LIVING WITH UNEMPLOYMENT AND UNDEREMPLOYMENT: POOR, ISOLATED AND STRUGGLING TO CHANGE

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Declaration

This thesis is submitted to The Australian National University in fulfilment of the Doctor of Psychology - Clinical (DPsych) degree. The work presented in this thesis is, to the best of my knowledge, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for another degree at this or any other institution. This thesis includes two papers that are in press with peer reviewed journals. The third paper is under preparation for submission. The ideas, development and writing up of both the papers in the thesis were the principal responsibility of me, the candidate. The inclusion of a co-author reflects the input of my supervisor, Associate Professor Peter Butterworth and my advisor Liana Leach who provided advice on the design and assisted with proof reading and editing. In the case of chapters 5, 6 and 7 my contribution to the work involved the following:

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Laura Crowe     Peter Butterworth    Date
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Abstract

The experience of unemployment or underemployment can cause substantial psychological and social impairment in the lives of those who are unable to find good quality work. People who suffer from mental health problems are over-represented amongst the unemployed when compared to those who are gainfully employed. The overarching goal of this project was to investigate the mechanisms through which unemployment and underemployment may impact mental health. Three factors that have emerged as important predictors of poor mental health in the unemployed are financial hardship, social support and a sense of control/mastery. This thesis presents three studies centred on the links between mental health and employment status, and explores the role of mastery, financial hardship, and social support.

The first study used longitudinal data from a community sample from the Canberra/Queanbeyan region. Two thousand, three hundred and eighty-nine participants initially aged in their early twenties were followed across eight years and three waves. Social support, financial hardship and mastery all emerged as important mediating variables in the relationship between unemployment and depression, compared to the employed. These results suggest that these factors are indeed salient characteristics in the experience of unemployment. By contrast, for the underemployed group, only financial hardship demonstrated a mediating effect on the association between underemployment and depression – suggesting that even inadequate employment may provide a greater source of mastery and social support than no work at all.

The second study also used longitudinal data to build upon these findings by using a nationally representative sample from three waves, as well as exploring the impact of duration of unemployment on mental health. The results broadly supported the findings of Study 1 regarding unemployment, though the findings differed regarding underemployment. Financial hardship, mastery and social support all emerged as important explanatory factors for poor mental health differences (compared to the employed) for both under- and unemployment states. In regards to the impact of time spent unemployed on mental health, comparison of respondents with different durations of unemployment suggested that for the first 9 weeks of unemployment there is a strong negative association between mental health
and duration of unemployment. However, after these first nine weeks mental health does not continue to decline. This is a particularly salient finding given recent Australian Government policy changes that have proposed a ‘wait-time’ before individuals can claim welfare assistance after losing a job.

The final study investigated whether mastery, social support and financial hardship was related to high depressive symptomatology within a sample of unemployed and under-employed individuals (n = 192). Furthermore, it explored how these factors may influence key factors related to reemployment, or indeed continued unemployment: job search intensity, job search expectations and intentions. The results indicated that differences in depression were related to financial hardship, mastery and some measures of social support, as were those in the first seven weeks of unemployment. These correlates of depression were also shown to be associated with job seeker’s job search intensity, expectations and intentions – suggesting that the factors associated with poor mental health also play a role in job search outcomes.

The results of these studies have three main implications. First, financial hardship, social support and a sense of mastery help to explain differences seen in the mental health between employment states (unemployed v. employed, underemployed v. employed), as well as being important correlates of depression amongst the unemployed and underemployed. Second, the impact of financial hardship, social support and a sense of mastery on the job search process may hinder or enhance chances of reemployment. Finally, future research needs to more comprehensively consider the duration of unemployment when investigating the impact of unemployment on mental health, as the results suggest that there is not a linear relationship. There are also important implications from these findings for the types of psychological and other support that is most applicable for those who are unemployed.
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Chapter One

Thesis Overview: Exploring the mental health of the underemployed and unemployed

1.1 Thesis Topic

Employment not only provides economic and financial stability, but is a central mechanism for social inclusion and mental wellbeing. The unemployment literature also demonstrates the harmful effects of unemployment on psychological wellbeing (for review see Murphy & Athanasou, 1999; Paul & Moser, 2009). Unemployment, or inadequate employment, is often viewed by economists as an economic problem rather than a psychological one (Dollard & Winefield, 2002). Yet, a report prepared by Access Economics (2009) found that the financial cost of mental illness in young people in Australia was $10.6 billion. Seventy percent of this cost was accounted for by productivity lost due to lower employment, absenteeism and premature death of young people with mental illness (Access Economics, 2009).

So, while unemployment is often considered an economic topic, the psychological consequences are considerable. As people must work to obtain wages as a major source of their income, not having a job means lower income and poorer access to social resources (Randall, 2009). Furthermore, particularly for young adults, working is vital for establishing independence and a sense of personal identity (Winefield, Tiggemann, Winefield, & Goldney, 1993). Even a short period of unemployment can precipitate a series of events that can affect a broad range of outcomes far into the future – from health status to future income earnings, blood pressure, and even low birthweight of children (Adler & Newman, 2002). Therefore, as low unemployment also reduces poverty and inequality, it is not surprising that both economic and social policies seek to achieve greater workforce participation.
A psychological consideration of the unemployment experience can help identify the factors that may prevent or enhance the chances of individuals to find work. Thus, an examination of unemployment through a psychological lens allows for an identification of the ‘personal costs’ of unemployment, and ultimately can provide a more comprehensive evidence base for policies and clinical programs seeking to improve participation in the workforce.

1.2 General Aims

The overarching goal of this project was to better understand the mechanisms through which unemployment and underemployment may impact mental health, particularly the role of mastery, financial hardship and social support. There was a broad focus on a young adult group, which captures a population moving through many life changes and transitions – individuals in this age group are typically trying to successfully complete their schooling and training, move into careers, develop their identities, and perhaps start a family. Furthermore, it is this population that is more likely to experience inadequate employment states, as well as be more likely to report poorer mental health. The use of data from a general population sample (utilised in Study 1 and Study 2) allowed for investigation of naturally-occurring patterns of change in employment status and mental health over time. In addition, the inclusion of comprehensive, theoretically relevant, socio-demographic and health factors allowed the analyses to better explicate the role of mastery, financial hardship and social support in explaining the relationship between employment status and mental health. This project was also uniquely positioned to explore the relationship between time unemployed and mental health (Study 2). The analyses of existing representative data sources was complemented by analysis of data collected from a sample of job seekers (Study 3). This allowed for a direct examination of the association between mastery, social support
and financial hardship and mental health within the underemployed/unemployed. In addition, the third study sought to examine these factors within the context of job search behaviours and duration of job seeking, to reflect and examine some of the lived realities faced by the underemployed/unemployed. Making explicit the relationship between unemployment and underemployment and poor mental health is requisite to the identification of factors needed for intervention (Daniel, Brown, Dhurrkay, Cargo, & O'Dea, 2006).

1.3 Aims of Specific Chapters

After broadly reviewing the theories and research studying employment status and mental health (Chapter Two), the key variables and covariates central to the research questions are then discussed (Chapter Three). The methodology, statistical analyses and datasets utilised for the following two studies are then briefly explained (Chapter Four). The following two chapters (Chapter Five and Chapter Six) outline the results of secondary data analysis for Studies 1 and 2. Chapter Seven presents the results from a complementary study focusing on the interplay between the correlates of depression and the job seeker/unemployment experience (Study 3). Chapter Eight concludes and summarises the overall project findings.

Chapter Two: Employment status and mental health: The current status of theory and research

This chapter reviews the literature surrounding the employment status difference in mental health outcomes. The chapter outlines the findings to date around the psychological impact of unemployment and underemployment, as well as the predominant psychological theories that seek to explain these differences.
Chapter Three: The role of financial hardship, mastery and social support: Variables in the Current Research Project

This chapter reviews the socio-demographic and health variables that are examined in this project, and the relevant findings from literature to date. The chapter then describes the three key variables that feature in each of the three studies – mastery, financial hardship, and social support – and explains their theoretical importance in understanding the relationship between employment status and mental health.

Chapter Four: Methodology for Secondary Data Analysis: Study 1 (PATH) and Study 2 (HILDA)

This chapter briefly outlines the methodological framework used for the first two studies. The chapter outlines characteristics of the survey samples, procedures and measures used by the two datasets: the Personality and Total Health (PATH) dataset, and the Household, Income and Labour Dynamics in Australia (HILDA) Survey dataset, highlighting the differences between these two samples. Finally, the statistical analyses used to analyse the data for both Study 1 and Study 2 are reviewed.

Chapter Five: Study 1 (PATH)

This chapter reports the findings from Study 1. This study was conducted to confirm the presence of employment status differences in levels of depression in the community based PATH sample for one cohort (aged 20 – 24, 24 – 28, 28 – 32 years at three time points spaced 4 years apart). Longitudinal analysis was conducted. The primary research question addressed in this study was: To what extent do financial hardship, mastery and social support mediate the relationship between employment status and depression? Based on the evidence of previous research, it was hypothesised that: Both unemployed persons and underemployed persons would vary in levels of depression...
compared to those employed, and these differences will be largely explained by the key mediating variables. Results suggested that for Canberra and the surrounding communities, underemployment and unemployment represent greater risk of depression compared to full-time employment. Furthermore, the differences observed in depression outcomes between unemployment and employment can be largely explained by financial hardship, mastery, and social support. However, regarding underemployment versus employment, only financial hardship demonstrated an explanatory role. These results reveal the vulnerabilities experienced by the unemployed and underemployed young people in the Canberra/Queanbeyan region. Further research is needed to confirm the generalisability of these results at a national level.

Chapter Six: Study 2 (HILDA)

Chapter 6 reports the findings from Study 2. The aim was to replicate and extend the findings from Study 1, using a nationally representative Australian sample. This study was conducted to confirm the generalisability of these findings, as well as to examine the effect of duration unemployed on mental health outcomes. The research question addressed: Using a national sample, can we replicate the findings that the key variables financial hardship, mastery and social support mediate the relationship between employment status and mental health? And furthermore, does mental health vary across time unemployed? We hypothesised that: Mental health would vary with time unemployed, and that financial hardship, social support and mastery would be identified as key mediating variables between mental health and unemployed vs. employed, and underemployed vs. employed. The results demonstrated general support for Study 1, especially regarding the role of the key mediating variables between unemployment and employment. The findings also implied that financial hardship, mastery, and social support are also important mediators in the relationship between
underemployment and mental health, compared to the employed. Finally, the results concerning the trajectory of mental health across weeks spent unemployed demonstrated that this relationship was not a linear one – suggesting that recent welfare policies seeking to incentivise reemployment may in fact be detrimental. Therefore, understanding the role that these key factors play in understanding depression within a group of unemployed/underemployed, and how they interplay with the job search process is necessary when seeking to identify barriers to reemployment.

Chapter Seven: Study 3

Chapter 7 reports findings from Study 3. The analyses undertaken explored whether the key variables identified in Study 1 and 2 were also associated with poor mental health within a sample of job seekers, and how these correlates of depression may also interplay with job search behaviours. Previous research has identified job search expectation, job search intention, and job search intensity as important predictors of re-employment. This study investigates if these same factors are related to a sense of mastery, financial hardship and social support. Job seekers receiving welfare payments (Newstart or Youth Allowance) were surveyed about their mental health and job seeking behaviours using a variety of recruitment methods. It was hypothesised that: 

*Low mastery, reports of financial hardship, and low levels of social support will be correlated with depression; Trajectory of depression scores will vary with time unemployed/job-seeking; and to explore how mastery, financial hardship and social support interplay with features of the job search experience.*

Results indicated that low mastery and financial hardship were related to greater risk of depression amongst the job-seekers, and the findings supported findings from Study 2 suggesting that the trajectory of mental health across time unemployed/looking for work is not linear – experiencing a sharp decline, before plateauing. Finally, results around job seeking
suggested that financial hardship, mastery, and social support were all associated with reports of job search intensity, job search expectations, and job search intention.

Chapter Eight: Final Discussion and Conclusion

Finally, Chapter 8 draws together the findings from previous chapters and outlines the strengths and limitations of the studies conducted. This chapter also highlights the importance of research findings generated in this thesis and identifies areas where future research is required. Finally, the chapter considers the implications and applications of these findings in policy and clinical settings.

