Young workers and mental health

A systematic review of the effect of employment and transition into employment on mental health

A report prepared for the Victorian Health Promotion Foundation

Associate Professor Allison Milner
Dr Phillip Law
Associate Professor Nicola Reavley

School of Population and Global Health
The University of Melbourne

Table of contents

Executive summary 3

Background and introduction 5

What is good quality work? 7

What does employment look like for young Australians? 9

Unemployment 9

Underemployment 9

Psychosocial job stressors 9

Methodology for the systematic review 10

Search strategy 10

Inclusion and exclusion criteria 11

Qualitative data extraction 11

Results 13

Summary of review process 13

Question one: What are the impacts of work (e.g., quality of psychosocial work, precarious work, unemployment) on young people's mental health? 15

Question two: What are the impacts of the transition into work on the mental health of young people? 23

Question three: What is the effect of electronic and/or face to face social support on the mental health of young job seekers and young workers? 30

Question four: Given what we currently know about young workers' mental health, and the predicted changes to the world of work, what can be done to support young workers and improve their resilience? 35

Question five: What long term economic or social costs are associated with the poor mental wellbeing of young workers? 37

Discussion 39

Limitations of the review 39

Overall statement of findings 39

Overall report references 41

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.

Executive summary

The world of work is changing. Young people are particularly affected by these shifts. The purpose of this report was to provide a review of current research about the mental health effects of employment on young workers.

The results of this review suggested that young people are particularly likely to experience unemployment and underemployment. When they do obtain employment, younger workers are likely to report adversities such as low job control, higher psychological demands, harassment, and job insecurity. These job stressors have been shown to be associated with poorer mental health. At the same time, young people report that obtaining employment can be a very positive experience, leading to overall improvements in wellbeing.

One key determinant of successful employment is the assistance a young person is provided with during the time they are transitioning into the workforce. Our results suggest the importance of having a supportive educational system around young people as they begin to develop goals and strategies about moving into work. In addition to educational resources, young job seekers and workers are likely to benefit from social support provided by parents, teachers, and others. Support should be directed and skills based, but also aim to provide emotional support and encouragement. The studies we reviewed above also highlighted the need for the adequate treatment and support for young people with mental health problems who are thinking about (or participating) in paid employment.

Our search found that there were relatively few programs that sought to provide mental health support for young workers. This is a key gap in published literature.

Based on the findings presented in this report, the overall recommendations for improving the mental health of young workers and job seekers are to:

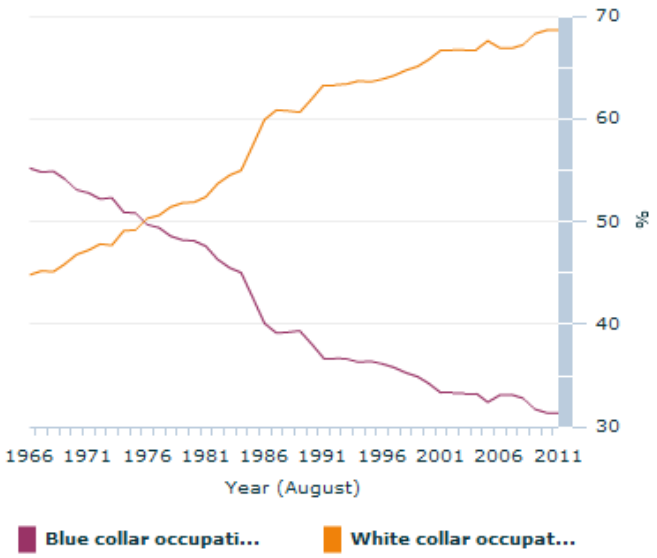
- Ensure that young people have access to suitable educational opportunities, whether this be through training and apprenticeships or through secondary schools and universities;
- Provide resources and programs that can help guide and support young people as they begin the process of transition into work;
- Encourage engagement in the labour market, particularly in fields that young people may be interested in working in;

- Ensure that workplaces are aware of the importance of providing work that is free of major psychosocial job stressors, and;
- Encourage mental health literacy among employers, young workers, and their colleagues.

Background and introduction

The 24-7 economy, advances in technology, and the global movement of people and ideas across borders have transformed the world of work. At the same time, there has been an increase in education among young Australians in recent decades [1]. Australians are less likely to work in blue collar occupations and increasingly likely to work in a diverse range of professional and service related roles, including in the health, education, business, and information and communication technology sectors (Figure 1).

Figure 1. Source(s): ABS Labour Force Historical Timeseries, Australia (cat. no. 6204.0.55.001); ABS Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003). Figure sourced from [2]



The changing nature of work offers numerous opportunities and advantages for younger workers, particularly as today's youth are the most educated and technologically literate generation yet seen. However, younger workers may also be the most vulnerable to shifts in the nature of work as they have had less opportunity to accumulate experience and credibility in the workplace than their older peers. As highlighted in a recent report released by the Foundation for Young Australians [3], young workers are likely to have a number of career trajectories in their lives and be employed in a variety of different occupations. This fact emphasises the need for younger Australians to focus on flexibility, skills and capabilities as they move into the job market. At the same time, the employment landscape is constantly shifting.

VicHealth seeks to further understand the impact of work and the transition into work on the mental wellbeing of young workers, with the view to informing policy and practice-related activities in

Australia. To addresses this objective, VicHealth commissioned an evidence review of the international research literature in this area, covering various work-related stressors such as traditional exposures (e.g., job control, job demands) and emergent stressors (e.g., job insecurity, transition between education, vocational activities, and employment).

The purpose of this review is to answer five key research questions related to the mental health effects of work on young people. These are:

1. What are the impacts of work (e.g., quality of psychosocial work, precarious work, unemployment) on young people's mental health?
2. What are the impacts of the transition into work on the mental health of young people?
3. What is the effect of electronic and/or face to face social support on the mental health of young job seekers and young workers?
4. Given what we currently know about young workers' mental health, and the predicted changes to the world of work, what can be done to support young workers and improve their resilience?, and;
5. What long term economic or social costs are associated with the poor mental wellbeing of young workers?

The current review will address research questions one to three with a systematic review using a PRISMA approach (see the following section, Methodology). The review will synthesise and summarise this existing evidence about the major impacts of work on young people's mental wellbeing in order to inform interventions and policy recommendations. We end this report by reflecting on the wider economic and social implications of work (and lack of work) on the mental health of young Australians.

What is good quality work?

Work can provide a number of tangible benefits to the mental health and wellbeing of an individual, including income, prestige, a social network, sense of meaning, as well as social support from colleagues [4]. At the same time, work can be detrimental to mental health. Prolonged or excessive job stress is a risk factor for mental health problems, and accounts for 13% of depression in working men and 17% in working women [5]. Evidence also suggests that job stressors (such as those discussed below) are risk factors for suicide [6].

Some of the main stress-arousing factors associated with work range from ergonomic (e.g., through repetitive physical movements), to physical and chemical (e.g., direct exposure of the sun, exposure to hazardous chemicals), to psychosocial exposures (e.g., low job control, high job demands). Of all these work exposures, psychosocial exposures have been found to be particularly detrimental to mental health. These include the following:

- Job insecurity (e.g., the perceived possibility that a person will lose their job);
- Low job control (e.g., low control over where, how, what and when work is undertaken);
- Excessive job demands (e.g., a large number tasks that need to be undertaken and the need to do many things);
- Low rewards for work (e.g., the perception of low pay for work, and a lack of recognition from colleagues and supervisors);
- Poor working relationships with colleagues and supervisors; and
- Bullying and harassment (e.g., repeated negative behaviour, mistreatment and/or abuse at work from others within the organisation) [7].

We will also discuss the more general term of “job stress”, which was measured in a number of the studies on young people, work and health (see results section). “Job stress” is a far more general concept, referring to an individual’s physiological and/or psychological response to work. From a public health and health promotion perspective, it is more problematic because it does not tell us anything about exactly where and how we should be intervening to improve mental health. There is also the concept of “job satisfaction” which was used in a number of studies. Like “job stress”, this is an unspecific term, likely to reflect a number of aspects of an individual’s working environment.

Alongside this, our review considers good work as work that is free of unemployment (when a person is looking for work and is not employed) and underemployment (when a person would like to work more hours in a job, but these are not offered).

What does employment look like for young Australians?

The purpose of this section is to provide an overall framework for understanding what work and employment looks like for young people in Australia. This will provide the context for the results of our systematic review on employment and health.

Unemployment

The current rate of employment among young people (15 to 24 years) is about 13% [8], which is between two and three times the rate of unemployment among older workers. The youth unemployment rate in Australia is among the worse in the G20 countries, coming in behind areas in the European region that were particularly affected by the 2007 economic recession [9].

Underemployment

The underemployed population represent those people employed part time who want to work more hours and are available to start work with more hours [10]. The youth underemployment rate is currently around 18%. This has been noted as a threat to the wellbeing of young Australian workers in a recent report released by the Brotherhood of St Laurence [11].

Psychosocial job stressors

Evidence from the Household Income Labour Dynamics in Australia (HILDA) survey suggests that young Australians are particularly at risk of being exposed to poor working conditions such as low job control, low job security, low control over work and high demands. A study by Milner et al. [12] showed that about 42% of young workers were exposed to at least one psychosocial job stressors. An older study by LaMontagne et al. [13] also showed that younger workers in Victoria are particularly at risk of being exposed to sexual harassment.

Methodology for the systematic review

Search strategy

The review adhered to the PRISMA approach to systematic reviews [14]. The systematic review utilised eight electronic databases that index literature from a wide range of disciplines including medical science (i.e., EMBASE, PubMED, Web of Science, CINAHL, Cochrane Library), public health (i.e., Informit), psychology (i.e., PsycINFO), and social science (i.e., SCOPUS).

We used a multi-tier search strategy to identify eligible studies for research questions one, two and three. At the first tier, we searched for keywords reflecting mental health ("self$harm" OR suicid* OR "attempted suicid*" OR parasuicid* OR "intentional$self$harm" OR "mental health" OR "wellbeing" OR "welbeing" OR "suicidal behav*" OR "psychiatr*" OR "depressi*" OR "anxi*"). At the second tier, we searched for common words for young people or age group ("young" OR "youth" OR "school leavers" OR "post school" OR "adolesce" OR "emerg* adul*"), recognising that we may need to extract data by age group in studies that are not specifically on young workers.

