transitions	Number of actual transitions*
NILF to unemployment	858	924
NILF to employment	2235	2571
NILF to perm	660	700
NILF to casual or labour hire	1410	1532
NILF to fixed term	169	172
NILF to self employed	110	113
NILF to optimal jobs	559	559
NILF to jobs with adversity	1772	1772

*Can be more than one transition per person over their contributed waves (up to 13 waves).

Table 5 shows the specific transitions from NILF to various states of employment including unemployment; optimal jobs and jobs with any adversities. The initial transitions are restricted to the first transition from NILF to each of the employment states listed, therefore representing the first entry into the paid labour force, or into each of the employment states. For example, a NILF to unemployment transition may occur when a person moves from being not in the labour force into unemployment. The main point of Table 5 is to demonstrate the most people tend to make only one transition, at least of each type.

Sensitivity analysis

Ordered probit regression models can be seen in the Supplementary File 1. The results of these models are very similar to those presented above, with some slight attenuation in significance (see tables 3B and 4B). We also re-analysed the data excluding part-time and full-time students and results were very similar to the fixed effects regression results (see tables 3C and 4C).

Discussion

Discussion of findings

We observed small declines in life satisfaction when young people were employed compared to when they were NILF, and larger declines when people were unemployed compared to when they were NILF. We then examined the quality of jobs, and saw declines in life satisfaction only for people in jobs with one or more adversities (low control, high demands, low security and unfair pay). Put another way, these results indicate that young people entering the paid labour force may experience a small but significant decline in life satisfaction and wellbeing, unless they are entering into a high psychosocial job quality. This suggests that promoting high quality psychosocial work for younger workers will protect and promote their wellbeing, and may reduce the likelihood of later mental health problems, particularly if this sets up the young person for a working life characterised by good psychosocial quality jobs.

The magnitude of the observed declines in life satisfaction was small, but comparable to other studies. A previous analysis in HILDA on the full working population (all ages) showed an unemployment-associated difference of -0.3 to -0.4 (depending on how long they were unemployed for) compared to NILF; this is 2-3 times what we observed for younger workers, and is likely driven in particular by a stronger effect for middle-aged men, who have been previously shown to be most strongly affected because of greater financial responsibilities (e.g., in providing for families) as well as work playing a particularly strong role in terms of social identity (31). By comparison, in the same study, being married—which is considered to be a ‘sizable and significant’ influence on life satisfaction, shows a +0.3 difference in life satisfaction compared to single, never married males. Hence, though these differences are small quantitatively, our observed employment-related differences they are comparable in magnitude to other important influences. Further, the patterning in relation to work experience is coherent and consistent with previous research and theory. The within-person analysis (each person serving as his or her own control) is a conservative modelling strategy usually resulting in much smaller coefficients than more traditional regression modelling that estimates differences between different persons (which tend to be larger). The statistically significant differences within persons, combined with the observed stepwise dose response between levels of psychosocial job quality and life satisfaction suggests a causal relationship. Accordingly, the psychosocial quality of work is directly related to the life satisfaction of young people and, where young people transition into a poor quality environment, their wellbeing suffers.

There is limited quantitative research internationally with which to compare our findings on the experience of young people going into paid work. One of few we were able to find was a Swiss study on young adults entering the workforce after vocational training into five different occupational groups (20). Results suggest that factors that contributed to wellbeing in younger workers included improved job control and feeling appreciated at work (20). Data from the Queensland-based Young Workers Advisory Service (YWAS) in 2007 showed that young workers frequently seek help from the YWAS for three main reasons: 1) low level of pay and conditions (pay/remuneration); 2) a high level of precariousness in employment (dismissal/redundancy), and; 3) a high level of vulnerability to exploitation (employment conditions) (17). Two further areas of concern included the low quality of many young workers' jobs (including their lack of access to training and skills upgrading) and workplace bullying, which constituted one-fifth of all employment-related concerns reported to YWAS. These findings are consistent with our previous research that younger workers have lower levels of job control than their older counterparts (11) as well as the results presented in this report, which show a small decline in life satisfaction upon becoming unemployed or experiencing adverse working conditions.

Our research also further demonstrates the importance of the psychosocial job quality on wellbeing (6, 32). While there is a lack of Australian studies, US research has demonstrated the importance of psychosocial job quality on the mental health of young workers (33). Using the National Longitudinal Survey of Youth (NLSY), Zimmerman et al (33) has shown that jobs with higher 'social and occupational status' are associated with lower depressive symptoms for young employed males, while physically uncomfortable or dangerous jobs are associated with more depressive symptoms for young women. Other studies have highlighted the importance of psychosocial job quality on the wellbeing on young people over the course of their working life (34).