1.4 The Importance of this Thesis and Contribution

Reports indicate that unemployment and “hidden unemployment (i.e. underemployment) are significantly increasing problems in Australian society. Thus far, research in psychology provides strong evidence that unemployment adversely affects a persons’ mental health; though relatively few studies have been conducted on the underemployed, emerging evidence suggests that underemployment is associated with poorer mental health outcomes as well. One explanation for the observed differences in mental health between employment states is that the exposure to the related stressors associated with inadequate employment (unemployment and underemployment) leads to an increased vulnerability to psychological problems. This has been supported by other research that demonstrates that highly stressed individuals are more likely to experience greater risk of infection illness, depression, and even increased mortality (Cohen & Williamson, 1991). However, stress does not produce universally negative outcomes. According to the stress and coping model, the variance seen in health outcomes is largely because of individual differences in access to social and personal resources. For instance, if the source of the stress (i.e. job loss or poor quality
employment) contributes to manifestations of stress (i.e. depression or anxiety disorders), then access to personal and coping resources will influence whether the individual can cope effectively with the stress (Pearlin, 1999). This project largely focuses on three key mediators of employment status and mental health – a sense of mastery, social support and financial hardship. Through concentrating on the mediators, this project hopes to contribute to the literature about the mechanisms through which mental health is affected by employment status. Furthermore, by utilising data sourced from community and a representative sample, these findings can provide an understanding of the mental health status of the Australian community and population.

Vinokur and Schul (1997) identify three main reasons why the examination of mediation effects is important for clinical psychology. The first reason is that identification of the key ingredients explaining the association between employment status and mental health can strengthen future interventions. Secondly, understanding the role of certain mediators can be used to target interventions to individuals most at risk. And finally, focusing on mediators can help to identify those that “may take more time to have discernible effects on long-term distal outcomes” (Vinokur & Schul, 1997, p. 867). By utilising large representative samples of individuals, this thesis is able to provide findings that are relevant to both policy and practice in the wider community. This is particularly important as the Australian political landscape has experienced shifts in social policy to target ‘welfare dependency’ and to change the nature of the Newstart Allowance (the predominant welfare support for those who are unemployed) to encourage workers back into the workplace. In order to develop and target clinical interventions in the underemployed and unemployed, we must first understand the mechanisms through which these employment states affect mental health. In addition, it is important to understand what may be some of the barriers for individuals who are unemployed and seeking reemployment. Therefore, this project sought to identify the
factors that are associated with poor mental health both between employment states and within the unemployed/underemployed, and also investigated how these influence job search behaviours.
Chapter Two

Employment Status and Mental Health: Research and Theory

2.1 Summary

This chapter outlines the current conceptual and empirical research conducted around the impact of unemployment and underemployment on mental health. It begins by outlining the prevalence of unemployment and underemployment in Australia, as well as defining these terms. Second, the chapter presents evidence from meta-analyses and systematic reviews examining the relationship between employment status and a variety of mental health outcomes. From this review, it is concluded that a) unemployment and underemployment does affect mental health b) mental health presents as a risk factor for unemployment, and c) it is unclear whether the processes for unemployment and underemployment are the same. In addition, the chapter presents the conceptual models and theories that seek to explain this relationship. The effects of unemployment and underemployment are broad reaching and can have a serious impact on the mental health of those who face these employment states. Understanding the factors that mediate this relationship is key to developing programs that may help to prevent the deterioration of mental health in the early course of unemployment, which will be reviewed in Chapter 3.

2.2 Background: Unemployment and Underemployment in Australia

In Australia, paid work is typically a major part of life. Work can provide a sense of identity, connectedness to the community, and encourage feelings of achievement and meaning. It is not surprising, then, that effects of involuntary exclusion from the labour force can permeate into all aspects of one’s life on a day-to-day basis, colouring the “minutiae of individual and family lives” (Allatt & Yeandle, 1992, p. 20).
The experience of seeking and not obtaining work can be demoralising, as well as engendering feelings of hopelessness, despair and a loss of self-confidence – potentially resulting in long-term and serious mental health problems (Winefield, Tiggemann, & Winefield, 1992; Winefield et al., 1993). Furthermore, the psychological distress faced by the unemployed appears to be “compounded by their own pessimism and by the hostile attitude of society to them” (Winefield et al., 1993, p. 10). These social attitudes are reflected in government policies developed in the past two decades, which have moved to cut funding and to be tough on the unemployed or ‘dole bludgers’ (Eardley & Matheson, 1999). However, research has indicated that many of these social attitudes are not reflective of the true reality facing job-seekers (Eardley & Matheson, 1999; Winefield et al., 1993).

The general definition of unemployment refers to those who are absent from the workforce, seeking a job and are ready to work if they find a job. With the most recent Australian unemployment figures indicating a six percent (6%) unemployment rate (Trading Economics, 2015), the experience of unemployment is still realistically a sizeable minority of our community (Winefield et al., 2000). However, when considering youth unemployment, this figure is over twice as high (13.6%) (Trading Economics, 2015). Moreover, the nature of work in Australia has undergone major changes which has resulted in proportionally fewer full-time work, and more part-time, casual, and contract labour/jobs (Winefield, 2002). The criteria for meeting the definition of ‘unemployed’ has been criticised as being too stringent and overlooking those who are underemployed (ABS, 2013). Thus, when figures of underemployed are also taken into account, the rate nearly doubles again (Australian Bureau of Statistics, 2014). The reason that the underemployed are commonly unaccounted for partly lies with the number of qualities or indicators that have been used to define the “underemployed” employment state, including: involuntary part-time employment
(Dooley, Prause, & Ham-Rowbottom, 2000); financial loss or wage that falls below the poverty level (Winefield, 2002); underutilisation of skills (Johnson & Johnson, 2000); or when an individual engages in employment in a field outside his or her education (Feldman, 1996).

A number of studies have demonstrated that many of the above indicators are indeed related to poorer mental health outcomes when compared to full-time stable work (Dollard & Winefield, 2002; Dooley & Prause, 2004; Winefield, 2002). Creed and McIntyre (2001a) demonstrated that both the dissatisfied employed and unemployed were more likely to experience psychological distress than their satisfied unemployed counterparts. Similar findings were highlighted in the study conducted by Butterworth et al. (2011) who demonstrated the importance of the psychosocial qualities of a job in determining good mental health. The findings from this study indicated that the positive benefits of employment were only associated with good quality employment. Further to this, that the transition from no work to poor quality work actually represented greater risk for poor mental health when compared to those who remained unemployed (Butterworth et al., 2011). Other research into underemployment has focused on the mismatch between the job obtained and job desired – that is to say, those who are involuntarily part-time employed. These jobs are typically described as ‘involuntary’ because they are characterised by a low wage and offer few benefits (Kalleberg, 2009). For the purposes of this thesis, underemployment refers to involuntary part-time work unless specified otherwise.

Dooley et al. (2000) argue that employment status should not be conceptualised simply as employed versus unemployed, but should be thought of as a continuum ranging from adequate employment (e.g. financially secure, stable, and job satisfaction) to inadequate employment (e.g. involuntary part-time work and poor wages), to unemployment (e.g. satisfied versus dissatisfied). In addition, recent studies have
indicated that a ‘cycle of disadvantage’ can eventuate where some adults may end up alternating between unemployed and underemployed states, failing to transition into gainful employment (Leach et al., 2010). Both unemployment and underemployment, particularly for young adults, can have serious future consequences including: a higher risk of poverty; young men facing higher rates of mortality; an increased likelihood of future lower wages; and a greater risk of future under- and long-term unemployment (Winefield et al., 1993). As a consequence, understanding how to encourage and increase the chances of reemployment also represents a focal point of research (Vinokur & Caplan, 1987; Wiener, Oei, & Creed, 1999). Therefore, two central components of the unemployment literature consists of understanding the impact of employment status on mental health, as well as identifying what factors relate to job-seeker success and reemployment (Wanberg, Zhu, Kanfer, & Zhang, 2012).

2.3 The Psychological Impact of Unemployment and Underemployment

Mental health and wellbeing can be conceptualised as the extent to which a persons’ emotions, thoughts and behaviours enable them to function effectively within the community or adapt to cope with adversity and change (Australian Bureau of Statistics, 1997, p. 1 cited in Dockery, 2006). On the other hand, mental ill-health refers to a spectrum of problems that significantly interferes with an individual’s cognitive, social and emotional functioning (WHO, 2008). The detrimental effects of unemployment have been well documented, with ample evidence suggesting that unemployment is associated with mental ill-health, such as higher levels of clinical anxiety and depression (Feather, 1997; Feather & O'Brien, 1986; Linn, Sandifer, & Stein, 1985; Platt, 1984; Stankunas, Kalediene, Starkuviene, & Kapustinskiene, 2006). However, research has also demonstrated the more global mental health effects of unemployment, with research showing decreases in a number of mental health related variables. For
example, compared to their employed counterparts, unemployed individuals report lower levels of self-esteem and confidence (Winefield et al., 1992); lower levels of life satisfaction (Kassenboehmer & Haisken-DeNew, 2009; McKee-Ryan, Song, Wanberg, & Kinicki, 2005); high levels of hopelessness (Platt, 1984; Winefield et al., 1992); and lower levels of personal control (Price, Choi, & Vinokur, 2002).

The three most notable meta-analyses examining the effects of employment status on mental health are by Paul and Moser (2009), Murphy and Athanasou (1999) and McKee-Ryan et al. (2005) (major findings are outlined in Table 2.1). While these analyses differed in some respects, there were four major findings that were consistently shown in each study: there were higher prevalence rates of poor mental health and wellbeing amongst the unemployed compared to the employed; individuals experience a reduction in mental health following job loss; individuals report improvements to mental health and wellbeing following reemployment; and, interestingly, that the size of the effect associated with reemployment is actually larger than the size of the reduction in mental health following job loss (McKee-Ryan et al., 2005; Murphy & Athanasou, 1999; Paul & Moser, 2009).

Murphy and Athanasou (1999) reviewed sixteen studies, of which fourteen showed a significant, negative association between unemployment and mental health. The study indicated that there was a small effect size $d=.36$ for the extent to which unemployment influences mental health, and a relatively larger effect size $d=.54$ for the extent to which employment benefits mental health. This was confirmed by Paul and Moser (2009), who found an effect size of $d=0.19$ of an increase in distress following job loss, compared to $d=-.35$ of a decrease in distress following reemployment. This finding was consistent across a number of mental health indicators including symptoms of: depression, anxiety, psychosomatic symptoms, subjective well-being and self-esteem. McKee-Ryan et al. (2005) also found that unemployed persons not only suffered poorer
mental health than their employed counterparts, but also reported lower life satisfaction, marital or family satisfaction, and subjective physical health. While individuals experienced high levels of distress following job loss, it appears that the immediate relief of distress following re-employment is relatively greater. These findings highlight the power of employment for maintaining mental health and wellbeing, but also the power of employment in recovery from ill-mental health suffered in unemployment.