At the third tier for research question one, we searched for keywords related to psychosocial job stressors and working contexts ("job stress*" OR "psychosocial job stress*" OR "working condition*" OR "psychosocial NEXT/2 work*" OR "psychosocial NEXT/2 job*" OR "occupation* NEXT/2 stress*" OR "psychosocial NEXT/2 stress*" OR "work* NEXT/2 stress*") OR ("job control" OR "job demands" OR "job secur*" OR "job insecur*" OR "work secur*" OR "work insecur*" OR "precar* NEXT/2 work" OR "precar* NEXT/2 employ*" OR "precar* NEXT/2 job" OR "decision latitude" OR "skill discretion" OR "decision authority" OR "psychological demands" OR "workload" OR "effort$reward imbalance*" OR "organ* NEXT/2 justice" OR "organ* NEXT/2 injustice" OR "work* NEXT/2 hour*" OR "work* NEXT/2 time" OR "temp* NEXT/2 employ*" OR "work NEXT/2 leadership" OR "job NEXT/2 strain").

At the third tier for research question two, we searched for keywords reflecting employment ("job*" OR "employ*" OR "unemploy*" OR "work*" OR "labour market" OR "labor market" OR "employment status") and transition from unemployment to work ("NILF" OR "NEET" OR "not in" NEXT/2 "labor" OR "not in" NEXT/2 "labour" OR "not in" NEXT/2 "educat*" OR "not in" NEXT/2 "employ*" OR "not in" NEXT/2 "trainin*"). Search terms for research question three were extrapolated from those developed for research question two.

We conducted a search incorporating the search terms from tiers one, two, and three using standard Boolean operators. Keywords were adapted for the specific requirements of each electronic database. Truncation and wildcards were introduced where necessary to increase the sensitivity of the search. No restrictions were placed on publication status, but if we were unable to obtain

adequate details for data extraction these were later excluded from meta-analyses. We also excluded papers that we were not able to obtain in English. Reference lists of identified studies, as well as prior relevant reviews in the field were additionally hand screened to identify further relevant studies. Experts in the field were also contacted to assist with the identification of on-going evaluations.

Inclusion and exclusion criteria

The criteria for a study to be included were as follows: (i) a job stressor or job-related stress as exposures or risk factors; (ii) use of a prospective cohort, case-control, retrospective mortality, cross-sectional, or intervention trial design (pre-post design or randomised controlled trial); (iii) reported results either specific to young people (i.e., ≤30 years), or stratified by age group, or report the mean age of the sample being under 34 years of age; and (iv) use of an outcome measure assessing mental health, including depression, mental health status (e.g., Short Form Survey), general mental health or mental wellbeing/resilience, and psychological distress. Studies investigating associations with physical, ergonomic, and/or chemical exposures were excluded. Case reports, qualitative papers, study protocols, and descriptions were also excluded as these did not report quantifiable data on mental health related outcomes that could be extracted and used in meta-analysis.

The titles and abstracts of retrieved records were evaluated using a two-stage screening process. At the first stage, studies with relevant titles were selected for subsequent screening by two review authors (PL, AM) working independently of one another. Studies were excluded if they did not report stratified results in the abstract or mention that a stratified analyses was conducted. At the second stage, only those studies satisfying inclusion criteria following a review of the full-text were retained. Disagreements were resolved via consensus between the two review authors.

Qualitative data extraction

Methodological information was extracted from each study by one review author (PL) for research questions one to three. This information included the following: location of the dataset; objective of study; study design; description of the studied sample; key exposure variables; outcome measure; definition and assessment measure of the exposure variable(s); definition and assessment measure of the outcome variable(s); name, aim, and components, duration of program; and main findings of the study. Aside from this, during the review process, it became clear that there was a need to differentiate between “psychosocial job stressors”, defined as unfavourable aspects of work and working conditions such as low control over where, how and when work is undertaken, high

psychological demands, high job insecurity (e.g., the feeling that you are at risk of unemployment), low levels of perceived support from colleagues and supervisors, and low reported fairness of pay and justice at work.

Data extraction for quantitative measures was only possible on studies for research question one. Data was extracted by two review authors working independently. For each exposure variable, effect sizes were recoded so that higher values represent greater exposure to poorer psychosocial job stressors. All effect-size estimates were considered, including odds ratios (ORs), rate ratios, and correlation coefficients (CIs). However, raw data was extracted as a preference over aggregated effect measures. Estimates needed to present either a standard error or 95% confidence intervals (CI) to be included in meta-analyses. Alternatively, studies needed to provide raw data so that the standard error and CIs could be calculated. Where there are multiple subsets of a target group, the subset with the longest exposure on the outcome measure was examined.

Results

Summary of review process

Figures 1, 2, and 3 describe the process of the review for research questions one, two, and three, respectively, including how the eventual number of studies was arrived. Using the search terms, 4,024 and 25,781 publications were identified for research questions one and two, respectively. For research question one, seven publications were identified through other sources. After the removal duplicates, two reviewers reviewed the titles of 2,803 and 17,887 publications for research questions one and two, respectively. Full text screening was conducted on 40 and 106 articles for research questions one and two, respectively, to assess for eligibility. A total of 22 and 21 publications were included in the systematic review for both research questions one and two, respectively. The full-text articles of these publications were then extracted and examined by two reviewers. For research question one, quantitative data was extracted from 17 publications for statistical analysis. For research question three, a total of 20 publications were identified through other sources (including from the database search for research questions one and two) and included the systematic review.