Strengths and limitations

Below we discuss the strengths and limitations of this study, and summarise some of the complex methodological issues. First, our outcome and exposure variables are self-reported; thus there is a possibility for dependent misclassification, whereby errors in the exposure and outcome are correlated. In addition to the stressors contributing to the job quality measure used in this study, there are many other important psychosocial aspects of the work environment that were not included in this panel study that could also have an influence on

our results (e.g., social support and bullying at work), suggesting that this study provides a conservative estimate of the influence of workplace psychosocial stressors on mental health. We were also not able to ascertain the young person's role in their household so could not accurately measure their living arrangements, or capture the transition from living at home with parents to living with others, which is another potentially important influence on life satisfaction. Further, the outcome of life satisfaction was based on a single question in the survey and single items have been reported to be insensitive to measuring change within persons (35). In addition, HILDA does not have any specific data items on resilience; hence we were unable to assess this directly. Higher life satisfaction, as a global measure of wellbeing, likely helps to buffer the impacts of stressful life events and experiences, and thus can be seen as related to resilience.

In stating these limitations, there were a number of strengths in this study. These included the ability to examine the relationships between psychosocial working conditions and life satisfaction over time using a large representative national sample. We were able to use a previously validated measure of psychosocial job quality. The fixed effects analytical approach allowed us to examine causally-robust within-person associations controlling for time-invariant confounders that may have otherwise biased results, even though the estimates obtained, strictly speaking, are generalizable only to those participants reporting changes in exposure over their contributed waves (and not to the entire source population). Further, our study provides a novel contribution to research as it is among the first to assess the employment, life satisfaction and psychosocial quality of a job among young Australian workers. Our results suggest that young people life satisfaction and resilience can be supported or enhanced by:

1. Improving employment opportunities for young people (i.e., reducing unemployment);
2. Enhancing the psychosocial quality of jobs for young people

Work can provide many benefits to life satisfaction, wellbeing, and the development of resilience, including the promotion of self-efficacy and self-esteem, a sense of structure and meaning, the development of social connections support to extend family and neighbourhood networks, and the provision of income. The outcomes of having a healthier workforce holds the potential to result in better productivity outcomes for employers, and lower reliance on social welfare.

Recommendations

Our results, combined with previous research in this area, have implications for policy and practice in two main areas: optimising the psychosocial quality for jobs for young people (1-3 below), and addressing youth unemployment (4 & 5 below). Because VicHealth's activities in this area are more aligned with optimising job quality (e.g., through the Creating Healthy Workplaces program), recommendations in this area are more directly relevant for VicHealth. For completeness (and for other policy-makers or practitioners with an interest in this report), we have also included recommendations on addressing youth unemployment through improved job opportunities. Our results-taken together with other evidence – suggest the following implications for policy-makers, practitioners, employers, and young workers:

1. Promoting high quality psychosocial work for younger workers will protect and promote their wellbeing, and may reduce the likelihood of later mental health problems, particularly if this sets up the young person for a working life characterised by good psychosocial quality jobs¹. This involves a combination of reducing psychosocial job stressors and promoting the positive aspects of work (39). Various resources are available to support employers in these efforts, including VicHealth publications on reducing job stressors (40) as well as more recently-developed guidelines on preventing mental illness in the workplace (<http://prevention.workplace-mentalhealth.net.au>) (41) and promoting the positive aspects of work (<http://www.superfriend.com.au/news/2015-06-29/promoting-positive-mental-health-in-the-workplace-guidelines-for-organisations>). This might serve as a refresh for similar messages already being promoted through VicHealth's Creating Healthy Workplaces program.

2. Improving mental health literacy among young workers, particularly as the concept applies in the workplace setting, would help young workers in choosing good work (or leaving bad work before it becomes harmful), recognising the influence of working conditions on their mental health and wellbeing, advocating for their rights and fair treatment at work, looking after their mental health and wellbeing as well as that of their peers, and knowing where and how to seek help when needed. In addition,