As most unemployed and underemployed persons in Australia receive some sort of government benefit, the literature has also extended to examining the impact of ‘income support’ on mental health. Unemployment benefits provide a financial safety net for those who have lost their job, or who require a ‘top up’ if their income is insufficient. Research has suggested that between 35 and 60 percent of welfare recipients report a clinical mental illness diagnosis or substantial mental health symptoms (Butterworth, 2003; Butterworth, Crosier, & Rodgers, 2004; Kiely & Butterworth, 2014). In an Australian study, Butterworth et al. (2004) found that those who were receiving disability, lone parent and unemployment payments were significantly more likely to experience moderate and severe disability due to poor mental health compared to non-recipients. These findings supported research conducted in America, which has shown elevated prevalence of mental disorders amongst welfare recipients compared to the general population (Derr, Hill & Peretti, 2000 as cited in Butterworth et al., 2004; Coiro, 2001).
### Table 2.1. Summary of meta-analyses and systematic reviews (Murphy & Athanasou, 1999; McKee-Ryan et al., 2005; Paul & Moser, 2009)

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of studies reviewed</th>
<th>Moderating variables</th>
<th>Main Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murphy and Athanasou (1999)</td>
<td>9 of 16 longitudinal studies reviewed were used in the meta-analysis</td>
<td>Nationality (Anglo-Saxon versus European), for age (young versus adult), for gender (male versus mixed gender), and for type of measurement procedure (General Health Questionnaire versus other instruments).</td>
<td>The effect size for status-changes from employment to unemployment $d = .36$. The effect size from unemployment to employment $d = .54$. No significant moderator effects were found.</td>
</tr>
<tr>
<td>McKee-Ryan, Song, Wanberg, &amp; Kinicki (2005)</td>
<td>104 empirical studies from peer-reviewed journals</td>
<td>Unemployment rate, unemployment protection, length of unemployment, and school leaver versus adult unemployed</td>
<td>There was a difference in mental health between employed and unemployed individuals $d=.52$, with unemployed individuals reporting lower wellbeing. This pattern of results was also seen for life satisfaction $d=.44$ and marital/family satisfaction $d=.20$. The authors also investigated longitudinal studies and found that the effect of job loss on mental health was $d=.35$ and the positive effect of reemployment on mental health was $d = .82$. While the longitudinal effect on life satisfaction was $d = 2.79$ The results regarding the moderators were mixed. The long term unemployed samples displayed lower wellbeing, and unemployed school leavers also showed lower wellbeing compared to the unemployed adults. There were no moderating effects for the unemployment rate, and the difference between those with high unemployment benefits versus low unemployment benefits only approached significance.</td>
</tr>
<tr>
<td>Paul and Moser (2009)</td>
<td>237 cross-sectional and 87 longitudinal studies.</td>
<td>Gender, socioeconomic status, majority/minority status, marital/relationship status, age, duration of unemployment, year of data collection, economic development, income inequality, unemployment protection, labor market opportunities, and collectivism/individualism.</td>
<td>The negative effect of unemployment on mental health has a size of $d = 0.51$, and showed that 34% of unemployed individuals displayed a psychological problem compared with 16% of employed individuals. The results also showed that mental health outcomes were worse for: blue collar versus white collar workers; long term than short term unemployed; men than women; and individuals living in countries with lower levels of income protection. The results also showed that employment after school shows improvement to mental health, while those who failed to find employment showed a decrease in mental health. Additionally, the results demonstrated evidence for selection effects, suggesting that there is a causal link form mental health to a person’s employment status – that individuals with poor mental health are more likely to lose their jobs, and are less likely to find a new job.</td>
</tr>
</tbody>
</table>
Underemployment and mental health

By comparison, there is significantly less research conducted on the impacts of underemployment on mental health, which is further complicated by the numerous definitions, as stated previously. McKee-Ryan et al. (2005) reviewed the effects of underemployment, categorised as “low pay”. They found that the evidence was similar for adults loosely connected to the labour market (e.g. with part-time work or low paying jobs) as it was for the unemployed – poorer levels of wellbeing. An important longitudinal study looking at underemployment was conducted by Dooley et al. (2000) who analysed panel data and observed differences in employment status and mental health – but conceptualised employment status not in binary terms, but as a continuum. The authors found that inadequate or underemployment was associated with increased depression (Dooley et al., 2000). In fact, Dooley and Prause (1997) concluded that moving from unemployment to underemployment is not related to positive effects for either the individual in terms of alcohol use, or in terms of mental health. In fact, the results suggested that the underemployed were more than double the risk of being unemployed 5 years later. The authors warn that “because the effects of underemployment partially resembled those of unemployment, [this] cautions against the conventional wisdom of promoting any work, including underemployment, as curative for the ills of unemployment” (Dooley & Prause, 1997, p. 787). McKee-Ryan et al. (2005) highlighted the importance, then, of taking into account of the “quality of reemployment” and underemployment, accounting for wages or skill utilisation.

Selection and Causation

Integral to the research on unemployment and mental health is the consideration of the selection-causation hypothesis. The selection-causation hypothesis questions whether the significant link between psychological health and work is caused by job loss or unemployment, or whether poor mental health is a precursor for people losing
their jobs and/or spending time unemployed. An alternative is that a reciprocal causational link exists between the two – that is to say, that job loss and unemployment harm mental health, while poor mental health also increases the risk of job loss and/or unemployment.

The idea that individuals with poorer wellbeing are more likely to become or remain unemployed is known as the ‘drift effect’. Paul and Moser (2009) found mental-health related selection effects during job-search and job-loss, although weak. That is, vulnerability or the presence of mental health problems was also found to precede unemployment and continued unemployment (Adler & Ostrove, 1999). Murphy et al. (1991) reported a trend effect for the onset of depression to be followed by a downward shift in socio-economic status (SES), suggesting that mental health is the precedent and not the other way round.

The social causation hypothesis suggests that it is the situation of job loss or being loosely tied to the labour force that causes the negative impact in mental health (Burgard & Lin, 2013). One potential explanation for this effect could be the stress of job loss, such as the experience of financial hardship, which triggers the onset of depressive symptoms. In their meta-analysis Murphy and Athanasou (1999) were particularly concerned with the problem of causality. The study included nine longitudinal studies, while controlling for baseline mental health and excluding those with previous mental health problems. Even after taking these measures, the study demonstrated the same pattern of relationship: an increase in distress following job loss, and to an even greater extent, a decrease following reemployment. This finding was replicated by McKee-Ryan et al. (2005), where the causation effect was moderate in size and much stronger than the selection effect (Galic & Sverko, 2008).

In a study conducted by Creed, Machin, and Hicks (1999), the results did not show any evidence that young people with poorer psychological health were disproportionally
disadvantaged in relation to gaining employment. Although the authors did find that poor general ability and literacy levels, as well as length of unemployment, were found to be predisposing factors for doing more poorly in the labour market. Fergusson, Horwood, and Woodward (2001) found that the association between unemployment and personal adjustment was reduced substantially after accounting for confounding factors, and a number of associations became non-significant. Nonetheless, the results did suggest that exposure to unemployment was associated with increased risk of suicidal thoughts, crime and substance abuse. Efforts to isolate causal effects of job loss and unemployment have involved incorporating and accounting for socio-demographic, socioeconomic and health factors, as well as seeking to understand how these processes may differ in the face of these different social categories.

In an attempt to disentangle the reciprocal links between mental health and workforce participation, Oleson, Butterworth, Leach, Kelaher, and Pirkis (2013) examined working-age Australians. The authors found that poor mental health was both a consequence of and a risk factor for unemployment, demonstrating that ‘both effects are important and supports concurrent responses to prevent a cycle of disadvantage and entrenched social exclusion’ (Olesen et al., 2013, p. 1). Perhaps surprisingly, McKee-Ryan et al. (2005) did not find that poor mental health deteriorates an individual’s capacity to become reemployed, as they found no significant relationship between mental health and future employment. The authors offer one possible explanation for this, citing that perhaps displaced workers with poorer mental health may be more likely to accept the first job opportunity available to them, regardless of the quality or the field of work. If true, this does in fact reflect a “cycle of disadvantage”, and suggests that those with poor mental health are more vulnerable to both unemployment and inadequate employment.
2.4 Understanding the Relationship between Unemployment and Mental Health: Theoretical Perspectives

Many theories have attempted to evaluate the psychological effects of unemployment by examining the role of work and its significance to the individual and greater community. Some have applied more general theories, e.g. attributional theory and helplessness theory, whereas others have developed specific psychological theories to explain the negative association between unemployment and poor mental health outcomes. While there is no all-encompassing theory, there are a number of theories that attempt to explain the negative association between mental health and unemployment, including: the Stage Theory (Eisenberg and Lazarsfeld, 1938); the deprivation perspective (Jahoda’s Deprivation Theory: Jahoda, 1982; Warr’s Vitamin Model: Warr, 1987), and the personal agency model (Fryer’s Agency Theory: Fryer, 1986). However, in order to provide a broader picture of unemployment, researchers have utilised the stress-coping framework (Lazarus & Folkman, 1984) and a neo-materialist approach (Lynch, Smith, Kaplan, & House, 2000). It is important to recognise that all these theories agree that unemployment is associated with distress and diminishes wellbeing, and they argue that unemployment is not only related to psychological distress, but also causes it (Paul & Moser, 2009). These theoretical perspectives are briefly outlined in the following section.

Stage Theory – Eisenberg and Lazarsfeld (1938) developed a stage model to explain the psychological processes involved during unemployment. Further reviewed by Harrison (1976) and Hill (1977), it was argued that individuals undergo a phased response in terms of emotional wellbeing to unemployment (as cited in: Stokes & Cochrane, 1984). Three stages of prolonged unemployment were identified: shock, pessimism and fatalism. In the first stage, despite the shock of unemployment it is argued that the individual is still able to maintain optimism. However, when the efforts
to obtain work fail in the second stage, the individual is likely to become pessimistic and suffer active distress. Finally, in the third stage the individual becomes fatalistic and adapts to the new state and helplessness becomes acute. Differences between individuals are explained by the length of time an individual spends in each stage, which can be influenced by the culture, the age and the gender of the individual (Eisenberg & Lazarsfeld, 1938). However, the model asserts that prolonged unemployment will inevitably lead to state of inertia, fatalism and apathy.

Kasl and Cobb’s (1970) study of employees during and following a plant closure provided support for the three stage model. The results indicated that that the men’s stress levels remained relatively stable in the initial two-month period following termination, but then entered a six-month stage of increased stress levels and then a final stage where the stress levels significantly declined. These findings were confirmed to some extent by other studies which found that those who had experienced an initial period of family stress (Kaufman, 1982) also experienced reduced affective well-being and life-satisfaction (Hepworth, 1980). Furthermore, the studies showed that physical, psychological and general health changes (Warr & Jackson, 1984) tended to improve or level off after six months of unemployment. However, these studies failed to provide any evidence for apathy, fatalism or adaptation. In addition, many studies have also failed to demonstrate the phased emotional response to unemployment (see Fagin & Little, 1984; Kelvin & Jarret, 1985).

**Jahoda’s Deprivation Theory** – Jahoda (1982) proposed a theory that identifies two aspects of employment that are important for explaining the positive association between wellbeing and employment. Jahoda stated that while employment allows people to earn a living (the manifest function of employment), employment also provides five latent functions that are considered the ‘unintended by-products’ of
employment. These benefits are: time structure; social contact; external goals; status and identity; and enforced activity.

The theory states that with the loss of employment and its associated manifest benefits, one also faces a deprivation of, or withdrawal from, the latent functions of employment. Jahoda argues that it is the deprivation of the latent functions that causes the most distress. Unemployment is not interpreted by Jahoda in terms of poverty, as poverty is not exclusive to unemployment. Rather, Jahoda seeks to highlight the supportive effect social institutions can have on behaviour and psychological wellbeing (Creed, Muller, & Patton, 2003; Haworth, 2011). Jahoda (1982) states that other social institutions, such as criminal gangs or moonlighting, can provide these latent functions and explains that this may be why some people experiencing unemployment may not suffer the associated adverse psychological consequences (Haworth, 2011).

In regards to young people and adolescents who have never experienced employment and thus have not experienced the associated latent benefits of paid work, while the model does not directly provide an explanation it is possible to argue that school or university provides similar benefits. Therefore, it is possible that young adults or adolescents that experience psychological distress may be experiencing a deprivation of those latent benefits after leaving school and facing unemployment. Access to the latent functions were also demonstrated to be less available for those unemployed or with no recent paid work compared to those employed or under-employed (Creed et al., 1999; Creed & Macintyre, 2001b). In addition, a significant association between mental health and access to latent benefits has also been demonstrated. Through employment and the heightened access to the latent benefits, findings suggest that these individuals tend to have better mental health (Creed et al., 2001). The latent model, therefore, provides an understanding of the environmental factors that may contribute to life strain and poorer psychological wellbeing in the unemployed.
However, Graetz (1993) found that the quality of employment was also an important factor – which was not directly addressed in Jahoda’s theory. The results demonstrated that, in fact, the participants who were most at risk of poor psychological wellbeing were those who were classified ‘dissatisfied workers’, followed by the unemployed, then the satisfied workers reporting highest levels of psychological wellbeing. The author cited that it is the conditions of either the workforce or unemployment that has the most powerful influence on wellbeing rather than employment status itself. This criticism was somewhat addressed by Warr’s (1987) Vitamin model below.

**Warr’s Vitamin Model** – Warr (1987) developed Jahoda’s model but did not see a necessary distinction between work and unemployment. Based on the idea that vitamin intake affects physical health, Warr (1987) posited that job characteristics affect people’s wellbeing. For instance, some vitamins, such as A and D, are harmful when consumed in large quantities, whereas other vitamins, such as C and E, can be consumed in large quantities with no ill effects.