Figure 1. Search strategy for question 1

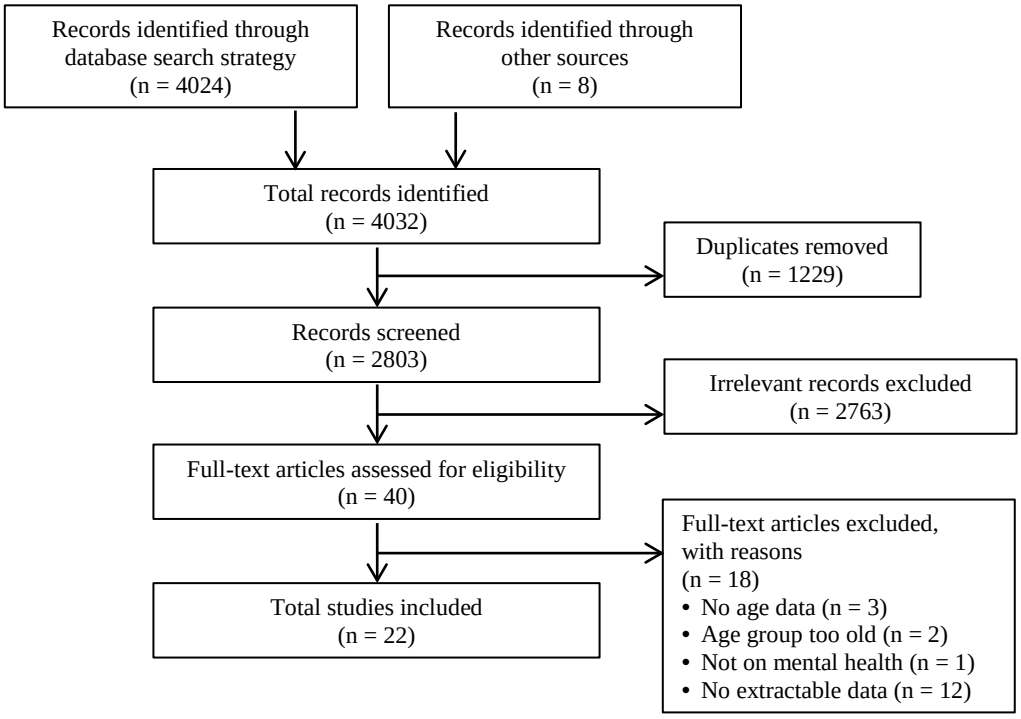


Figure 2. Search strategy for question 2

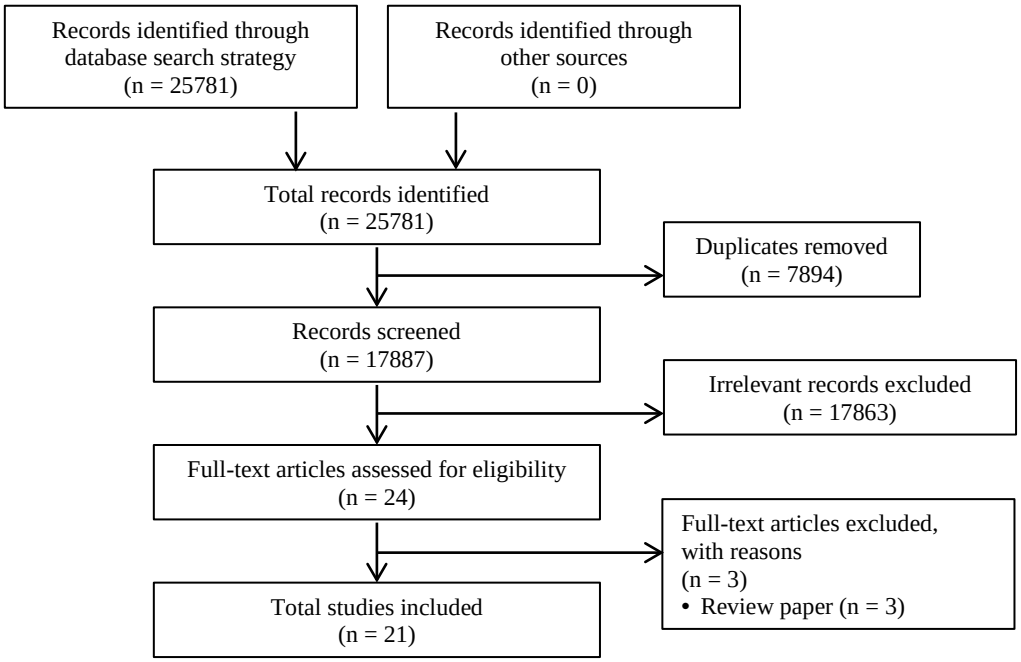
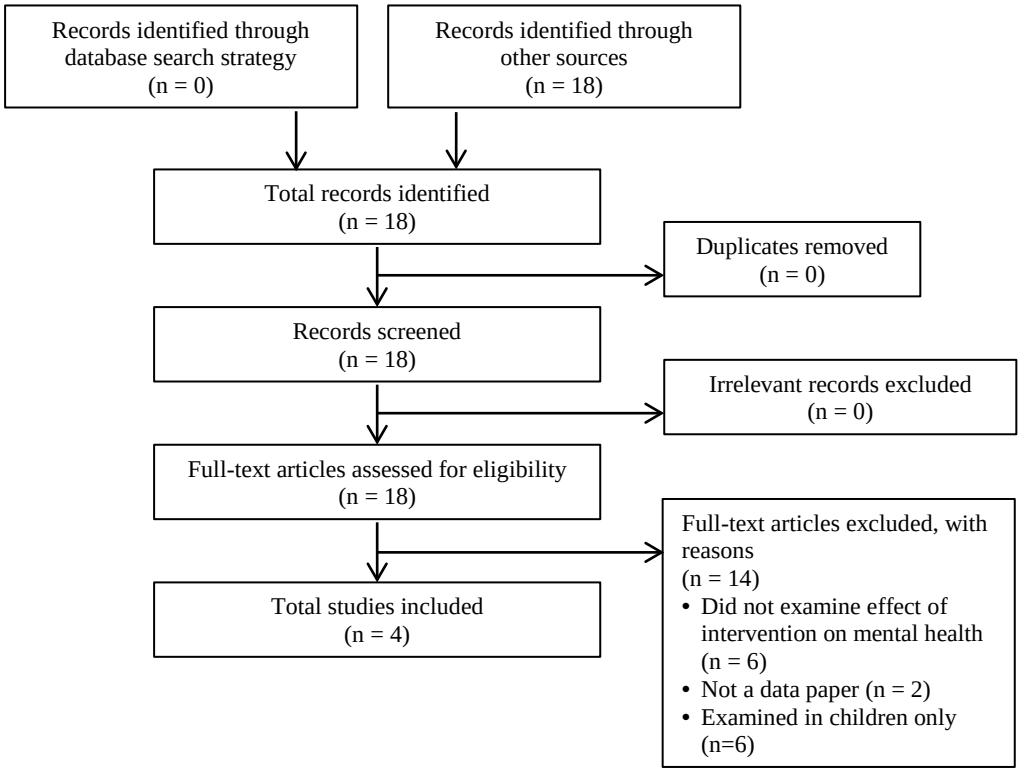


Figure 3. Search strategy for question 3



Question one: What are the impacts of work (e.g., quality of psychosocial work, precarious work, unemployment) on young people's mental health?

Table 1 shows the 20 studies identified for research question one. Among these studies, 14 studies examined the impact of work on young people's mental health at a specific point in time (cross-sectional) while six studies followed and observed the same individuals over a period of time (longitudinal cohort).

Cross-sectional studies

Of the 14 studies using cross-sectional design, four studies were conducted in Australia and the remaining in other countries (e.g., United Kingdom, United States, Switzerland, Sweden, Japan, South Korea, and Brazil). Three studies recruited graduates/students, eight recruited general working populations, one recruited garbage workers, one recruited military personnel, and one recruited nurses. Work-related exposure measures included unemployment/length of unemployment, attitudes to work, job stressors (e.g., working hours, workload, effort, reward, boredom, skill variety, demand, control, security), perceived fairness of pay, job satisfaction, and bullying/harassment/discrimination.

Unemployment (and the accumulation of unemployment) was linked with deteriorating mental health (measured through three items capturing depressive and nervous symptoms, and sleeping problems) among young people in one study [15]. Another study also showed that males employed casually or on fixed-term contracts reported higher odds of suicidal ideation (Milner, 2017a), suggesting the damaging effect of "precarious employment". However, one study found no association between precarious employment and mental health (measured using the SF-12) [16]. This suggests that there may be differential effects depending on the mental health outcome under study.

Among those who were employed, general "job stress" was linked with poor mental health such as symptoms on common mental disorders [17-19] and low life satisfaction [17]. One study found that students who were not satisfied with their jobs were more likely to experience low self-esteem, depressive affect, and minor psychiatric morbidity, compared with students who were satisfied with their jobs [20]. This study also found that students with low job satisfaction were no better off than those who were unemployed.

There was also some evidence about the mental health impacts of specific psychosocial job stressors. For example, a high workload and increasing working hours were found to elevate the risk of poor mental health [16, 21]. Other job stressors such as effort-reward imbalance, job strain, and an active job also increased the odds for common mental disorders [18]. Low job control, job insecurity and perceived unfair pay were related to increased odds of suicidal thoughts [22]. Two other studies found that other aspects of work, including lack of reward, job boredom, and low skill variety increased the risk of depression [23, 24].

Harassment or discrimination at workplace was associated with poor mental health and problem drinking, particularly in women [25]. Bullying or harassment was also found to predict greater odds of suicide ideation [26]. Another study among a sample of dental school graduates indicated that participants tended to report poor psychological health if they were more afraid of litigation and making mistakes at work [27].

Longitudinal cohort studies

Of the six studies using a longitudinal cohort design, one study was conducted in Australia and the remaining studies in the United Kingdom, the United States, Switzerland, Germany, and New Zealand. The UK study involved medical students while the remaining studies involved general working populations. Work-related exposure measures included attitudes to work, job stressors (e.g., workload, job security, job demand, job control, job demands, perceived unfair pay), and employment status. The UK study reported no association between working hours or work conditions and psychological health [28]. However this same study reported that being overwhelmed with work corresponded to greater anxiety, depression, and social dysfunction. Likewise, another study found that high job demands (excessive workload, extreme time pressures) doubled the risk of depression and anxiety compared with low job demands [29]. Young individuals who experienced more than two adverse job conditions (low control, high demands, low security, and unfair pay) were also found to be more likely to report poorer mental health, compared to those who were not in the labour force [30]. In line with these findings, one study found a spill-over effect of adverse job conditions on well-being from work into private life [31]. Having a temporary work status was also found to increase the severity of depressive symptoms [32], while job insecurity was found to be related to a diminished life satisfaction [33].

Overall summary of results

Unemployment was found to have negative impact on young people's mental health and wellbeing. Among those who are employed, a variety of job stressors and bullying/harassment/discrimination at workplace have been shown to adversely influence wellbeing and increase the risk of suicidal thoughts. Perceived fairness of pay and job satisfaction also play a role in influencing mental health of young working population. It is worth noting that the longitudinal cohort studies (which were of a higher methodological quality) more consistently reported a relationship between poor working conditions and poor mental health among young workers.

Table 1. Details of studies retrieved for question one

Study	Country	Study design	Participants	Exposure variable	Outcome measure	Main findings
Baldwin (1997) [28]	UK	Longitudinal cohort: 1986-1994	- N=142 - Medical students - Mean age=25 years	- workload (7 items) - Attitudes to Work (24 items)	-psychological health (General Health Questionnaire)	• No correlation between hours worked or working conditions with psychological health • "Feeling overwhelmed" positively correlated with GHQ anxiety, GHQ depression, and GHQ social dysfunction
Baldwin (1999) [27]	UK	Cross-sectional	- N=183 - Graduates of dental schools - 23-39 years old	- Attitudes to Work (25 items)	-psychological health (General Health Questionnaire)	• More they were afraid of litigation and making mistakes, the more symptoms they reported
Buddeberg-Fischer (2008) [17]	Switzerland	Cross-sectional	- N=433 - Medical graduates - Mean age=31.3 years (SD=2.4 years)	- Working hours per week - extrinsic components of stressful experience at work (Effort–reward imbalance at work questionnaire) - overcommitment, coping with the various job demands and eliciting rewards (6 items)	- Hospital Anxiety and Depression Scale (14 items) - Life satisfaction questionnaire - Physical and mental well-being	• Stress at work leads to symptoms of anxiety disorder and depression, and low-satisfaction in life
Clark (2012) [18]	England	Cross-sectional	- N=3383 - General population - 16-65 years old	- job effort (3 items; ERI questionnaire, Siegrist et al. 2009) - job reward (8 items; ERI questionnaire, Siegrist et al. 2009) - over-commitment (6 items; ERI questionnaire, Siegrist et al. 2009) - job demand (items measuring effort from the ERI questionnaire) - job control (2 items assessing extent to which employees have control over their work) - social support in the workplace (4 items)	- Common mental disorder (Revised Clinical Interview Schedule)	• Effort-reward imbalance, job strain, and an active job strongly associated with CMD • Social support at home did not influence the effect of work stressors on CMD

Fujino (2001) [21]	Japan	Cross-sectional	- N=384 - Garbage workers (night workers) - <25 years, 25-34 years old	Job stress (NIOSH generic job stress questionnaire)	-psychological health (General Health Questionnaire)	• Quantitative workload was strongly associated with mental health problems
Grebner (2005) [31]	Switzerland	Longitudinal cohort (two time points)	- N= 86 (time 1) & 65 (time 2) - General population (i.e., (nurses, cooks, sales persons, bank clerks, electronic technicians) - Mean age=22 years (SD=3.3), at time 1	- Working conditions (Instrument for Stress Oriented Task Analysis)	- General well-being - Job-related well-being (job satisfaction) - Spillover well-being (from work to nonwork domains)	• Significant effect of working conditions on spillover well-being
Helbling (2017) [33]	Germany	Longitudinal cohort	- N=1874 - General population - 27-30 years old (in first year of observation)	- Job insecurity (‘‘Are you concerned about your job security?’’)	- Life satisfaction (‘‘How satisfied are you with your life, all things considered?’’)	• Subjective insecurity related to a diminished starting point for life satisfaction
LaMontagne (2012) [16]	Australia	Cross-sectional	- N=1051 - General workforce - 18–30 years	- Employment arrangement - Workplace size - Workplace type - Sector type (manufacturing vs service)	- Mental health (SF-12)	• Poor mental health with increasing working hours • No association between precarious employment and poor mental health
Wiesner (2005) [23]	USA	Cross-sectional	- N=583 - General workforce - 21-28 years old	- Workload (3 items) - Cognitive demands (4 items) - Job boredom (4 items) - Skill variety (4 items) - Autonomy (4 items)	- Depressive symptoms (Center for Epidemiological Studies—Depression Scale)	• associations between high job boredom, low skill variety, and low autonomy and depression measures