¹ The latter point is made based upon European studies showing that jobs with high job strain (low control combined with high demands) have an adverse effect on job-related learning (36), and that poorer psychosocial quality jobs increase the risk of early exit onto disability pensions (37, 38)

stigma reduction is another important element of mental health literacy interventions, and general mental health literacy would serve as a resource to youth experiencing unemployment . We are currently collaborating with the creators of the mental health literacy concept, and recently articulated a concept of workplace mental health literacy with them (39). Based on Jorm’s earlier definition of MHL as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention” (42), we define workplace mental health literacy as the knowledge, beliefs, and skills that aid in the prevention of mental disorders in the workplace, and the recognition, treatment, rehabilitation, and return to work of working people affected by mental disorders. Given their strengths in the area, VicHealth could consider running (or collaborating with other NGOs such as *beyondblue* or *Movember*) a social marketing or other educational campaign on workplace mental health literacy for young workers;

3. Investing in research on the factors that contribute to young people’s wellbeing and resilience at work is needed due to the paucity of research in this area. There is also a need to understand how the psychosocial quality of work can be optimised across different industry and employment contexts in Australia, which would call for more applied intervention research studies.

Recommendations 1-3 complement and extend those of the UK’s wide-ranging Foresight Report on *Mental Capital & Wellbeing* (35) which included extensive discussion of mid-adulthood work and skills intervention (chapter 5), acknowledging that “the increasing intensification of work and its effect on stress and anxiety are of critical importance to the individual, to business, and to the state (p 173).” recommending various strategies for reducing stress, promoting wellbeing, and reducing mental ill health-related stigma and discrimination in the workplace setting.

4. Because unemployment is associated with a decline in life satisfaction as well as other adverse health outcomes (43), and because unemployment is substantially higher in young workers than older, policy makers and practitioners should further consider strategies for addressing Youth unemployment at the structural level.

5. Policy initiatives to tackle youth unemployment and the psychosocial quality of work should be rigorously evaluated. One recent initiative launched by the federal government is 'Generation Success' (<https://www.employment.gov.au/generation-success-youth-employment-initiative>), an industry-led initiative aimed at working with employers, young people as well as parents and educators to address unemployment. The initiative includes a number of resources, including information on how to obtain a job, stories from young people and employers, and links to job seeking services. Victoria also has the Youth Employment Scheme (YES), run by the Department of Human Services, which offers traineeships for unemployed or disadvantaged young people (aged between 15 and 24 years) (<http://www.dhs.vic.gov.au/about-the-department/our-organisation/careers/employmentprograms/victoriaworks-for-young-people>).

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Appendix

Ordered probit regressions

Table 3b: Ordered probit models of life satisfaction (scale 1-5) comparing NILF to employment state

	Coef	95 % CI	P value
Employment type			
NILF	Ref		
Permanent	-0.04	-0.08, 0.01	0.063
Casual or labour hire	-0.05	-0.09, -0.02	0.006
Fixed term	-0.04	-0.09, 0.02	0.162
Self employed	-0.02	-0.10, 0.06	0.617
Unemployed	-0.19	-0.25, -0.14	<0.001

Adjusted for age, long term health condition/ disability, household structure and education

Table 4b: Ordered probit model of life satisfaction (scale 1 to 5) by psychosocial job quality.

	Coef	95 % CI	P value
Employment type			
Not in the labour force	1.00 (ref)		
Optimal	0.09	0.05, 0.14	<0.001
1 adversity	-0.04	-0.08, 0.01	0.073
2 adversities	-0.17	-0.21, -0.12	<0.001
3 or more adversities	-0.31	-0.37, -0.24	<0.001

Adjusted for age, long term health condition or disability, household structure and education.

Results when excluding full and part time students

Table 3c: Fixed effects models of life satisfaction (scale 1-5) comparing NILF to employment state, excluding full and part-time students

	Coef	95 % CI	P value
Employment type			
NILF	Ref		
Permanent	-0.06	-0.11, -0.02	0.006
Casual or labour hire	-0.05	-0.09, -0.01	0.012
Fixed term	-0.07	-0.13, -0.02	0.013
Self employed	-0.07	-0.15, -0.01	0.104
Unemployed	-0.13	-0.18, -0.08	<0.001

Adjusted for age, long term health condition/disability, household structure and education

Table 4c: Fixed effects models of life satisfaction (scale 1 to 5) by psychosocial job quality, excluding full or part-time students

	Coef	95 % CI	P value
Employment type			
Not in the labour force	1.00 (ref)		
Optimal	0.01	-0.03, 0.06	0.605
1 adversity	-0.06	-0.10, -0.01	0.008
2 adversities	-0.12	-0.17, -0.08	<0.001
3 or more adversities	-0.21	-0.27, -0.15	<0.001

Adjusted for age, long term health condition or disability, household structure and education.



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