This is analogous to the psychological features of any environment: some features if present in large quantities may cease to be beneficial and become harmful, and other features in large quantities may not become harmful. Warr (1987) proposed nine features of the environment that affect mental health: Opportunity for control; opportunity for skill use; externally generated goals; variety; environmental clarity; availability of money; physical security; opportunity for interpersonal contact; and valued social position. These features are mostly experienced negatively when unemployed – restriction of variety, reduction in the scope of decision making, denied opportunity to use one’s skills and exert control. An individual being exposed to these kinds of environmental features is more likely to suffer from poorer mental health and wellbeing. Therefore, the extent to which any environment is beneficial to mental health relates to the extent the above factors are present in the environment. Unlike the
deprivation theory, Warr’s Vitamin Model can account for why poor quality jobs with poor environmental features can be just as detrimental to mental health, and potentially more so than a non-work environment. However, the generality of Warr’s Model has been criticised due to the reduced depth of its analysis (Flatau, Galea, & Petridis, 2000).

Agency Theory – Fryer’s Agency Theory argues in opposition to Jahoda’s theory stating that the majority of people work to attain the manifest benefits of employment and show little desire for the latent benefits. A main distinction between these two theories is that the deprivation theory understands people to be reactive and dependent, and in comparison, the agency theory holds people to be fundamentally proactive and independent (Winefield et al., 1993).

Fryer argues that the absence of poverty allows for people to live and participate in satisfying activities, and that the role of poverty is often underemphasised in the research on unemployment. The agency theory posits that it is the restriction of personal agency that has negative consequences on a person’s mental health and wellbeing. The restrictions are first and foremost impacted by the loss of manifest benefits – income and economic stability. Indeed, unemployed people do report more financial strain than employed or student samples (Jackson, 1999). This financial strain has been shown to be negatively related to wellbeing (Kessler, Turner, & House, 1987; Whelan, 1992). According to Fryer (1986), this loss directly impacts an individual’s ability to plan and organise activities that contribute to a satisfying lifestyle. Through this, Fryer (1986) argues that humans feel a “desire for self-directedness” (p. 16), which is obstructed by unemployment or financial hardship, resulting in distress and mental ill-health.

Fryer (1986) cited that the unemployment experience is greater than the absence of unemployment; rather, there is an active agent who has life goals and aspirations who feels restricted by financial constraints due to their unemployment. The stress and coping framework addresses this by incorporating resources (such as a sense of control
and social support) known to influence mental health in the unemployed and financially strained.

**Stress and Coping Theories** – Stress and coping theories generally focus on how individuals adapt successfully, or unsuccessfully, to stressors or demands. Stressors that are conceptualised as life events (e.g. job loss, death of a spouse) or chronic strains (e.g. poverty, marital problems) have generally dominated the focus of the literature (Thoits, 1995). However, life events and chronic strains do not exist independently. In fact, it has been posited that life events lead to psychological problems, such as anxiety or depression, only when the events themselves result in persistent or recurrent strain (Aneshensel, 1992; Thoits, 1995). For example, a life-changing event such as job loss may only result in psychological distress if the joblessness results in ongoing and recurrent financial strain, and exceeds the individual’s personal resources. Thus, the *duration* of exposure to the stressor is also important in understanding the effect of stressors on mental health (Aneshensel, 1992).

However, not all individuals who are exposed to these life-events/chronic stressors experience psychological distress. Differences in how well one adapts to stress have been attributed to the level of coping resources (personal or social characteristics) that are accessible to the individual. So, for example, the experience of unemployment may vary by each individual subject to, not only the number of problems and perceived level of stress experienced during unemployment, but also their level of coping resources. The stress and coping framework underscores the importance of psychological and coping resources for individuals when facing stressors (Pearlin & Schooler, 1978). Thus, individuals who are highly resourced are generally able to cope with most demands, and thus experience lower levels of stress than their more poorly resourced counterparts. Pearlin and colleagues (1981) considered unemployment to be a primary stressor that may “set into motion disruptive secondary stressors such as economic
hardship” (as cited in Lennon & Limonic, 1999, p. 222). The impact of unemployment is not discrete, instead, it may result in a range of losses, including of social ties and economic stability, and subsequent loss of perceived control – and these losses may be stressful in and of themselves (Lennon & Limonic, 1999).

McKee-Ryan et al. (2005) cited the importance of personal resources to mental health in the unemployed, impacting how a person evaluates themselves and their capabilities in coping with a stressful situation. The two personal resources that have been prominently highlighted in this literature are social support and a sense of mastery. Mastery involves “the extent to which one regards one's life chances as being under one’s own control in contrast to being fatalistically ruled” (Pearlin & Schooler, 1978, p. 5). A sense of mastery shares conceptual ground with other constructs including: self-efficacy, internal locus of control, and, instrumentalism (Surjadi, Lorenz, Wickrama, & Conger, 2011); it is considered to be an indicator of positive adaption and how an individual will weather negative life events and stressful conditions (Conger et al., 2009). It is not surprising, then, that a sense of mastery has been identified as one of the most important psychological resources for mediating and moderating the link between economic hardship and health (Pearlin, 1999; Pearlin, Lieberman, Menaghan, & Mullan, 1981). The theory posits that “the strain of chronic struggles with inadequate financial resources may foster a sense of insecurity, uncertainty, and hopelessness about the future and ultimately threaten psychological functioning” (Pudrovska, Schieman, Pearlin, & Nguyen, 2005, p. 635). Thus, it is likely that economic hardship and mastery influence mental health both independently and jointly (Pudrovska et al., 2005).

However, a sense of mastery is not a stable trait/characteristic – rather, exposure to life events can be a determinant in a decline of an individual’s sense of personal control. Personal control appears to vary with age (lower levels of mastery with older age), which has been attributed to the prevalence of life events such as the loss of a spouse,
increased health problems, and greater contact with the healthcare sector (Rodin, 1986).

Surprisingly, there is relatively little research focusing on the impact of stress on an individual’s sense of mastery, however, it is generally believed that a stressful life event (such as job loss or financial hardship) leads to poor mental health outcomes through a decreased sense of mastery (Pearlin et al., 1981). The idea that exposure to stress or negative life events robs an individual of their perception of control has intuitive and conceptual consistency. Often, negative life events (e.g. death of a spouse, unemployment, or a motor vehicle accident) are sudden in nature, and usually result in drastic change: ‘The sheer forcefulness of the changes that accompany life events is often enough to significantly challenge a persons’ belief in his or her ability to exert control in the world’ (Cairney & Krause, 2005, p. 163)

Social support, on the other hand, is believed to ameliorate the effects of stress on health outcomes by providing a “buffer”. The model suggests that a set of stable, socially rewarded roles contribute to an individual’s wellbeing because it provides positive affect, a sense of predictability and recognition of self-worth (Cohen & Wills, 1985). Thus, when an individual faces a negative experience (job loss, financial hardship, or job-seeking) which would ordinarily increase the risk of psychological distress, social support protects the individual from the full force of that effect.

Thus, the stress and coping framework provides a more comprehensive understanding of not only the unemployed experience, but can also be readily translated to under- or inadequate employment. It also does not call for the exclusion of the variables deemed important in the theories mentioned above, but allows for the incorporation of a range of unemployment related stressors (i.e. job search behaviours) which have been identified as important in explaining the unemployment experience. Furthermore, examining the effect of employment status on mental health through this framework can extend consideration to the utilisation of key coping
behaviours/strategies identified under this model. Unemployment and underemployment requires individuals to cope regardless of whether the situation is viewed or experienced as negative or positive (Hanisch, 1999). While this project does not directly evaluate or measure coping strategies, the findings may help inform decisions about what strategies are best utilised to cope with unemployment/underemployment related stressors. Two of these coping strategies are emotion-focused and problem-focused coping styles – the clinical and therapeutic implications of the results are reviewed in relation to these strategies in Chapter 8.

**Neo-materialist perspective** – By contrast, a neo-material viewpoint posits that health inequalities are a result of the accumulation of negative exposures and a lack of resources including: limited access to education, health services, transportation, environmental controls, availability of food, and quality of housing (Lynch, Smith, Kaplan, & House, 2000). Higher income inequality, which is a consequence of a historical, cultural, and political-economic process, is significantly associated with many aspects of infrastructure including, unemployment, health insurance, social welfare, and educational expenditure (Lynch et al., 2000). A major proponent of neo-material factors, Lynch et al. (2000) warns against the use of psychosocial measures to explain relationships between inequality and health at the population level. Lynch et al. (2000) cites that this approach can lead to victim blaming, as well as overlooking the material conditions that structure the everyday experience for some individuals.

Marmot and Wilkinson (2001) posit that the psychosocial model and the neo-material factors do not need to be mutually exclusive; rather ‘the inclusion of psychosocial pathways in neo-material factors might arguably be considered a major difference between neo-material and material factors’ (p. 1234). Furthermore, examining psychosocial pathways can help explain how health is affected by the quality of experience in one’s environment (Daniel et al., 2006). Marmot and Wilkinson
argue that if you were to address basic living standards observed in our world today, the psychosocial effects of relative deprivation would still exist. In fact, evidence demonstrates that these factors are directly influential in health outcomes, and that their prevalence is affected by an individual’s position within the socioeconomic structure (Marmot & Wilkinson, 2001).

Therefore, this project does not consider the neo-materialist view to the exclusion of the psychosocial factors identified above, but rather considers them as complementary frameworks. The project assumes that poor mental health is strongly affected by socioeconomic structures and poor access to valued resources (such as respect from others, financial resources and access to services) (Taris, 2002), but that variability in these health outcomes may also reflect psychosocial factors. As per Pearlin (1989), “many stressful experiences, it should be recognized, don't spring out of a vacuum, but typically can be traced back to surrounding social structures and people's locations within them” (p. 242). Thus, this project concentrates on the psychosocial mechanism through which mental health is affected by various employment states, but is mindful of, and recognises the social and economic context through which, inequalities in mental health occur. Having provided an overview of the conceptual foundations of this project, the next chapter provides an outline of the variables used.
Chapter Three

Employment Status and Mental health: Mastery, Financial Hardship and Social Support and Covariates

This chapter provides an outline of the variables used in the current research project. The main aim of this thesis was to identify the extent to which the key variables – mastery, financial hardship and social support – explain the association between mental health and employment status, and whether the amount of the association explained was the same for those who were unemployed and underemployed. Understanding the process or mechanisms through which mental health outcomes are affected in these employment states is necessary to develop successful interventions mitigating distress for those facing under- or unemployment.

3.1 The Psychological Impact of Unemployment/Underemployment: Mastery, Financial Hardship and Social Support

This project seeks to explore the extent to which a sense of mastery, financial hardship, and social support mediate the relationship between employment status and mental health. It is hypothesised that unemployment leads to financial hardship, as well as a reduction in both mastery and social support. Financial hardship is believed to dynamically affect psychological wellbeing through the reduction in mastery (Mirowsky & Ross, 2001). That financial hardship and mastery are often considered together is not surprising. Financial hardship refers to an objective adversity in terms of not being able to pay bills and acquire the basic necessities of life, including food, clothing, housing, and medical care (Pearlin, Lieberman, Menaghan, & Mullan, 1981). It represents a pernicious stressor due to its associations with a number of factors related to mortality and morbidity, including: psychological distress and depression (Mirowsky & Ross, 2001; Ross & Huber, 1985); physical health problems (Kahn & Pearl, 2006;
Ross & Wu, 1996); and a risk of dying (Lillard & Waite, 1995). Furthermore, for the unemployed, lack of money curbs their ability to engage in meaningful activities, social contacts and social status. The ability to cope with this financial stress may be based on how distressing the hardship is perceived to be; it is also likely based on the cumulative aspects of financial hardship which, over time, weaken an individual’s ability to access their sense of mastery (Newton, 2008). Therefore, experiencing one or more markers of financial hardship that is typically associated with unemployment or underemployment may engender a feeling that life events are not under a person’s control.

One of the most important factors believed to influence mental health outcomes in the experience of stress is an individual’s sense of mastery – the extent to which an individual feels that life’s events are within or outside of their control (Pearlin & Schooler, 1978). A sense of mastery has been conceptualised as a pre-existing cognitive orientation around a sense of control that can reduce the exposure and impact of perceived stress (Roxburgh, 2011). However, recent studies have cited that an individual’s sense of mastery is not a static trait; rather, it is posited that mastery can also change as individuals grow older (Schieman & Turner, 1998), experience discrimination (Cattaneo & Chapman, 2010), or lose their income (Marmot & Wilkinson, 2001). Research has also demonstrated the importance of a sense of mastery as a mediator between stress and poor mental health in a number of contexts, including: economic hardship and mental health/life satisfaction (Creed & Bartrum, 2008; Pudrovska, Schieman, Pearl, & Nguyen, 2005), education and depression (Dalgard, Mykletun, Rognerud, Johansen, & Zahl, 2007), caregiver stress and depression (Mausbach et al., 2012), and also gender and rumination (Nolen-Hoeksema & Jackson, 2001).