Martins (2012) [19]	Brazil	Cross-sectional	- N=506 - Military personnel - <25 years, 26-35 years	Job stress (assessed by the effort-reward imbalance model, 23 items)	- Common mental disorders (GHQ-12)	• Job stress is associated with CMD • Specific occupational characteristics of the military environment can lead to a higher prevalence of CMD among those holding the rank of lieutenant
Melchior (2007) [29]	New Zealand	Longitudinal cohort	- N=972 - General workforce - 32 years old	Work stress (psychological job demands, work decision latitude, low work social support, physical work demands)	- Major depressive disorder (Diagnostic Interview Schedule) '- Generalized anxiety disorder (Diagnostic Interview Schedule)	• High psychological job demands (excessive workload, extreme time pressures) corresponds to double the risk of depression and anxiety (cf. low demands)
Milner (2016) [26]	Australia	Cross-sectional	- N=1000 - General workforce - 18-24, 25-34	- Working conditions (Copenhagen Psychosocial Questionnaire) - Psychosocial job stressors (quantitative demands (workload), supervisor support, coworker support, decision latitude, and skill discretion) - Workplace bullying (Victorian WorkCover authority community survey)	- Psychological distress (abbreviated psychological distress scale) - suicidal thoughts (Beck Depression Inventory)	• Bullying or harassment associated with 1.54 greater odds of suicide ideation, suggesting that higher job control and security were associated with lower odds of suicide ideation.
Milner (2017a) [22]	Australia	Cross-sectional	- N=13,884 - General workforce (males) - 10-55 years old	- job demands (7 items) '- job control (7 items) - job insecurity (7 items) - perceived fairness of pay (7 items)	- Suicidal ideation ("Thoughts that you would be better off dead or of hurting yourself in some way" from the Patient Health Questionnaire)	• Low job control, job insecurity, and unfair pay elevated odds of thoughts about suicide • Males employed casually or on fixed-term contracts reported higher odds of suicidal ideation
Milner (2017b) [30]	Australia	Longitudinal cohort	- N=10,534 - General workforce - ≤30 years old	- Psychosocial job quality (job control, job demands and complexity, job insecurity, unfair pay)	- Mental health status (Mental Component Summary of the Short Form 36)	• Decline in mental health for people in jobs with ≥2 psychosocial adversities (low control, high demands, low security, and unfair pay) cf. those not in the labour force • Young people in poor psychosocial quality jobs experience small significant decline in mental health cf. not in the workforce
Quesnel-Vallee (2010) [32]	USA	Longitudinal cohort	- N=3,577 - General workforce (temporary workers) - 14-22 years old	Employment status (Supplement on Contingent Work of the Current Population Survey)	- Depressive symptoms (Centre for Epidemiologic Studies Depression Scale)	• Depression symptom severity associated with exposure to temporary work

Reine (2004) [34]	Sweden	Cross-sectional	- N=1,044 - General workforce - 16, 18, 21, 30 years	Length of unemployment	- Psychological symptoms (composite index calculated from 9 items; sleeping problems, depression and sadness, restlessness, nervousness, concentration problems, worries, anxiety, palpitations, other nervous complaints)	• Long-term unemployment was more related to ill health and smoking in 21 year olds than in 30 year olds
Rospenda (2009) [25]	USA	Cross-sectional	- N=2,151 - General workforce	- Gender harassment/discrimination at work ("In the past 12 months at work, have you been discriminated against or harassed because of your gender?") - Generalized Workplace Harassment (Generalized Workplace Harassment Questionnaire) - Other harassment/discrimination at work ("In the past 12 months at work, have you been discriminated against or harassed for any other reason?") - Racial/ethnic harassment/discrimination at work ("In the past 12 months at work, have you been discriminated against or harassed because of your race, ethnicity, colour, or national origin?") - Life stressors (List of Threatening Experiences) - Job stressors (Stress in General Scale) -	- Mental health (Mental Health Inventory)	• Harassment/discrimination at work is associated with negative mental health and problem drinking consequences, especially in women.

Winefeld (1988) [20]	Australia	Cross-sectional	- N=742 - Students - 15 to 17 years old	Job satisfaction (16 item scale devised by Warr et al., 1979)	- Self-Esteem and Depressive Affect Scales (10 items) - Nowicki-Strickland Internal-External Locus of Control Scale (40 items) - Menth health (General Health Questionnaire)	• Job dissatisfaction corresponds to being more worse off in terms of self-esteem, depressive affect and minor psychiatric morbidity than those who were satisfied (noting that this findings is based on N=76 out of 664 employed subjects); moreover, individuals with low job satisfaction are no better off than young people who were unemployed.
Yoon (2013) [24]	South Korea	Cross-sectional	- N=441 - Nurses - Mean age=28.2 years (SD=5.4)	Job stress: job demand, job control, social support, job insecurity, organizational injustice, lack of reward, discomfort in occupational climate (Korean Occupational Stress Scale)	- Depressive symptomatology (Center for Epidemiologic Studies rating scale for Depression, Korean version) - Emotional labour, surface acting, and dee acting (Emotional Labor Scales)	• Surface acting, high job insecurity lack of reward related to increase in depressive symptoms (especially lack of reward)
Strandh (2014) [15]	Sweden	Cross-sectional	- 16 years old (N=989), 21 years old (N=990), 30 years old (N=959), 42 years old (N=985)	Exposure to unemployment	- Psychological Problems Index	• Youth unemployment connected with deteriorating mental health at all three target ages, 21, 30 and 42 years. • Accumulation of unemployment associated with deteriorating mental health

Question two: What are the impacts of the transition into work on the mental health of young people?

Qualitative studies

Table 2 shows the qualitative studies identified for research question two. Basset et al. [35] conducted a qualitative study on transition into employment among young people (n=10) who had been diagnosed with a psychotic disorder. A number of themes emerged from this analysis, including participants feeling as though their illness had resulted in a loss of goals, relationships, abilities and confidence in job prospects. Participants also reported a fear of stigma from employers, work colleagues, and others, and concern about how their mental health would impact their ability to maintain employment, if they did obtain work.

Lee et al. [36] conducted a cross-sectional study of 12 early school leavers in Australia in order to assess self-reported experiences and opportunities since leaving school. Participants reported that they were often excluded in the school setting and labelled as "outcasts". Although some of these participants reported problems in transitioning into work, by and large, they reported that obtaining work gave them confidence and a sense of achievement. Employment appeared to be in a range of settings, but was predominantly in low-paid jobs in the construction and the service sectors.

Longitudinal cohort studies

A number of longitudinal cohort studies involved the investigation of the transition between school, unemployment and/or employment [37-42]. Across all of the studies focusing on unemployment, a common theme was the particularly detrimental effect of unemployment on wellbeing and overall mental health of young people who had just left school. Length of unemployment, attitudes towards unemployment, and job seeking behaviours are likely to be key determinants of a young person's mental health while they are without a job [43]. This point emphasises the importance of providing support and mental health treatment for young people who have lost a job. Not only will this contribute to overall wellbeing, but also the likelihood that young people will be able to obtain employment in the future. At the same time, the employment itself has been found to be a critical determinant of wellbeing. A series of Australian studies by Winefield et al. [37-39] indicated that satisfied employed young people and students had higher self-esteem, less depressive affect, and less negative mood than the dissatisfied employed and unemployed. This supports earlier research conducted by Milner et al. [12] which focused on the quality of employment on young people's mental health.

There were also a number of studies that specifically examined the transition into employment [44-50]. A Norwegian study by Grassi et al. [49] assessed the relationship between occupational aspirations and mental health using longitudinal survey and register data for 1644 young people. These researchers reported a decrease in symptoms of depression as aspiration achievement increased. The findings of this report also indicated the importance of young people obtaining a job that was in accordance with their employment expectations. This suggests the need for realistic career planning and preparation while a young person is still in the education system. Ling et al. [51] examined some of the contextual factors that helped young people obtain employment. This paper found that young people with higher levels of education were more likely to hold more stable employment and be employed longer than those with lower education. Another study by Nurmi et al. [52] also indicated that young adults who were in a job that was commensurate with their education were less depressed. We speculate that this might signal the ability of high-quality education systems to prepare young people for employment.

Määttä et al. [48] conducted a longitudinal study in Finland of young adults transferring from school to work. Results of this study indicated that individual coping strategies characterised by passivity were associated with increased problems in obtaining employment. Individuals who displayed adaptive achievement strategies (including realistic expectations of success and adaptive coping) had greater likelihood of employment. This study also indicated that employment outcomes after education had further ramifications for subsequent attributional strategies and later depressive symptomatology. Overall, these results suggested that avoidant coping, typified by passivity, failure expectations, and internal attributions of failure, increased individuals' problems in successfully dealing with the transition into employment.

Mortimer et al. [53] examined the role of part-time work and experiences at work on adolescent resilience and psychological well-being. The results of this study suggested that work stressors experienced during adolescence resulted in a decrease in self-esteem, lower self-efficacy, and higher levels of depressed mood during high school. However, these adolescent experiences also provided a type of "stress inoculation" for the relationship between work stressors and mental health in adulthood. For example, adults who experienced fewer work stressors in adolescence reported greater declines in mental health in relation to job stressors in adulthood.

Overall summary of results

Obtaining employment was found to be a positive experience in the majority of studies, leading to improved mental health and wellbeing. Results suggest the importance of having a supportive educational system around young people as they begin to develop goals and strategies about moving into the workforce. The educational setting can be a place where young people develop realistic ideas about their suitability in different jobs. There is some evidence that experience in the workforce, prior to leaving school is associated with positive outcomes for young workers. The studies we reviewed above also highlight the need for the adequate treatment and support for young people with mental health problems who are thinking about (or participating) in paid employment.

Table 2. Details of studies retrieved for question two

Study	Country	Study design	Population/setting	Participants	Objectives	Exposure variable	Outcome measure	Main findings
Bassett (2001) [35]	Australia	Cross-sectional qualitative	Clinical population	Registered clients of an Australian mental health service (n=10)	To identify the issues experienced by young people diagnosed with psychosis wanting to gain employment	Transition into work (Young Occupations Unlimited (YOU) programme)	Self-reported problems in obtaining employment	Themes from qualitative analysis: • Loss of goals, youth, relationships, abilities and job prospects; • Fear of stigma • Concern about the impact of their illness on their ability to gain and maintain employment
Berth et al. (2003) [54]	Eastern Germany	Longitudinal cohort (baseline=1987, follow up 2002)	General population	420 males and females, mean age 29 years	To assess the effect of unemployment and job insecurity on mental health	Length of unemployment, spells of unemployment.	Self-reported global distress, anxiety and depression symptoms	• Greater amount of time unemployment associated with higher global distress, more anxiety and depression, • Nearly one-third of the participants have an insecure job. • Persons who perceive an insecure job feel significantly greater anxiety, depression, body complaints, mental distress.
Donovan et al. (1987) [40]	United Kingdom	Longitudinal cohort (baseline=1982, follow up 1983)	General population	832 girls and boys, five high schools, in two town in Sussex	To assess change in psychological well-being, self-esteem and social adjustment over time in a population of 16-year-olds of both sexes in relation to employment	The effect of transition into employment, unemployment or a government training scheme (Youth Opportunity Programme-YOP)	Psychological well-being (GHQ), self-esteem and social adjustment	• In the unemployed group, there was a (non-significant) rise in the GHQ score between times 1 and 2 • For the YOPS group, the change is intermediate, but closer to the employed than to the unemployed
Fergusson et al. (2001, 2014) [41, 55]	New Zealand	Longitudinal cohort over 21 years beginning in 1977	General population, Christchurch Health and Development Study (CHDS)	1265 people aged from 16 to 21 years.	To assess relationship between unemployment following school leaving and psychosocial adjustment problems	Duration of unemployment within a year	Psychosocial adjustment problems, suicidal behaviours, major depression, Substance abuse/dependence, Criminal offending, Pregnancy.	• A longer exposure to unemployment was associated with increasing risks of all outcomes

Gjerustad et al. (2012) [56]	Norway	Longitudinal cohort over a 13-year period (+1992 (T1) and followed by three more: 1994 (T2), 1999 (T3), and 2005 (T4).	General population	Population-based sample of 1644 Norwegian adolescents	The assess the effect of aspirational achievement on the association between socioeconomic status and mental health	Self report depressive and anxiety symptoms	Aspirational achievement T2-T4	• Occupational aspirations found to be beneficial for mental health.
Grassi et al. (1996) [49]	Northern Italy	Cohort interviewed in 1987 and 1993.	General population	157 young men	To compare the prevalence of psychological discomfort in four groups of young people of different social status (metalworkers exposed and not exposed to mental health occupational risks, individuals unemployed or seeking their first job and full-time students).	Psychological discomfort	labour turn-over and/or shifts in social status	• During followup, metalworkers who changed jobs had les psychological discomfort than other groups. • Job seekers had higher psychological discomfort.
Lee et al. (2007) [36]	Australia	Cross-sectional qualitative	General population	Twelve young people aged 16–19 years	The current study explored the perceptions and experiences of the school context held by young people who have left school early	Experiences since leaving school	General self-reported wellbeing	• The decision to leave school early had an overall positive impact on wellbeing. • Some participants found it difficult making the transition into the workforce.
Ling et al. (2013) [51]	United States of America	Longitudinal cohort over 1997 to 2005	General population (National Longitudinal Survey of Youth, 1997 Cohort (NLSY97))	1,657 participants who were employed in 2005.	To explore the predictors of stability of employment and job quality	Center for Epidemiologic Studies Depression Scale (CES-D;); substance use; educational attaintment, and; parental help.	Job attainment; Stability of employments; Job quality	• Hours worked, parental education level, and income were related to job quality • Adolescent educational attainment and employment in adolescence were related to employment stability.
Määttä et al. (2002) [48]	Helsinki, Finland	Longitudinal cohort (1995–1996 three measurement points)	General population	The participants were 250 (129 men, 121 women) young adults (for age, mean 24.27, Standard Deviation 4.07) who were facing the transition from school to work.	To assess the impact of individuals' attributional style and the transition from school to work on depressive symptomatology.	Exposure: Cartoon-Attribution-Strategy Inventory,	Depressive symptomology (Beck's Depression Inventory); Work Status Questionnaire (WSQ)	• Maladaptive achievement strategies, such as passivity, increased the likelihood of failure in dealing with transition • Adaptive achievement strategies, such as expectations of success and active coping, helped the

								individual to deal with transition.
Montgomery et al. (1999) [57]	Sweden	Longitidinal cohort (from birth to age 33 years)	General population	3241 people from the National Child Development Study (1958 British birth cohort)	To asses the effect of recent and accumulated unemployment in young men on the risk of developing depression and anxiety.	Pre-existing tendency to depression (Malaise Inventory); recent unemployment and accumulated	Anxiety and depression between aged 24 to 33 years that result in consultation with a GP or specialist.	• Unemployment is a risk factors for psychological symptoms requiring medical attention, even in those men without previous psychological vulnerability.
Mortimer et al. (2004) [53]	United States of America	Longitudinal cohort (1988 to 1991)	General population	1,000 adolescents, chosen randomly from students registered in the St. Paul, Minnesota, public school district,	To examine the association between job stressors experienced in adolencents and early adulthood on mental health	Time pressure, exposure to noxious work conditions, work overload, the lack of clarity in job responsibilities, and responsibility for things that are perceived as outside one's control	Depressive affect, self-esteem, and self-efficacy during and after high school	• Youth who worked longer hours during high school exhibited less depressed mood and greater selfefficacy • Early work stressors found to have negative effects 4 years after high school.
Nurmi et al. (2002) [52]	Finland	Longitudinal cohort (at school; 8 months after their graduation; and 1.5 years after)	General population	250 young adults who were facing a transition from school to work	To study the effect of transition from school to work on later employment	Goals during the transition; mental wellbeing (lack of depressive Symptoms) (a) the Personal Project Analysis (PPA) and (b) the revised Beck's Depression Inventory (BDI).	Work situation after finishing education (whether he or she ended up as employed, unemployed, or doing something else), measured with the work status questionnaire (WSQ)	• People continuously reformulate their personal by constructing goals that focus on the key challenges and demands of a particular developmental trajectory; and by trying to compensate for the problems encountered in earlier transitions by Goal Construction and Reconstruction
Standh et al. (2014) [15]	Sweden	Longitudinal cohort (27 year)	General population	Graduates from compulsary school, Northern Swedish Cohort	To asses assess the relationship between youth unemployment and mental health at age 16, 21, 30 and 42 years	Unemployment	Self-reported mental health (nervous, depressibe, sleeoing symptoms)	• Youth unemployment was shown to be significantly connected with poorer mental health at ages, 21, 30 and 42 years
Taris (2002) [43]	The Netherlands	Longitudinal cohort (3 follow up points, 2 years apart)	General Population	1,775 Dutch adults aged 18 to 26 years	To explore the effect of mental health on unemployment	Unemployment, job-searching behaviors	General Health Questionnaire, Depression Adjective Checklist	• Perception of unemployment was found to be positively related to mental health; this variable, in turn, was associated with the intention to look for a job and powerlessness.

Tiggemann et al. (1984) [42]	England	Longitudinal cohort (3 follow ups).	General population	761 young people surveyed at school twice, then once after school.	To investigate the psychological effects of unemployment in school-leavers on both mood self-ratings and on more stable personality characteristics	Employment status	Rosenberg's (1965) Depressive Affect Scale, Rosenberg's (1965) Self-Esteem Scale	Unemployment associated with poorer mental health.
van der Velde et al. (1995) [44]	The Netherlands	Longitudinal cohort (2 follow ups).	General population	Young adults who attended school in 1987 and in 1991 (N = 146); and (2) young adults who made the transition from school in 1987 to work in 1991 (N = 168)	To assess the transition from education to work on mental health.	Exposure: Compatibility of Roles, relative importance of work, work centrality, work ethos norm, norm towards spare time, work values (Intrinsic/extrinsic/ Social Work Values)	Depression Adjective Checklists; Goldberg's (1972) General Health Questionnaire; Self-esteem scale ; Quality of Life; Satisfaction With Life Scale.	• Young adults showed positive change over time; for example, they experience a better quality of life and become more intrinsically motivated in time. • The transition from school to work induces extra positive changes; people • This is probably due to the fact that these young adults become economically and psychologically independent by working.
Whooley et al. (2002) [58]	United States	Longitudinal cohort (baseline 1985-1986; follow up 1990-1991 and 1995-1996)	General population	5115 adults aged 18 to 30 years	To determine whether depressive symtoms are associated with subsequent unemployment or loss of income	Employment status	Depressive symptoms (CES-D)	• Depressive symptoms were associated with a 60% increased odds of subsequent unemployment and a 90% increased odds of decreased family income during 5 years of follow ups.
Winefield et al. (1991; 1990; 1989) [37-39]	Australia	Longitudinal cohort (1980 to 1987)	General population	3130 school students surveyed at 1980.	To compare four occupational groups—satisfied employed, dissatisfied employed, unemployed, and tertiary students—on a range of psychological measures.	General Health Questionnaire, Nowicki-Strickland Locus of Control Scale.	Four occupational groups—satisfied employed, dissatisfied employed, unemployed, and tertiary students	• The satisfied employed and students showed higher self-esteem, less depressive affect, less externality, and less negative mood than the dissatisfied employed and unemployed

Question three: What is the effect of electronic and/or face to face social support on the mental health of young job seekers and young workers?

Table 3 shows the 4 studies identified for research question three. Of these, two used a non-randomised control trial design and were conducted in Australia. In addition, two studies used a randomised control trial (RCT) design, of which one was conducted in Australia and the other in the USA.

Non-randomised control trials

Spiranovic [59] used a non-RCT design to evaluate the efficacy of the yshareit program in 135 high school or college students (between 15 and 25 years old) and young people from the general community (between 18 and 25 years old) in Australia. The program aimed to improve awareness of and access to reputable e-mental health resources among young people, and involves a 3-hours session that had participants undergo the following activities: (i) visit mental health promotion websites (ReachOut!, Ybblue, BluePages, MoodGYM, Kids Help Line); (ii) work through case scenarios depicting common mental health issues for young people (e.g., (depression, stress, substance use); and (iii) complete brainstorming activities to identify strategies to improve communication of mental health issues. Participants were assessed using an e-mental health questionnaire after 6 months of the session. The study found that the yshareit program increased awareness and use of triaged and non-triaged sites. In addition, the majority of participants reported that they would recommend, and had recommended, the reputable websites to someone with a mental health issue.