Individuals with a high sense of mastery tend to believe that they can exert their power to influence the environment to bring about the outcomes they desire. A person
with a low sense of mastery tends to feel that the circumstances and events of their lives are out of their control and dictated by external forces, experience powerlessness, and the sense that chance, luck and fate are powerful in the direction of their lives (Schieman, 2011). This is demonstrated by differences in levels of perceived control observed by social status, gender, minority group members, marital status, and educational attainment (Thoits, 1995). These results reflect the impact of the environment, and social and economic situation on one’s mastery. Thus, when faced with deleterious circumstances such as economic hardship or unemployment, mastery can be a potent resource to buffer against physical or mental ill-health (Lachman & Weaver, 1998). However, as previously explained, an individual’s sense of personal control can also be influenced by critical life events and social contexts. Conceptually, a job is considered to be a social context that represents a key source of control – not only because of the provision of a stable and predictable source of income, but also through social interactions and achievements in the workplace (Infurna, Gerstorf, Ram, Wagner, & Heckhausen, 2012). Therefore, through job loss, one is confronted with a considerable number of economic stressors, but also the loss of a social context that had provided them with opportunities to enhance a sense of personal control.

In addition to mastery, the availability of social support has been highlighted in the literature as an important factor in individual’s perception of stress. Pearlin et al. (1981) found that social support helped maintain a sense of mastery in those who were unemployed, however the results did not find that social support helped reduce depression or perceived economic strain. One argument for the positive effect of social support in the unemployed, is that it reduces the feeling of being overwhelmed with the situation, helps the individual to appraise the situation as less stressful, increases the availability of coping resources, and aids in the inhibition of maladaptive responses (such as alcohol or drug use) (Cohen & Wills, 1985; Fell & Hewstone, 2015).
Studies have shown that a sense of being connected has an enormous impact on psychological wellbeing and mitigates the effects of employment status and financial hardship (Dean, Carroll, & Yang, 2007; La Guardia, Ryan, Couchman, & Deci, 2000). In unemployment, individuals often suffer a decrement in social networks, and lose contact with people outside the nuclear family (Jahoda, 1982). Furthermore, the financial losses faced in unemployment can restrict social activity, which has been shown in studies to reduce activity and lead to greater social isolation (Paul & Batinic, 2010). Other studies have reported caution in the use of social support as a tool to attenuate the effects of economic hardship or poverty on mental health in all contexts. Caughy, O’Campo, and Muntaner (2003) found that the availability of social support resources and connectedness decreased incidents of depression in children from wealthy neighbourhoods; however, this effect was reversed in those from poor neighbourhoods. The results suggested that those who were highly connected within impoverished neighbourhoods were more likely to display mental and behavioural problems than those whose parents were relatively socially isolated (Caughey et al., 2003; Fell & Hewstone, 2015). This may be due to a ‘stress contagion’ effect, where maintaining strong social networks in poorer neighbourhoods exposes the individual to others who are also experiencing poverty and immense stress (Fell & Hewstone, 2015). This exposure, in turn, reinforces one’s own experience of stress, resulting in a low sense of self-efficacy and poorer mental health. Therefore, if social support is to be used as a tool to mitigate poor health outcomes, it is vital to ensure that the qualitative nature of the social support does not exacerbate the problem (Fell & Hewstone, 2015). Studies may need to take into account both “positive” and “negative” aspects of social support.

If mastery, financial hardship and social support are deemed important in explaining poor mental health for the unemployed or underemployed, and job seeking is a major component of unemployment, it begs the question: how do these factors influence the
Financial hardship has generally been conceptualised in the job search literature as a predictor of job search intensity or effort. Theoretically, it has been opined that those who have greater financial obligations or lack financial resources are more motivated to find employment (Wanberg et al., 1999). This has been supported in the literature, which has generally suggested that financial need was positively related to active job search behaviours (Wanberg et al., 1999; Kanfer et al., 2001).

While a sense of mastery has been considered a predictor of job-search behaviours, very little research has considered the impact of mastery on various aspects of the job search process – particularly in the context of duration of unemployment. There is evidence that the longer a person remains jobless, the more they report feeling less confident about finding work and are less likely to be offered a job. Dockery (2006) demonstrated that a subjective measure of ‘chance of reemployment’ decreased the longer a person was unemployed: people who had been out of work for less than 3 months rated their chances of finding work at 66 – 70%, which dropped to approximately 46% between 12 – 24 months and to 39% for those who had been unemployed for 2 years. While this was not a measure of mastery, it does indicate depletion in a specific aspect of an individual’s sense of their ability to control outcomes in the future. Of course mastery is not the only mechanisms by which stress leads to poor mental health outcomes, but it is nevertheless a pivotal process that helps to explain the association between job loss, job seeking, financial hardship, and distress (Cairney & Krause, 2005; Pearlin et al., 1981).

Social support has also been shown to be important in predicting continued job-search in the face of unemployment. Research has demonstrated that social support can improve a job-seeker’s effort and sense of self-efficacy towards job search and reemployment in a number of ways: the job seeker’s spouse providing positive attitudes and expectancies of finding employment (Vinokur & Caplan, 1987); emotional support
(encouragement and listening) and tangible support (transport and childcare) (Reynolds et al., 2010). However, while social support represents a protective factor in the experience of unemployment, as well as being linked to positive outcomes for job-search behaviours, unfortunately, it is likely that the unemployed will experience decreases in this resource when they need it the most.

3.2 The Psychological Impact of Unemployment and Underemployment: Duration of Unemployment/Job Seeking

Given that the impact of stressors on one’s mental health is believed to vary by duration of exposure to those stressors, it is important to consider the duration of unemployment/job-seeking on mental health. McKee-Ryan et al. (2005) found an effect of duration of unemployment, where those who were unemployed for six months or more experienced poorer mental health than those who were in their first six months of unemployment. This was explained by Paul and Moser (2009) who stated that ‘a linear deterioration of mental health with increasing duration of unemployment can be expected, because stress factors accumulate with prolonged unemployment: unemployed workers experience continued and more and more discouraging failures in job seeking, financial pressures become stronger as time passes, savings are used up, and personal or household items require repair or replacement’ (p. 267).

While most studies have focused on large, discrete periods of time as comparison points (i.e. greater or less than 6 months of unemployment) (Frese & Mohr, 1987; Hepworth, 1980; McKee-Ryan et al., 2005; Mckenna & Fryer, 1984; Paul & Moser, 2009), the majority of these studies share the assumption (but do not explicitly investigate) that in the first weeks after job loss, mental health remains relatively stable, followed by deterioration in the later months (Warr & Jackson, 1984). Mental health is then thought to stabilise as the individual adapts to the stressors and draws on their
coping resources. Very few studies have focused on the trajectory of unemployment on mental health, in terms of smaller discrete periods of time. Some preliminary research, however, suggests that individuals may experience a sharp decline in mental health in the early stages of unemployment (Dockery, 2006), in contrast to previous assumptions. The current project seeks to explore this relationship in more detail, not only to better understand the possible trajectory of mental health across time for those unemployed, but also to explore the effect of duration of unemployment on other key variables such as mastery, financial hardship, social support and the job search behaviours.

3.3 Unemployment, Mental Health and the Job Search Process: Barriers to Reemployment

Given the mental health consequences of unemployment and underemployment, it is tempting to assume that the antidote to these problems is to simply gain good quality employment. However, from the research conducted, it is clear that the task of finding employment is not easy and is itself taxing and stressful (Lee & Vinokur, 2007; Wanberg, Glomb, Song, & Sorenson, 2005; Wanberg, Zhu, & van Hooft, 2010). Despite the fact that looking for work is a lived reality for most unemployed people, little research to date has investigated whether the psychological and financial correlates of poor mental health in the unemployed are also associated with the predictors of successful job search behaviours. As job-seeking is usually accompanied by rejection, disappointment and psychological setbacks it makes the job-seeking process difficult to sustain across time unemployed. It is therefore important to understand whether these job search activities are associated with the same factors that are related to poor mental health amongst the unemployed/underemployed. For example, being unemployed is likely to decrease mastery, and a low sense of mastery might in turn be associated with less successful job search activities. Four factors associated with job search success are:
job search intensity, job search expectations, job search intention and job search duration.

Job search intensity refers to the amount of time or effort an individual spends on their job search activity, and job search intention – a measure of the job seeker’s intention to seek reemployment (Vinokur & Caplan, 1987). Job search expectations refer to the perception of the job seeker that their job seeking will lead to reemployment (Vinokur & Caplan, 1987), whereas job search duration “is a negative proxy of employment success and refers to the length of time that the individual has looked for employment” (Kanfer, Wanberg, & Kantrowitz, 2001, p. 842). For the most part, research has focused on how these job search characteristics predict reemployment. A key meta-analysis by Kanfer et al. (2001) examined the relationship between job search behaviours and job search success. The analysis found that higher job search intensity is associated with reemployment, number of job offers and shorter unemployment duration (Kanfer et al., 2001). On the other hand, job search expectations and job search intention have been found to be predictors of future job search intensity (Vinokur & Caplan, 1987; Wiener et al., 1999). To achieve the goal of obtaining a job, one must engage in a number of job search behaviours and persist in the face of potential failure or rejection (Baik, Hosseini, & Priesmeyer, 1989). However, one other study found that job search expectations were unrelated to finding a job or to the job seeker’s sense of control (Feather & O'Brien, 1987). Overall, though, the chances of reemployment are generally considered to be improved for those who demonstrated high job search expectations, high job search intention, and high job search intensity.

Job search duration (or time unemployed) has also been shown to be related to a job-seeker’s engagement in job search behaviours. Two economic models that seek to explain the duration effect on job search behaviours are the ‘search theoretic model’ and the ‘scarred model’ (McFadyen & Thomas, 1997). The search theoretic model posits
that the longer one is unemployed the more likely they are to receive acceptable employment offers. The model proposes that this is due to the development of job seeking skills, obtaining greater information that will be helpful for ongoing job seeking, and a greater likelihood of reducing their reservation wage (McFadyen & Thomas, 1997). The scarred model proposes that the longer the duration of unemployment, the less the individual feels they are employable, and lose motivation and morale which ultimately leads to a disengagement from job search behaviours (McFadyen & Thomas, 1997). The scarred model is broadly consistent with psychological research, which offers an explanation for the reduction in job search behaviours as time unemployed increases. This research suggests that motivation and problem-solving abilities are increasingly disrupted as time unemployed increases (Warr & Jackson, 1985). This is consistent with research that poor mental health may present as a barrier to reemployment.

Theoretically, poor mental health is thought to slow job search effort, and may result in health related selection, whereby those with poor mental health are less likely to make the transition from unemployment to employment. Conceptually, this is consistent with the literature to date that asserts searching for work is a problem-focused coping strategy that reflects actions and cognitive reappraisals that are proactive, and take-charge in nature (Hanisch, 1999). In a sample of recently laid-off workers in the United States, Bennett, Martin, Bies, and Brockner (1995) found that a reduction in negative affect was related to increases in problem-focused coping behaviours. However, by contrast, Mckee-Ryan et al. (2005) found that higher job search effort was, in fact, associated with lower levels of mental health during unemployment. One possible explanation is that job search intensity and effort may reflect the extent to which employment is important to the individual, thus it may in fact be the distress of being unemployed rather than the behaviours themselves that cause the association with poor
mental health. This was reflected in a study by Feather and Davenport (1981), where those who indicated in their ratings that they were highly motivated to get a job also provided higher rates of depressive affect. Yet, motivation to find a job was also associated with the value or importance of work for those individuals. If there is an association between high job search effort/intensity and poor mental health, this may be problematic given that engaging in job-search activities is also a predictor of reemployment (Kanfer et al., 2001).