In another non-RCT design study, Broadbent [60] examined the efficacy of the Incolink Life Care Skills program in 119 first-year apprentices of the construction industry (between 18 to 22 years old, median age=20 years old) in rural and metropolitan Victoria, Australia. The aims of the program were the following: (i) reduce risk factors associated with suicide and depression; (ii) increase awareness and knowledge about suicide risk factors; (iii) increase protective factors (e.g., self-efficacy, life-skills in managing difficult situations, supporting others who experience difficulty); and (iv) promote help-seeking by providing links to support services and supported referrals. The Incolink Life Care Skills program is based on narrative learning theory with a focus on promoting communication and reinforcement of preventative health messages. It involves 90-minute workshops on life care skills between 6 months and 2 years. The program was found to be successful in raising awareness of suicide

risk factors, with a majority of participants reporting the workshops as being helpful in the following: (i) developing relevant skills and knowledge; (ii) increasing awareness of risk factors of suicide; (iii) assisting young workers to think about lifestyle behaviour, work-life balance, and personal health; and (iv) encouraging young workers to seek advice.

Randomised control trial

Mowbray [61] evaluated the Michigan Supported Education Research Project using a RCT design in 397 individuals aged between 17 and 75 years old from the USA general population. The project aimed to create a supportive learning environment for students' exploration and decision making on career options, involving a 2-hour orientation followed by 2.5-hour meetings twice a week for 28 weeks. The components of this project include the following: (i) career planning and vocational assessments; (ii) information on college or training program enrolment; (iii) assistance in obtaining financial aid, stress management, time management, rights and resources information; and (iv) facilitate contacts with campus special treatment services offices/vocational rehabilitations. This project was found to improve the quality of life and self-esteem in participants.

In a recent RCT, Pidd [62] evaluated the effect of a program to reduce risky alcohol/drug use and improve the psychological wellbeing in 72 young chefs in Australia. The trial involves two training modules delivered in a 2-hour session and a 1-hour session over a 2-week period: (i) enhancing coping and communication skills, and (ii) understanding and reducing risk of alcohol and other drug-related harm. The findings of this study indicate that those who participated in the program were more likely to experience a reduction of psychological distress and have an improved ability to talk with supervisor about work issues and to deal with stress and cope with verbal abuse, compared with those who were not involved in the program.

Overall summary of results

Electronic and/or face to face social support was found to have a positive effect on the mental health of young job seekers and young workers. In particular, the programs were found to be successful in raising awareness of suicide risk factors, raising awareness of reputable e-mental health resources, improving quality of life and self-esteem, reducing psychological distress, increasing help-seeking behaviour, and improving the ability to deal with stress and cope with verbal abuse. In addition, the results suggest a positive uptake of the programs, with participants recommending programs to others with a mental health issue.

Table 3. Details of studies retrieved for question three

Study	Country	Study design	Participants	Program aim	Program components/approach	Outcome measure	Main findings
Broadbent (2013) [60]	Australia	Non-RCT (pre and post intervention)	• N=119 (median age=20, 18-22 years old) • first-year apprentices in the building, construction and metal fabrication industry; apprentices at Technical and Further Education (TAFE) colleges, Group Training Organisations (GTOs) and on building sites	• reduce risk factors associated with suicide and depression (e.g., substance use, relationship breakdown and financial stress) • build resilience and protective factors • increase awareness and knowledge about suicide risk factors • increase protective factors, such as self-efficacy, life skills in handling difficult situations and supporting others experiencing difficulty • promote help-seeking among young men, by providing links to support services and supported referrals	90-minute workshop to identify at-risk individuals and connect them to support services available through Incolink and/or in their own local community	Feedback on the effectiveness of the program messages	• program successful in raising awareness of suicide risk factors • program enabled participants to obtain help if needed and support friends who might be facing problems • Majority of participants found the workshops helpful in: developing the range of skills and knowledge areas covered (73.4%); increasing awareness of risk factors associated with suicide (74.8%); helping them think about lifestyle behaviour and how it can impact on health and wellbeing (71.7%); thinking about the risks in relation to lifestyle/behaviour (73.5%); encouraging young workers to seek advice if something in their life was going wrong (78.1%); understanding how to help others facing problems (78.2%); thinking about work–life balance (74.7%); thinking about their personal health (73.7%).
Spiranovic 2008 [59]	Australia	Non-RCT (Pre and post intervention, 6-month follow up)	• N=135 • high school / college students (15-25 years old) and young people from the general community (18-25 years old)	To increase awareness of and access to reputable e-mental health resources among young people	1. Participants visited links from the yshareit.com website (ReachOut!, Ybblue, BluePages, MoodGYM, Kids Help Line). 2. Participants worked through case scenarios depicting common mental health issues for young people (depression, stress, substance use), using the resources available from the triaged sites to develop their responses	e-mental health questionnaire	• Increased awareness and use of triaged and non-triaged sites • Increased proportion of participants to recommend websites to someone with a mental health issue.

					3. Participants engaged in a brainstorming activity to identify strategies to improve communication skills with regards to discussing mental health issues and strategies for the broader sharing of the information obtained in the workshop with their friends, peers, family and the wider community.		
Mowbray 1999 [61]	USA	RCT (measures taken at baseline, midway through, six and 12 months after program completion)	• N=397 (mean age=36.9, 17-75 years old) • general population (primarily those receiving services from the public mental health system)	To help participants establish an education-vocation plan, gain access to supports and resources for the plan, determine career goals, and cope with specific problems presented by mental illness in the academic or vocational environment	• career planning and vocational assessments • information on college or training program enrolment • assistance in obtaining financial aid, stress management, time management, rights and resources information • facilitate contacts with campus special treatment services offices/vocational rehabilitations	• self-efficacy • self-esteem empowerment • quality of life	• Improved quality of life and self-esteem

Pidd 2015 [62]	Australia	RCT (4-month followup)	• N=71 (time 1; 53% male; 72% ≤24 years old) and N=50 (time 2; 36% male; 50% ≤24 years old) • Young chefs	To reduce risky alcohol and other drug use and improve the psychological wellbeing of young workers employed in commercial cookery	1. enhancing coping and communication skills, 2. understanding and reducing risk of alcohol and other drug-related harm	• alcohol and other drug use • alcohol and other drug attitude • social support (MOSS Social Support Scale) • psychological distress (Kessler Psychological Distress Scale) • life satisfaction (Satisfaction With Life Scale)	• Reduced psychological distress • Improved ability to talk with supervisors about work issues and ability to deal with stress and cope with verbal abuse.

Question four: Given what we currently know about young workers' mental health, and the predicted changes to the world of work, what can be done to support young workers and improve their resilience?

Drawing on the findings above from questions one to three, we would suggest that the following are likely to help in supporting younger workers as they move into the labour market:

- ***Provide high quality education***

There is good recognition that education is a gateway to employment [63]. For example, evidence shows that those who have low levels of education are less likely to obtain employment, as evident in high rates of unemployment and being "not in education or employment" (NEET) in young people [64].

A wide range of educational opportunities are likely to be beneficial to young people. This not only includes secondary school and university, but also vocational education such as TAFEs, training colleges, and apprenticeships [65]. Aside from the obtaining skills and knowledge that are likely to make young people more employable, increasing education provides the opportunity for social support and increasing networks that may be helpful for future employment. Engagement in education (in terms of vocational employment and training as well as university) can also will provide a sense of mastery and wellbeing, which can also be helpful for mental health [66]. Thus, allowing young people access to a wide range of educational opportunities, tailored to their needs and abilities is also likely to be beneficial to mental health.

- ***Ensure that young people have access to career guidance, development and work experience while still in school.***

Several studies in the review indicated the importance of having key people and programs in place that can provide young people with support as they begin the process of transition into work. This process may occur over a number of months, or even years, depending on the context and young person in question. Career guidance (either face to face or online) will help young people tailor their education and current skill set to the world of work. At the same time, these tailored activities can be helpful to mental health by providing a sense of social support.

In addition, programs can provide young people with experience in the workplace throughout their education. Ideally, these experiences should occur a number of times, rather than at a single point. These experiences will not only provide exposure to work, but also to the expectations of co-workers and managers more generally.

These recommendations are consistent with the best employment strategies used in high-income countries with low youth unemployment rates, as reported in the Young Worker Index (Price Waterhouse Coopers) [67] and the Youth Working Party for the European Union [68]. Both these best practice documents also suggests one other additional strategy (aside from those mentioned above), which concerns the need to reduce barriers to employment among youth from low socio-economic backgrounds. This suggests the importance of targeted attention towards young people who might be particularly disadvantaged.

- ***Provide training to workplaces and employers about fair and equitable treatment of younger workers.***

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. As we have previously recommended, this involves a combination of reducing psychosocial job stressors and promoting the positive aspects of work [69]. Various resources are available to support employers in these efforts, including VicHealth publications on reducing job stressors [16] as well as preventing mental illness in the workplace [70, 71] and promoting the positive aspects of work [72].

Improving mental health literacy among young workers, particularly as the concept applies in the workplace setting, would also 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. Members of our team have been involved in articulating the concept of *workplace* mental health literacy [69], defined 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. We would note that there is increasing traction for the idea that workplaces have a role to play in addressing mental health. We would suggest that messages about promoting the positive aspects of work, while minimising risk and aiding return to work might be a useful strategy for addressing the mental health.

Question five: What long term economic or social costs are associated with the poor mental wellbeing of young workers?

As summarised in the first section of this report, young people are more likely to experience unemployment and underemployment. When they are in work, young workers are more likely to experience poorer working conditions. The costs of these experiences are likely to be largely bourn by younger Australians in terms of lost productivity and wealth. The PwC Young Workers Index estimates the potential gain from youth empowerment to be over $1 trillion across the OECD [67].

While there is relatively little data on the economic and social costs associated with poor mental health and wellbeing in younger workers, one recent report estimated the financial cost of mental illness in young Australians aged 12-25 to be $10.6 billion (comprising lower employment, absenteeism and premature death, taxation foregone, direct health system expenditure and other indirect costs [73]). The report also estimated the value of the lost wellbeing (disability and premature death) to be a further $20.5 billion.

Additionally, data on the adults working population can provide valuable insights and it is likely that there are additional costs to society when young workers develop mental health problems as a result of their poorer working conditions. A 2010 study found that the lifetime costs of job stressors over one year was estimated at just over $8,000 per person or $12.6 billion in total, with lifetime costs at $138,679 per person or $213.5 billion in total [74]. This report was conducted on the general population, rather than specific to younger workers. We would expect much higher costs associated with mental health problem arising from job stress among younger workers, considering the higher burden of unemployment and poor quality work in younger workers.

More recently, a recent report by PwC [75] estimated that mental health conditions have a substantial impact on Australian workplaces - approximately $11 billion per year, comprising $4.7 billion in absenteeism, $6.1 billion in presenteeism (being less productive while at work) and $146 million in compensation claims. The report also estimated the return on investment of the successful implementation of effective actions to create a mentally healthy workplace, be 2.3. That is, for every dollar spent on successfully implementing an appropriate action, there is on average $2.30 in benefits to be gained by the organisation. It is likely that, given the higher prevalence of mental health problems in
younger workers, the ROI in workplace programs for this population would be even greater. Moreover, implementing multiple targeted actions is likely to lead to further increases in ROI,

although the productivity gains generated from different actions may vary depending on the industry and size of an organisation. However, actions are unlikely to be effective unless there is leadership and management support for improving the culture and mental health of the workplace. Thus, particular emphasis should be placed on engaging leadership and management support for interventions targeted to younger workers.

Discussion

Limitations of the review

The limitations of this review include the possibility that we may have excluded relevant articles due to the restrictions on our search strategy. Further, while we assessed a wide range of work-related stressors in this review, there were a number of other pertinent work-related stressors influencing mental health in young job seekers and young workers that we were not able to address. These include workplace restructuring or exposure to traumatic incidents at work (such as those experienced by medical students and emergency responders). Considering this, our review undoubtedly underestimates the complex influence of work-related stressors on the mental health of young job seekers and young workers. This review was also confined to English-language publications, as we could not extract qualitative information from several non-English language publications. In addition, there was limited research internationally on the effect of electronic and/or face to face social support on the mental health of young job seekers and young workers. We know that this is an area of active policy and practice development so expect to see more published research in this area in coming years.

Overall statement of findings

The rapid changes to work in the Australian context are likely to have a number of flow-on effects on young people going into the job market. This is problematic considering that young people are particularly at risk of experiencing unemployment and underemployment. When they do obtain work, there is a heightened risk of their jobs being more insecure or of poorer psychosocial quality than the jobs of older people.

Our review findings suggest that poor employment situations are a threat to the mental health of younger workers. Job insecurity, low control and high demand were particularly associated with worse outcomes in young people. This review also covered factors occurring in the transition into work, which could be either helpful or damaging. Although the evidence base was small, it appears that preparation for this transition when the person was still in school is critical. This preparation could include engagement in the workforce while still in education, as well as careful consideration of the suitability of skills learnt while in school for future employment. This necessitates the importance of connection between the education system and the direction of employment trends. Ensuring that young workers have fair expectations about work and goal setting is also critical.

In terms of prevention, our review only found four published studies on electronic and/or face to face social support interventions. These were mainly targeted at increasing knowledge and skills in dealing with mental health issues. We would suggest that these social support interventions could feasibly go hand-in-hand with approaches to maximise youth employability discussed above. Social support interventions should draw on a wide range of people and services in a young persons life, including parents and teachers, as well as formal mentoring schemes and career guidance personnel.

In terms of policy recommendations, our review suggests the following are likely to help young people as they transition into the labour force:

- Ensure that young people have access to suitable educational opportunities, whether this be through training and apprenticeships or through secondary schools and universities;
- Provide resources and programs that can help guide and support young people as they begin the process of transition into work;
- Encourage engagement in the labour market, particularly in fields that young people may be interested in working in;
- Ensure that workplaces are aware of the importance of providing work that is free of major psychosocial job stressors, and;
- Encourage mental health literacy among employers, young workers, and their colleagues. At an individual level, this will help young workers to choose good work (or leaving bad work before it becomes harmful), and recognise the influence of working conditions on their mental health and wellbeing.

Overall report references

1. ABS, *Education and Work, Australia. Cat. No. 6227.0.* 2016, Caberra, available from http://www.abs.gov.au/ausstats/abs@.nsf/mf/6227.0: ABS,.
2. ABS, *Australian Social Trends. Cat. No. 4102.0*. 2011, (http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features30Dec+2011#changeinjobs): Australian Bureau of Statistics.
3. The Foundation for Young Australians, *The New Work Smarts: Thriving in the New Work Order* 2017, Sydney, available at https://www.fya.org.au/wp-content/uploads/2017/07/FYA_TheNewWorkSmarts_July2017.pdf: The Foundation for Young Australians,.
4. Jahoda, M., *Employment and Unemployment: A Social-psychological Analysis*. 1982, London: Cambridge University Press.
5. LaMontagne, A.D., et al., *Job strain - attributable depression in a sample of working Australians: assessing the contribution to health inequalities.* BMC Public Health, 2008. **8**: p. 181.
6. Milner, A., et al., *Low Control and High Demands at Work as Risk Factors for Suicide: An Australian National Population-Level Case-Control Study.* Psychosomatic Medicine, 2016. **[Epub ahead of print]**.
7. Leach, L.S., C. Poyser, and P. Butterworth, *Workplace bullying and the association with suicidal ideation/thoughts and behaviour: a systematic review.* Occupational and Environmental Medicine, 2017. **74**(1): p. 72-79.
8. ABS, *Labour Force, Australia. Cat. No. 6202.0*. 2017, Caberra, available at http://www.abs.gov.au/ausstats/abs@.nsf/0/46DFE12FCDB783D9CA256B740082AA6C?OpenDocument: Australian Bureau of Statistics.
9. economics, T., *Australia Youth Unemployment Rate*. 2017, Sydney, available from https://tradingeconomics.com/australia/youth-unemployment-rate.
10. ABS, *Labour Force, Australia. Cat. No. 6202.0*. 2016, Canberra, available at http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6202.0main+features5Nov%202016: Australian Bureau of Statistics.
11. Laurence, B.o.S., *Generation stalled: Young, underemployed and living precariously in Australia*. 2017, Melbourne, available from http://library.bsl.org.au/jspui/bitstream/1/9409/1/BSL_Generation_stalled_young_underemployed_2017.pdf: Brotherhood of St Laurence.
12. Milner, A., et al., *Entry into work and changes in mental health among young workers: a fixed effects regression analysis using 12 waves of annual data. .* Scand J of Work and Environment, 2016. **doi: 10.5271/sjweh.3608**.
13. LaMontagne, A.D., et al., *Unwanted sexual advances at work: variations by employment arrangement in a sample of working Australians.* Australian and New Zealand Journal of Public Health, 2009. **33**(2): p. 173-179.
14. Liberati, A., et al., *The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration.* PLOS Medicine, 2009. **6**(7): p. 1-28.

15. Strandh, M., et al., *Unemployment and mental health scarring during the life course.* European Journal of Public Health, 2014. **24**(3): p. 440-445.

16. LaMontagne AD and Keegel T, *Reducing Stress in the Workplace: An Evidence Review, Full Report*. 2012, Victorian Heath Promotion Foundation (VicHealth): Melbourne. p. 52 pages.

17. Buddeberg-Fischer, B., et al., *Work stress and reduced health in young physicians: Prospective evidence from Swiss residents.* International Archives of Occupational and Environmental Health, 2008. **82**: p. 31-38.

18. Clark, C., et al., *The contribution of work and non-work stressors to common mental disorders in the 2007 Adult Psychiatric Morbidity Survey.* Psychological Medicine, 2012. **42**: p. 829–842.

19. Martins, L.C.X.L., C. S., *Military hierarchy, job stress and mental health in peacetime.* Occupational Medicine, 2012. **62**(3): p. 182-187.

20. Winefeld, A.H., M. Tiggemann, and R.D. Goldney, *Psychological concomitants of satisfactory employment and unemployment in young people.* Social psychiatry and Psychiatric Epidemiology, 1988. **23**.

21. Fujino, Y.M., T.; Izumi, H.; Kumashiro, M.; Hasegawa, T.; Yoshimura, T., *Job stress and mental health among permanent night workers.* Journal of Occupational Health, 2001. **43**(6): p. 301-306.

22. Milner, A., et al., *Psychosocial job stressors and thoughts about suicide among males: a cross-sectional study from the first wave of the Ten to Men cohort.* Public Health, 2017. **147**: p. 72-76.

23. Wiesner, M., M. Windle, and A. Freeman, *Work stress, substance use, and depression among young adult workers: An examination of main and moderator effect models.* Journal of Occupational Health Psychology, 2005. **10**(2): p. 83–96.

24. Yoon, S.L. and J.-H. Kim, *Job-related stress, emotional labor, and depressive symptoms among Korean nurses.* Journal of Nursing Scholarship, 2013. **45**(2): p. 169-176.

25. Rospenda, K.M., J.A. Richman, and C.A. Shannon, *Prevalence and mental health correlates of harassment and discrimination in the workplace.* Journal of Interpersonal Violence, 2009. **24**(5): p. 819-843.

26. Milner, A., et al., *Psychosocial Working Conditions and Suicide Ideation: Evidence From a Cross-Sectional Survey of Working Australians.* Journal of Occupational and Environmental Medicine 2016. **58**(6): p. 584-587.

27. Baldwin, P.J., M. Dodd, and J.S. Rennie, *Dentists—Work, wealth, health and happiness.* British Dental Journal, 1999. **186**(1): p. 30-36.

28. Baldwin, P.J., M. Dodd, and R.W. Wrate, *Young doctors' health-I. How do working conditions affect attitudes, health and performance.* Social Science & Medicine, 1997. **45**(1): p. 35-40.

29. Melchior, M., et al., *Work stress precipitates depression and anxiety in young, working women and men.* Psychological Medicine, 2007. **37**: p. 1119–1129.