This paradox is also reflected in the role of financial hardship/strain and the job search process. As mentioned previously, financial hardship is now well established as a predictor of poor mental health, but within the job-search literature it has also been shown to be associated with high job search effort and intensity (Vinokur & Schul, 2002). Vinokur and Caplan (1987) demonstrated that the perceived effort spent job-seeking was determined by, not only the actual amount of job-seeking activities, but also by economic hardship experienced as a result of unemployment.

Gowan et al. (1999) found that financial resources were positively related to job search activities, i.e. the more money available, the more likely the unemployed person was to search for work. This finding is interesting as much research conceptualises financial hardship as an incentive or motivating factor for job search behaviours. It is possible that while poor financial resources may provide greater motivation for job search behaviours, it in fact impedes an individual’s capacity to engage in those behaviours. In addition, job-search activities were not actually related to reemployment, which is inconsistent with previous research (Eden & Aviram, 1993; Wanberg, Hough, & Song, 2002).

What is clear is that the state of unemployment/underemployment and the job-seekingless process share a complex and interrelated dynamic with mental health outcomes. It is therefore important to understand how correlates of poor mental health in the
unemployed may interact with the factors that promote and increase the chances of reemployment. The final study seeks to investigate this topic, and to further explore the role of duration of job seeking/time unemployed.

3.4 The Psychological Impact of Unemployment and Underemployment: Covariates

In order to examine the extent to which employment status and mental health is explained by mastery, financial hardship and social support, it is important to consider socio-demographic and health factors that may confound the results – the factors controlled for in this study are outlined below.

Age

Early studies suggested that there were strong age-related effects in the relationship between mental health and unemployment. This early idea suggested that a U-shaped relationship existed, that is to say that younger and older workers were less likely to be impacted by unemployment than their middle-aged counterparts (e.g. Hepworth, 1980; Winefield et al., 1993). The general idea that unemployment causes greater distress for those who are middle-aged has been consistently questioned by research since. The tenacity of this assumption was largely endorsed by Warr and Jackson (1984) who demonstrated this U-shaped relationship amongst blue-collar unemployed men in Britain. The general concept being that those who were younger were not burdened by family responsibilities or the same strength of social stigma associated with their unemployment as those who were middle-aged. Whereas for the older age group, they may be less handicapped by losses to finances, status and identity, and social contacts, and may be able to reframe the event as a shift to early retirement (Hedge & Borman, 2012).

Indeed, several studies have identified that unemployed youth do not suffer poorer mental health outcomes to the same extent as older unemployed people (Rowley &
Feather, 1987). This was also supported by Breslin and Mustard (2003) who did not find an association between unemployment and mental health for those aged 18 to 30 years of age, but did find an association between unemployment and distress among older adults (31+ years).

Overall, however, other research investigating a U-shape association between mental health and age is not so conclusive. In direct contrast to this, studies since have found that younger and older workers may be more prone to negative mental health outcomes when facing unemployment (Brand, Levy, & Gallo, 2008; Norström et al., 2014). Further, no significant curvilinear relationship was found between age and mental health in either of the meta-analyses conducted by McKee-Ryan et al. (2005) or Paul and Moser (2009). A recent systematic review conducted by Norström, Virtanen, Hammarström, Gustafsson, and Janlert (2014) stated that differences between age groups showed no obvious age-related pattern, varying by factors such as the reason for unemployment, country, and the time period of measurements.

McKee-Ryan et al. (2005) found unemployment amongst school-leavers was more strongly associated with poor mental health than amongst unemployed older adults. Those who leave school and fail to find satisfactory employment generally show poorer mental health outcomes (Feather & O’Brien, 1986; Winefield et al., 1993). Similar to the effect of reemployment following job loss previously discussed, school-leavers who find satisfactory employment show a strong gain in mental health (Creed et al., 2003). Morrell, Taylor, Quine, Kerr, and Western (1994) examined young adults aged 15 to 24, and found that the transition from unemployment to employment reduced psychological distress up to 60 – 70%, whereas the transition from employment to unemployment was found to increase the chances of experiencing psychological disturbance up to 50%.
Gender

Nearly twice as many women are diagnosed with major depression than men. However, this gender difference is not stable across age (Leach, Christensen, & Mackinnon, 2008). Furthermore, women generally earn less money, have a less stable source of income, and have lower levels of educational attainment than men indicating that the ‘unequal distribution of socio-economic resources [are] strongly linked to gender differences in depression’ (Leach et al., 2008, p. 984). Underemployment also appears to affect women, as women are a clear majority of part-time and causal workers, and thus many of the psychologically stressful effects of underemployment impact on female workers (Winefield et al., 2000). This is further compounded by the prevalence of women in jobs or careers that are typically ‘devalued’ in society (Winefield et al., 2000). On the other hand, identity issues related to employment are linked more with masculine identities in Western societies than female identities, suggesting that when men are facing unemployment their identity may be severely threatened (Paul & Moser, 2009).

Early researchers hypothesised that the effect of unemployment would not be as severe for women, as resulting financial strain would be buffered by the incomes of their husbands (Kaufman, 1982). Yet, with women participating more in the labour market and men sharing more domestic duties, this framework may no longer be relevant. In addition, despite the greater participation of women in the labour force, women still earn disproportionately less than men, so may be expected to report higher levels of financial strain than men (Creed & Watson, 2003). An Australian longitudinal study demonstrated gender differences in income and financial resources, with more women reporting that they relied on government benefits/allowances or received no income compared to men (Morris et al., 2011). Waters and Moore (2002) also found that indeed women did report more financial strain than men, but they also showed that
financial strain was more strongly associated with well-being for men than it was for women. Paul and Moser (2009) found that men experienced greater distress in unemployment than women, whereas the Mckee-Ryan et al. (2005) found that unemployed women suffered from poorer mental health and reported lower life satisfaction than their unemployed male counterparts.

In a cross-sectional analysis from Spain, Artazcoz, Benach, Borrell, and Cortès (2004) analysed gender differences in unemployment and mental health. They found that unemployment had a greater effect on mental health for men compared to women, and that this difference was related to family responsibilities and social status. Family responsibilities may be considered by some researchers an ‘activity’ that provides some structure and meaning for women when they are unemployed, but it has been demonstrated by a number of studies (see Muller, 1995), that such activities alone are not protective factors against the negative effects of unemployment. If this is true, then it may also be expected that young women who are yet to be married or have children may be more vulnerable to the negative psychological effects of unemployment than their older counterparts.

Another explanation for the smaller difference in the effect of unemployment for women than men is that a woman’s subordinate social status in the workplace may reduce the psychological benefits of employment itself. Thus, both the psychological benefit of employment and the cost of unemployment is not as great. Women are more likely to occupy insecure, low status jobs with no decision making authority compared to men, which ultimately puts them at higher risk of insecure housing tenure, more chronic stressors and lower social support (WHO, 2008). That said, a study of Swedish women, found that even after controlling for social support, stressful life events, and marital status, unemployed women had higher levels of depression than their employed counterparts (Hall & Johnson, 1988). Thus, there may be only small differences
between women and men today with regard to their reaction to unemployment. It is expected that gender is unlikely to have a strong moderating effect on employment status and mental health.

*Marital status and dependent children*

Marital status is independently associated with depressive symptomatology, with unmarried individuals reporting higher levels of depressive symptomatology than married individuals (Guarnaccia & Worobey, 1991; Roberts & Roberts, 1982), and divorced or widowed participants reporting higher depressive symptoms than those married or ‘never married’. Given that social support has been shown to protect people from mental health problems, perceiving one’s partner as a source of support can buffer the effect of unemployment on mental health. Therefore, being in a relationship may improve chances of being able to maintain one’s self-value and provide better access to material and emotional support. However, as mentioned briefly above, marital status may interact with gender to influence the extent to which mental health is influenced by employment status: being married increases the risk of poor mental health for unemployed males, but decreases the risk of poor mental health for females (Artazcoz et al., 2004). It may be that married women perceive their partner a source of support in the face of unemployment, whereas males perceive their relationship as an additional pressure to finding employment. Atkinson, Liem, and Liem (1986) did find that when the number of weeks was considered, unemployment had a negative effect on marital and family support, and that this effect was larger for males than it was for females.

While much research has examined the influence of a parents’ unemployment on their child’s mental health and wellbeing (demonstrating outcomes such as high levels of behavioural problems, suicide attempts, and low levels of mastery), relatively fewer studies have been conducted to observe whether having any dependent children influences the unemployed persons’ mental health (Voydanoff, 2007). One might
expect that having dependent children is likely to increase the distress of unemployment, given the extra family responsibilities and greater consequences of the loss of income – with this effect being greater for men and single mothers. In addition, those with dependent children may be more prone to experiencing underemployment or jobs with poor psychosocial qualities as they may feel greater pressure to take any type of employment regardless of its quality (Leana & Feldman, 1995).

The difficulties faced by single mothers are well documented. Butterworth (2003) analysed the barriers to gaining and maintaining employment by comparing partnered mothers receiving welfare support to non-recipient single mothers and to single mothers receiving welfare support. The study demonstrated the multiple impacts of social disadvantage and poverty, especially on single mothers. The figures for labour force participation in Australia in 2006 showed similar figures for single mothers compared to partnered mothers respectively: “fulltime employment 19% versus 24%; part time employment 32% versus 39%” (Cheeseman, Ferguson, & Cohen, 2011, p. 33). These figures likely reflect the ‘role overload’ and the extensive accumulation of demands of single motherhood, together with the stress of employment loss, financial strain and low levels of social support (Cheeseman et al., 2011). Therefore, the role of employment may represent an even more an important mechanism for social inclusion and positive mental health for single mothers, as well as reduced distress due to a predictable source of income (Cheeseman et al., 2011).

**Physical health**

Not surprisingly, there is a greater prevalence of poor physical health found in the unemployed when compared to the employed. This must be considered in terms of the selection-causation hypothesis – that is, individuals with poor physical health may be more likely to face unemployment, or experience constraints in finding employment (McKee-Ryan et al., 2005). Associations between unemployment and physical health
have been frequently reported (Burgard & Lin, 2013; Friedland & Price, 2003; Linn et al., 1985). There is an overrepresentation of chronically ill and disabled individuals amongst those who lose their jobs and experience long-term unemployment. This reality is hypothesised to have considerably contributed to increased morbidity among the unemployed (Hafner, 1988). Furthermore, unemployed individuals who report greater physical illness and health complaints are more likely to engage in high-risk health behaviours such as alcohol or substance abuse (Claussen, 1999). Yet, causal relationships between unemployment and physical health risks have not been proven directly.

Kessler et al. (1987) showed elevated rates of poor mental health (across a number of outcomes) and self-reported physical illness among the currently unemployed, of which most were reversed following reemployment. Whereas, Linn et al. (1985) found that the unemployed were no more likely to have a diagnosis of physical illness than the employed, yet were more prone to visit the doctor, take medication and spend more sick days in bed. The authors suggested that there may well be a psychological component to physical illness in the unemployed, which is further reiterated by research that has demonstrated that physical health is mediated by factors such as social support for the unemployed (Gore, 1978).

**Education**

Socioeconomic status is commonly conceptualised by a combination of education, income and occupation. Research into socioeconomic status reveals strong links between low socioeconomic status and poorer mental and physical health outcomes, as well as inequality in access to resources. Educational attainment is one such measure that is important when understanding the impact of unemployment on mental health – compared to the well-educated, those with lower levels of educational attainment are more likely to be working part-time or “underemployed”, less likely to have fulfilling
and subjectively satisfying jobs, and are more likely to experience financial hardship (Ross & Wu, 1996). In addition to this, those with lower educational attainment are less likely to exercise, get health check-ups, and more likely to engage in substance and alcohol abuse – all of which are associated with poor health outcomes (Ross & Wu, 1996).

It is argued that there is greater financial and social resources available to those who are well-educated, which should also provide them with more adaptive coping strategies when facing unemployment compared to those with poor educational attainment (Payne, Warr, & Hartley, 1984; Payne & Hartley, 1987). Alternatively, educational attainment may itself provide status and identity, which buffers the negative effects of unemployment. Although, it could be argued that because there is a lower incidence of unemployment among this high socioeconomic status group, unemployment may come with greater stigmatisation (McFadyen, 1995). Thus, while those from a lower socioeconomic status are more likely to experience unemployment, distress may be greater for those who are from a higher socioeconomic group.