30. Milner, A., L. Krnjacki, and A.D. LaMontagne, *Psychosocial job quality and mental health among young workers: A fixed-effects regression analysis using 13 waves of annual data.* Scandinavian Journal of Work, Environment & Health, 2017. **43**(1): p. 50–58.

31. Grebner, S.S., N. K.; Elfering, A., *Working conditions and three types of well-being: a longitudinal study with self-report and rating data.* J Occup Health Psychol, 2005. **10**(1): p. 31-43.

32. Quesnel-Vallée, A., S. DeHaney, and A. Ciampi, *Temporary work and depressive symptoms: A propensity score analysis.* Social Science & Medicine, 2010. **70**(12): p. 1982-1987.

33. Helbling, L. and S. Kanji, *Job Insecurity: Differential effects of subjective and objective measures on life satisfaction trajectories of workers aged 27–30 in Germany.* Social Indicators Research, 2017: p. 1–18.

34. Reine, I. and M.N.A. Hammarstrom, *Does the association between ill health and unemployment differ between young people and adults? Results from a 14-year follow-up study with a focus on psychological health and smoking.* Public Health, 2004. **118**: p. 337–345.

35. Bassett, J., C. Lloyd, and H. Bassett, *Work Issues for Young People with Psychosis: Barriers to Employment.* British Journal of Occupational Therapy, 2001. **64**(2): p. 66-72.

36. Lee, T. and L. Breen, *Young people's perceptions and experiences of leaving high school early: an exploration.* Journal of Community & Applied Social Psychology, 2007. **17**(5): p. 329-346.

37. Winefield, A. and M. Tiggemann, *Employment Status and Psychological Well-Being: A Longitudinal Study.* Journal of Applied Psychology, 1990. **75**(4): p. 455-459.

38. Winefield, A., et al., *A Longitudinal Study of the Psychological Effects of Unemployment and Unsatisfactory Employment on ^Vbung Adults.* Journal of Applied Psychology, 1991. **76**(3): p. 424-431.

39. Winefield, A.H. and M. Tiggemann, *Unemployment Duration and Affective Well-Being in the Young.* Journal of Occupational Psychology, 1989. **62**(4): p. 327.

40. Donovan, A., et al., *Employment status and psychological well-being: a longitudinal study of 16-year-old school leavers.* J Child Psychol Psychiatry, 1986. **27**(1): p. 65-76.

41. Fergusson, D.M., L.J. Horwood, and L.J. Woodward, *Unemployment and psychosocial adjustment in young adults: causation or selection?* Soc Sci Med, 2001. **53**(3): p. 305-20.

42. Tiggemann, M. and A.H. Winefield, *The Effects of Unemployment on the Mood, Self-Esteem, Locus of Control, and Depressive Affect of School-Leavers.* Journal of Occupational Psychology, 1984. **57**(1): p. 33.

43. Taris, T.W., *Unemployment and Mental Health: A Longitudinal Perspective.* International Journal of Stress Management, 2002. **9**(1): p. 43-57.

44. van der Velde, M.E.G., J.A. Feij, and T.W. Taris, *Stability and change of person characteristics among young adults: The effect of the transition from school to work.* Personality and Individual Differences, 1995. **18**(1): p. 89-99.

45. Nurmi, J.E. and K. Salmela-Aro. *Goal construction, reconstruction and depressive symptoms in a life-span context: the transition from school to work*. 2002 [cited 70 (Nurmi, Salmela-Aro) Department of Psychology, University of Jyvaskyla, Finland.]; 3:[385-420]. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed8&NEWS=N&AN=35495993.

46. Mortimer, J.T. and J. Staff. *Early work as a source of developmental discontinuity during the transition to adulthood*. Special Issue: Transition from Adolescence to Adulthood. [Psychosocial & Personality Development 2840] 2004 [cited 16 Alwin, D. E. (1994). Aging, personality, and social change: The stability of individual differences over the life span. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.) Life span development and behavior (pp. 135-185). Hillsdale, NJ: Erlbaum.]; 4:[1047-1070]. Available from:

http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc4&NEWS=N&AN=2005-00360-013.

47. Ling, T.J. and K.M. O'Brien. *Connecting the forgotten half: The school-to-work transition of noncollege-bound youth*. [Occupational Interests & Guidance 3610] 2013 [cited 40 Ainsworth, J. W., & Roscigno, V. J. (2005). Stratification, school-work linkages and vocational education. Social Forces, 84, 257-284. http://dx.doi.org/10.1353/sof.2005.0087]; 4:[347-367]. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc10&NEWS=N&AN=2013-23384-005.

48. Määttä, S., J.-E. Nurmi, and E.-M. Majava, *Young adults' achievement and attributional strategies in the transition from school to work: antecedents and consequences.* European Journal of Personality, 2002. **16**(4): p. 295-311.

49. Grassi, A. and M.C. Falzoni, *Employment/unemployment and psychological discomfort. A survey among young people living in an Italian industrial area.* Epidemiologia e Psichiatria Sociale, 2011. **5**(2): p. 136-146.

50. Gjerustad, C. and T. von Soest. *Socio-economic status and mental health-The importance of achieving occupational aspirations*. [Psychosocial & Personality Development 2840] 2012 [cited 15 Adkins, D. E., et al. 2009. Structure and stress: trajectories of depressive symptoms across adolescence and young adulthood. Social forces, 88, 31-60.]; 7:[890-908]. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc9&NEWS=N&AN=2012-26667-005.

51. Ling, T.J. and K.M. O'Brien, *Connecting the Forgotten Half.* Journal of Career Development, 2013. **40**(4): p. 347-367.

52. Nurmi, J.-E. and K. Salmela-Aro, *Goal Construction, Reconstruction and Depressive Symptoms in a Life-Span Context: The Transition From School to Work.* Journal of Personality, 2002. **70**(3): p. 385-420.

53. Mortimer, J.T. and J. Staff, *Early work as a source of developmental discontinuity during the transition to adulthood.* Dev Psychopathol, 2004. **16**(4): p. 1047-70.

54. Berth, H., P. Forster, and E. Brahler, *[Unemployment, job insecurity and their consequences for health in a sample of young adults].* Gesundheitswesen, 2003. **65**(10): p. 555-60.

55. Fergusson, D.M., G.F. McLeod, and L.J. Horwood, *Unemployment and psychosocial outcomes to age 30: A fixed-effects regression analysis.* Aust N Z J Psychiatry, 2014. **48**(8): p. 735-42.

56. Gjerustad, C. and T. von Soest, *Socio-economic status and mental health – the importance of achieving occupational aspirations.* Journal of Youth Studies, 2012. **15**(7): p. 890-908.

57. Montgomery, S.M., et al., *Unemployment pre-dates symptoms of depression and anxiety resulting in medical consultation in young men.* International Journal of Epidemiology, 1999. **28**(1): p. 95-100.

58. Whooley, M.A., et al., *Depressive symptoms, unemployment, and loss of income: The CARDIA Study.* Arch Intern Med, 2002. **162**(22): p. 2614-20.

59. Spiranovic, C., et al., *Using generalist youth work practice in suicide prevention: A program for young construction workers.* Youth Studies Australia, 2008. **27**(2): p. 52-60.

60. Broadbent, R., et al., *Using generalist youth work practice in suicide prevention: A program for young construction workers.* Youth Studies Australia, 2013. **31**(1): p. 46-54.

61. Mowbray, C.R., M. Collins, and D. Bybee, *Supported education for individuals with psychiatric disabilities: Long-term outcomesfrom an experimental study.* Social Work Research, 1999. **23**(2): p. 89-100.

62. Pidd, K., A. Roche, and J. Fisher, *A recipe for good mental health: A pilot randomised controlled trial of a psychological wellbeing and substance use intervention targeting young chefs.* Drugs: Education, Prevention and Policy, 2015. **22**(4): p. 352-361.

63. OECD, *Supporting Youth Pathways*, in *Education Policy Analysis 2003*. 2003, OECD Publishing.

64. OECD, *Investing in Youth: Australia*. 2016: Paris.

65. Bamber, J., *Developing the creative and innovative potential of young people through non-formal learning in ways that are relevant to employability* 2014, European Commission: Belgium.

66. Dalgard, O.S., et al., *Education, sense of mastery and mental health: results from a nation wide health monitoring study in Norway.* BMC Psychiatry, 2007. **7**: p. 20.

67. Coopers, P.W., *PwC Young Workers Index* 2016, UK, accessed from http://www.pwc.com.au/publications/assets/people-young-workers-index-oct16.pdf: PwC.

68. Bamber, J. and C.o.t.E. Youth Working Party, *Developing the creative and innovative potential of young people through non-formal learning in ways that are relevant to employability*. 2012, accessed from http://ec.europa.eu/assets/eac/youth/news/2014/documents/report-creative-potential_en.pdf: European Commission Youth.

69. LaMontagne, A.D., et al., *Workplace mental health: developing an integrated intervention approach.* Bmc Psychiatry, 2014. **14**.

70. Reavley N, et al., *Development of guidelines for workplace prevention of mental health problems: A Delphi consensus study with Australian professionals and employees.* Mental Health and Prevention, 2014. **2**(1-2): p. 26-34.

71. LaMontagne, A.D. and N. Reavley, *Workplace prevention of mental health problems: Guidelines for organisations*. 2013, Melbourne: Institute for Safety, Compensation and Recovery Research.

72. Superfriend, *Promoting positive mental health in the workplace: Guidelines for organisations*, Superfriend. p. 1-31.

73. Access Economics, *The economic impact of youth mental illness and the cost effectiveness of early intervention*. 2009.

74. LaMontagne, A.D., K. Sanderson, and F. Cocker, *Estimating the economic benefits of eliminating job strain as a risk factor for depression*. 2010, Carlton: Victorian Heath Promotion Foundation.

75. PwC Australia, *Creating a mentally healthy workplace: Return on investment analysis*. 2014.

Victorian Health Promotion Foundation
PO Box 154 Carlton South
Victoria 3053 Australia
T +61 3 9667 1333 F +61 3 9667 1375

vichealth@vichealth.vic.gov.au
vichealth.vic.gov.au
twitter.com/vichealth
facebook.com/vichealth

VicHealth acknowledges the support
of the Victorian Government.

© VicHealth 2019
October 2019 P-MW-807