3.5 Project Aims

The aim of the project is to investigate the association between employment status and mental health, and to explore the extent to which the association is mediated by sense of mastery, financial hardship and social support. Although there are a number of stressors experienced by those who are unemployed or underemployed, this project focuses on these three constructs because of their well-documented, and profound mental health implications. In addition, these particular factors enable us to test a prediction derived from the stress and coping paradigm. The project also extends the analyses to explore the effect of duration of unemployment and job search on mental health, as well as to examine the association of financial hardship, social support and a sense of mastery in explaining observed differences in mental health within a sample of
unemployed and underemployed persons. Finally, the research aims to explore whether the correlates of depression amongst the unemployed also influence the job search process, which may enhance or obstruct chances of reemployment. The key research questions include:

• Compared to the employed, what are the differences in mental health outcomes for the unemployed and underemployed? (Study 1 & 2)

• To what extent do mastery, financial hardship, and social support explain the association between employment status and mental health? (Study 1 & 2)

• Do mastery, financial hardship, and social support explain observed differences in depression within a sample of underemployed and unemployed job-seekers? (Study 3)

• How might mastery, financial hardship, and social support impact on chances of reemployment? (Study 3)

• How does duration of unemployment/job search impact on mental health (Study 2 & 3), job search behaviours and mastery, financial hardship and social support (Study 3)?
Chapter Four  
Datasets: Study 1 and 2 – PATH and HILDA

4.1 Summary

This chapter briefly outlines the datasets utilised for Studies 1 and 2. The chapter then briefly outlines the statistical approach used to analyse the datasets. The statistical methodology and information relating to the dataset for Study 3 are outlined within Chapter 7.

4.2 PATH – Community Level Dataset

The data utilised for Study 1 (as presented in Chapter Five) is taken from the three waves (over 8 years) of Personality and Total Health (PATH) Through Life Project. The PATH Project is a community survey of 7,485 people initially aged 20 – 24 years, 40 – 44 years, 60 – 64 years living in Canberra and the neighbouring town of Queanbeyan. The data presented in Study 1 was drawn from the 20s cohort at Waves 1, 2 and 3. Figure 1.1 shows the number of participants for the 20s cohort with the dates of assessment.

The Canberra/Queanbeyan community, however, is not necessarily representative of the overall Australian population. In the PATH population, males are more likely to be engaged in some sort of study (either part-time or full-time), more likely to have obtained post-school qualifications, more likely to be married, more likely to be employed (and less likely to be unemployed), when compared to the national census. While the differences between the PATH sample and the census are roughly mirrored for females, the differences are less pronounced. Overall, the PATH project has unique strengths including ‘a large sample size, random selection from the population, narrow age cohort and longitudinal design’ (Anstey et al., 2012, p. 8). Therefore, utilising this dataset for Study 1 allowed for the exploration of how employment status may impact the mental health of young adults through time, with
high statistical power and a limited sampling bias. One should exercise caution in generalising these results to the national level.

Figure 1.1 Overview of PATH Through Life Study Design (20s cohort only)

4.3 HILDA – Nationally Representative Dataset

The data utilised for Study 2 (as presented in Chapter Six) is from three waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is commissioned and funded by the Australian Government Department of Social Services and conducted by the Melbourne Institute of Applied Economic and Social Research at the University of Melbourne. It is a broad social and economic nation-wide household panel survey, focusing on issues relating to families, income, employment and wellbeing. The sample at Wave 1 comprised of 7,682 households, and 19,914 individuals. Interviews are conducted annually with all adult members of each household, thus the dataset is prone to change due to people moving in and out of the

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households surveyed. The data presented in Study 2 was drawn from Waves 3, 4 and 7 due to the inclusion of key variables on these occasions. Only data relating to individuals aged 20 to 34 years were included in the analysis, to better be able to test the findings of Study 1. The HILDA sample has been shown to be nationally representative, and reflects the demographic profile seen in the Australian population for this age group. The use of the HILDA dataset, allowed the project to evaluate the generalizability of the previous results from the Canberra region (Study 1).

4.4 Statistical analysis – Multivariable Logistic Regression Modelling and Mediation

The data was analysed using Stata: Data Analysis and Statistical Software. The confidence level was set at 95 percent.

*Longitudinal random intercept multivariable logistic regression models*

Logistic regression models are used to model dichotomous (0 or 1) outcomes (in this case, whether a person reports clinical levels of depression (study 1) or poor mental health (study 2)). A multivariable logistic regression is a model in which there are multiple independent or response variables (Hidalgo & Goodman, 2013). This type of model was used to assess the independent relationships between a number of variables, while adjusting for potential confounders (Hidalgo & Goodman, 2013). Furthermore, the data were analysed using a random intercept model, given there were multiple time-points for each individual. The random intercept model allows for each subject to deviate from the overall mean response by a person-specific constant that applies equally over time (Gibbons, Hedeker, & DuToit, 2010).

\[ y_{ij} = \beta_0 + \beta_1 t_{ij} + \nu_0 i + \epsilon_{ij}, \]

\( y \) of individual \( i \) (\( i = 1, 2, \ldots N \) subjects) on occasion \( j \) (\( j = 1, 2, \ldots n \), occasions): where \( \nu_0 i \) represents the influence of individual \( i \) on his/her repeated observations.
By including a random-intercept in the prediction, it addresses the assumption of conditional independence amongst the responses for each data-point: it represents the combined effect of omitted respondent-specific (time-constant) covariates that cause some respondents to be more prone to poor mental health than others (Gibbons et al., 2010).

*Mediation and explained fraction approach*

Social support, mastery and financial hardship (B) represent the mediators in the analysis, which according to Baron and Kenny (1986), can be conceptualised as the factors that account for why or how a variable (employment status: A) affects an outcome – in this case mental health/depression (C).

*Figure 1.2 Mediation Model: Employment status and mental health*

The current thesis posits that the relationship between employment status and mental health is either totally or partially mediated by financial hardship, social support...
and mastery (B) – that is to say, compared to their employed counterparts, unemployed and underemployed persons are more likely to experience financial hardship, poor social support and a low sense of control which leads to and perpetuates depression/poor mental health – therefore poor depression/poor mental health is more prevalent amongst the unemployed/underemployed. Figure 1.2 illustrates this.

The main aim of these studies, however, was to measure the extent to which these mediating factors explained the association between employment status and mental health. To do this, the analyses followed a series of steps. The first step was to estimate the proportion of increased risk of depression/poor mental health amongst the unemployed and underemployed, compared to their employed counterparts after accounting for the theoretically relevant covariates. The second step was to measure the proportion of increased risk for the unemployed and underemployed compared to their employed counterparts after accounting for each mediator, first separately and then together. Finally, in order to investigate the extent to which financial hardship, social support and mastery explained the association between employment status and depression/poor mental health, a variation of the “explained fraction” technique was utilised (Crosier, Butterworth, & Rodgers, 2007).

The explained fraction approach observes declines in the odds ratios for the unemployed and the underemployed, compared to their employed counterparts before (ORₐ) the addition of the mediators and contrasts the odds ratios after (OR₇) the mediators are added. The percentage of unemployed and underemployed odds for depression/mental health (compared to the employed) explained by financial hardship, social support and mastery was calculated using the following formula:

\[ \frac{(OR_a - 1) - (OR_b - 1)}{OR_a - 1}. \]

The following chapters present the manuscripts of Study 1 and Study 2.
Chapter Five
Study 1

The role of financial hardship, mastery and social support in the association between employment status and depression: Results from an Australian longitudinal cohort study

Running head: Employment status and depression
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Abstract

Objective: There is robust epidemiological and clinical evidence of the harmful effects of unemployment on psychological wellbeing, but the mechanisms through which this occurs is still strongly debated. In addition, there is even less evidence on the impact of underemployment on mental health. Utilising longitudinal data collected from a cohort of 20 – 24 year olds, the present study examines a range of employed states and investigates the role of mastery, financial hardship and social support in the relationship between labour status and depression.

Method: Responses were from the PATH Through Life Project: A representative, community based survey conducted in Canberra and Queanbeyan (NSW) in Australia, where respondents (n = 2,404) in the early twenties were followed for eight years. Depression was measured using the self-report Goldberg Depression Scale, with the likely presence of depression being indicated by scores 7 or greater.

Results: The analyses identified unemployment and underemployment as significant predictors of depression, compared to their employed counterparts. Both unemployment and underemployment remained significantly correlated with depression even after accounting for socio-demographic, economic and psychological variables. Social support, financial hardship and a sense of personal control (mastery) all emerged as important mediators between unemployment and depression.

Conclusion: Both unemployment and underemployment were associated with increased risk of depression. The strength of this relationship was attenuated but remained significant after accounting for key variables (mastery, financial hardship and social support) and extensive socio-demographic and health covariates, indicating that no or inadequate employment contributes to poorer mental health over and above these factors.

Keywords
Unemployment, underemployment, depression, financial hardship, epidemiology, mastery

Strengths and Limitations:

- Use of large longitudinal cohort data with a high response rate.

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• The data allowed for the analysis of the independent effects of employment status and depression after controlling for sociodemographic and health factors.
• The limitations were as follows: Self-reported health and mental health measures; different measures of financial hardship/difficulty utilized in wave 1; the findings come from a community sample and require further research to confirm the generalizability for a national sample; lack of data on duration of un/under-employment.

Introduction

Understanding the relationship between social factors and mental health has long been of interest for mental health service providers and, social and economic policy. It has been well established that those who are not employed, or those who are unable obtain “good quality” employment, are at significant risk for poor mental and physical health.[1-5] Research has identified a number of pathways through which unemployment may be related to poorer mental health outcomes, including a disruption to daily routine, lower self-esteem, adoption of health-threatening coping behaviours, and a higher level of stress.[6] This has been further clarified through the identification of the protective mechanisms inherent in obtaining gainful employment. Employment fulfils material and psychological needs such as financial security, social inclusion, and encourages regular social and mental activity.[7] However, recent literature has also highlighted that jobs that are perceived as unsatisfying, stressful and offer little autonomy do not always protect physical and mental health, and have been associated with comparable health outcomes as unemployment.[8 9]

Theory and research evidence suggests that the effects of unemployment on depressive symptomatology may be mediated by financial hardship and the related psychological experience of poor personal control over one’s life.[4 10] The focus of this paper is to investigate the extent that financial hardship and a sense of personal control may mediate the relationship between employment status and depression, after taking into account other relevant social and physical factors.[11] Of particular interest is to compare the experience of underemployment and unemployment with fulltime employment, not just
between groups but also considering within-person change. Research thus far has demonstrated that underemployment is typically associated with lower levels of health and wellbeing.[12-14] Therefore, failure to account for this group could lead to an underestimation of the harmful effects seen in inadequate employment settings, or could fail to identify beneficial effects of even minimal employment compared to no employment at all.

Financial loss is an inevitable outcome of unemployment.[15] Measures of financial hardship or deprivation usually assess whether people are unable to provide basic necessities for themselves, their family or other dependents due to a lack of resources.[1 16] Over a seven year period, Lorant and colleagues[17] showed that subjective financial strain and high scores on the deprivation index were associated with increases in both depressive symptoms and incidence of major depression across annual waves. The study found that changes in income or employment were less strongly associated with changes in depressive symptoms or major depression than poverty and hardship measures.[17] These findings have been demonstrated amongst other groups, including: families,[18] adults,[19 20] single mothers,[21 22] and among young unemployed persons.[23] Financial hardship is thus considered to be one of the main pathways through which employment status affects depression.

This is consistent with the neo-material perspective, which argues that indices of deprivation such as owning a car or a house should be incorporated into research on the social epidemiology of psychiatric disorders.[11] Neo-material scholars argue that it is the material risk and lack of protective factors linked to poverty – such as, poor housing, poor diet, drugs, environmental and workplace hazards, lack of access to healthcare – that determine most social inequalities in health.[11 24] In contrast, the psychosocial theoretical perspective argues that financial hardship affects overall mental health through undermining an individual’s sense of mastery, which in turn renders an individual more vulnerable to
depression.[25 26] This psychological approach emphasizes individuals’ perceptions of their relative standing in the income distribution and perceived stress to explain the social gradient in mental health.[11 24]

Mastery is commonly used as a measure of control, defined by Pearlin and Schooler[27] as the perception that events are under one’s own personal control, rather than under the control of external forces. Financial hardship or strain is typically considered to contribute to low mastery through providing a sense that there is great difficulty in changing circumstances in major domains of life,[28] as well as actual control over one’s life (i.e. choice over what neighbourhood to live in or payment for medical treatment).[29] It is thus hypothesized that that lower socioeconomic status imbues an individual with a sense that they experience relative disadvantage.[25 29] However, not all individuals who are exposed to stressors or financial hardship experience deterioration in physical and psychological functioning.[30 31] Research has shown that a sense of mastery can both directly reduce psychological distress and can also act as a buffer against deleterious effects of stressful life events,[32 33] such as poor physical health;[33] and economic hardship.[32 33]

Similarly, high levels social support are also thought to ‘buffer’ or mitigate the effects of stressful life events on mental health.[34] Unemployed individuals who experience greater social connectedness may perceive unemployed induced stressors to be more manageable, protecting declines in mental health.[35] Though social support might attenuate the effects of stress and financial hardship on mental health, those who are of low socio-economic status or who are unemployed typically report lower social support levels.[36 37] Furthermore, research has demonstrated that not only does social support confer resilience to stress, but that unemployment stress is actually exacerbated by low levels of social support.[38]

The current study seeks to explore the relationship between employment circumstances and mental health in one cohort followed across eight years and three waves of
data. Compared with much of the previous research in this area, this study will incorporate a
category of “underemployment” in addition to unemployment, and those who are “Not in the
labour force” (NILF), and an employed category. Specifically, the study seeks to measure the
extent to which a sense of mastery, financial hardship and social support mediate the
relationship between employment status and depression, after taking into account potential
confounding socio-demographic and health factors.

Method

Data source and sample

The data used for this analysis are from the Personality and Total Health (PATH) Through Life Project. PATH follows three cohorts of respondents from Canberra and the
neighbouring town of Queanbeyan (initial interviews conducted between 1999 and 2001),
and assesses the health and wellbeing. The sampling frame was the electoral roll (registration
on the electoral roll is compulsory for Australian citizens over the age of 18 years), and the
initial participation rate was 56.6%. Three waves of data were collected with 4 year intervals
between each wave. All respondents were sent a letter outlining the purpose of the research
and, if they were willing to participate, they were then interviewed by a professionally trained
interviewer. The wave to wave response rate for this sample at each wave of subsequent data
collection was 89% (Wave 2) and 82% (Wave 3). Participants who did not respond at one
wave may still return for a later wave. The Human Research Ethics Committee of The
Australian National University approved the study protocol. Further details of the survey
including the sampling procedure are reported elsewhere.[39] The current study is restricted
to the youngest PATH cohort (birth years: 1975 – 1979) who were aged 20 to 24 years at the
initial interview. This resulted in a total possible sample of 2404 participants.
Survey Procedure

Participants completed the questionnaire on a laptop computer. An interviewer took each participant through the first set of questions, demonstrating how to enter responses into the personal computer. The interviewer conducted physical and cognitive tests. The components of the questionnaire relevant to the present study are outlined below. Unless stated otherwise, measures were collected at each wave.

Measures

▪ Depression

The outcome measure analysed in this study was the Goldberg Depression Scale,[40] a nine-item scale measuring experience of a particular symptom of depression (e.g., loss of weight, lack of energy) in the prior four weeks. Total scores for depression are calculated by summing the number of items endorsed providing a continuous score of 0 to 9. We drew upon the results of previous research assessing the validity of The Goldberg Depression Scales to identify an appropriate cut point to classify likely depression in this study.[41] This previous research, also based upon PATH data, assessed depressive episodes according to the International Classification of Diseases (ICD-10) using the World Health Organisation (WHO) Composite International Diagnostic Interview (CIDI) as criterion. The results showed high concordance between scores on the Goldberg Depression Scale and depression diagnosis, and good discrimination between cases and non-cases. The analysis supported the use of a score of seven or greater on the Goldberg Depression Scale to indicate the presence of likely depression (1). For this analysis, therefore, the total score was dichotomized so that a score of seven or greater indicated the presence of likely depression (1), and below seven represented no depression (0). For ease of reading we often use the term ‘depression’ through this report, but acknowledge this is more accurately defined as ‘likely depression’.

▪ Mastery, Financial Hardship/Difficulty and Social Support
Mastery was measured by Pearlin’s Mastery Scale,[27] which is a seven-item scale used to assess the degree to which individual’s believe that their life is under their control by indicating the degree to which they agree or disagree with statements such as ‘There is really no way I can solve problems I have’ or, ‘I have little control over the things that happen to me.’ Scores range from 7 to 28, with higher scores indicating higher mastery. Although a cut-off point has not been established, generally, a score of 21 or less indicates the likelihood that one perceives that their life is directed by forces outside of their control.[42] Therefore this measure was dichotomised accordingly.

Financial hardship assessed four core components of objective deprivation drawn from the Australian Household Expenditure Survey.[43] The questions pertaining to financial strain asked participants the following: Over the past year have the following happened to you because you were short of money – 1) pawned or sold something 2) went without meals, 3) unable to heat home, 4) asked for help from welfare/community organisations. Participants endorsing one or more of these items were categorised as experiencing financial strain. The hardship items were not included in Wave 1, instead a measure of financial difficulty was utilized which asked participants if they had gone without things they really needed in the last year because they were short of money. Participants who answered “yes, sometimes” and “yes often” were categorised as experiencing financial strain. While this does not constitute an objective measure of deprivation, it allows comparison of the association of depression with financial circumstances.

Finally, a social support measure that assessed the level of positive social supports from friends and family (high versus low) and conflict from friends and family (high versus low) was included. These interactions were assessed using two sets of five items, each applied to both friend and family relationships.[44] These measures were dichotomized at the 50th percentile, with the bottom 50% representing low positive social support and the top
50% representing high positive social support from family and friends, and the reverse for negative social support – the bottom 50% representing high conflict and the top 50% representing low conflict.

- Employment status and covariates

  Based on participants’ reports, employment status was categorised as ‘fulltime/part-time employed’, ‘part-time employed but looking for full-time employment’, ‘unemployed’ and, ‘not in the labour force’ (NILF). Other demographic, social and physical measures that were utilized as covariates for the analyses included: gender, age, years of education, marital/partner status, any dependent children, physical health and social support (friends and family). Marital status was categorised into ‘cohabiting relationship’, i.e. married or defacto, ‘divorced/separated/widowed’ and ‘never married’. Education was categorised into ‘finished Year 12’ and ‘not finished Year 12’. Participants were categorised into “have at least one dependent child” and “no children”. Physical health was measured using the 12-Item Short Form Health Survey [SF-12; 45] with higher scores indicating better health. As the SF-12 measure is not a key variable and our preliminary analysis showed a linear relationship with the measure of depression, this was included in the model as a continuous variable

  Statistical analyses

  Descriptive statistics of the socio-demographic and economic circumstances of the respondents were calculated by gender and age. Simple logistic regression was then utilized to assess the association of depression with the demographic and socio-economic characteristics. Eight separate longitudinal random intercept multivariable logistic regression models were used to examine predictors of depression for individuals who were unemployed, PTLFT, NILF and employed. Moderating variables included social support, financial hardship/deprivation and a sense of personal control. Covariates included age, gender, marital status, physical health, and dependent children. Finally, the ‘explained fraction’ approach[46]
was used to calculate the proportion of the relationship between employment status and depression that was explained by important mediating variables (i.e. financial hardship, mastery, social support and the socio-demographic variables). The change in odds ratios for the unemployed and PTLFT work were quantified by calculating the percent reduction in odds ratios after the addition of the key mediating variables. This was calculated by contrasting the OR of the model before (ORa) (Model 3) with the OR after (ORb) (Models 4, 5, 6 and 7) each of the mediating variables were added by applying the following formula:

\[
\frac{(\text{OR}_a - 1) - (\text{OR}_b - 1)}{\text{OR}_a - 1}
\]

Most participants (n = 6521) had complete data at both baseline and follow-up. In wave 2, 265 participants (11%) had dropped out of the survey, and 426 participants (17%) had dropped out by wave 3. Cases with missing data were minimal (ranging from 0 to 1.1% for individual items). The statistical models used all available data; those with missing data were excluded. Previous sensitivity analysis conducted on the data by Butterworth et al.[1] showed that attrition was not independently associated with depression, but was associated with being male, not participating in the labour force (although not unemployment), poorer physical functioning, lower levels of educational attainment and not having a spouse/partner.

**Results**

Table 5.1 presents descriptive data on the respondents across wave 1, 2 and 3 by gender. Unemployment rates were highest at wave 1 (ages 20-24 years) and declined across the following two waves (ages 24-28 and 28-32 years). Table 5.2 demonstrated the univariate relationships between the measure of depression and a number of socio-demographic, economic and psychological measures. Around a fifth of respondents who were unemployed were classified with likely depression, compared to only 9% of those who were employed. The prevalence of depression amongst the “underemployed” was also nearly double of the prevalence rates of those who were employed at 17%. The odds ratios for both
unemployment and PTLFT indicated a greater likelihood of depression (OR = 2.35; OR = 1.80) compared to employed. Experiencing financial hardship (OR = 2.50) and a low sense of mastery (OR = 5.82) each demonstrated a strong association with depression.

**Table 5.1.** Descriptive statistics reporting health, socio-economic, demographic and psychosocial characteristics of respondents across the three waves.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>1162</td>
<td>1242</td>
<td>1013</td>
</tr>
<tr>
<td>Employment status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Employed</td>
<td>81.24</td>
<td>79.22</td>
<td>89.72</td>
</tr>
<tr>
<td>- Unemployed</td>
<td>6.74</td>
<td>5.11</td>
<td>4.25</td>
</tr>
<tr>
<td>- PT looking FT</td>
<td>4.58</td>
<td>4.79</td>
<td>2.08</td>
</tr>
<tr>
<td>- NILF</td>
<td>7.43</td>
<td>10.88</td>
<td>3.95</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Married</td>
<td>18.58</td>
<td>27.84</td>
<td>22.04</td>
</tr>
<tr>
<td>- Never married</td>
<td>81.16</td>
<td>70.45</td>
<td>76.19</td>
</tr>
<tr>
<td></td>
<td>.26</td>
<td>1.70</td>
<td>1.78</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Did not finish Year 12</td>
<td>7.78</td>
<td>7.39</td>
<td>5.64</td>
</tr>
<tr>
<td>Dependent Children (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Have dependent children</td>
<td>6.23</td>
<td>13.88</td>
<td>15.91</td>
</tr>
<tr>
<td>Physical health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- RAND SF12 (mean score &amp; sd)</td>
<td>52.31</td>
<td>50.81</td>
<td>52.36</td>
</tr>
<tr>
<td>Financial Difficulty (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Facing financial difficulty sometimes or often (w1), experience hardship (w2 + w3)³</td>
<td>24.35</td>
<td>30.24</td>
<td>15.61</td>
</tr>
<tr>
<td>Mastery (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Low sense of mastery score (Pearlin’s scale)</td>
<td>33.94</td>
<td>40.86</td>
<td>35.98</td>
</tr>
<tr>
<td>Depression (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- High score (indicating clinical depression)</td>
<td>7.19</td>
<td>12.27</td>
<td>9.80</td>
</tr>
</tbody>
</table>

³w1 = wave1, w2 = wave 2, w3 = wave 3
Table 5.2. Prevalence of depression and univariate relationship between depression and various socio-economic, demographic and psychological measures.

<table>
<thead>
<tr>
<th>Current Depression (%)</th>
<th>Univariate Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment status</td>
<td></td>
</tr>
<tr>
<td>- Employed</td>
<td>9</td>
</tr>
<tr>
<td>- Unemployed</td>
<td>21</td>
</tr>
<tr>
<td>- PT looking FT</td>
<td>17</td>
</tr>
<tr>
<td>- NILF</td>
<td>17</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>9</td>
</tr>
<tr>
<td>- Female</td>
<td>12</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>- Married</td>
<td>8</td>
</tr>
<tr>
<td>- Never married</td>
<td>11</td>
</tr>
<tr>
<td>- Divorced/Separated/Widowed</td>
<td>23</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>- Finished Year 12</td>
<td>10</td>
</tr>
<tr>
<td>- Did not finish Year 12</td>
<td>18</td>
</tr>
<tr>
<td>Dependent Children</td>
<td></td>
</tr>
<tr>
<td>- No children</td>
<td>10</td>
</tr>
<tr>
<td>- Have dependent Children</td>
<td>12</td>
</tr>
<tr>
<td>Physical health</td>
<td></td>
</tr>
<tr>
<td>- RAND SF12</td>
<td>9.1 (.91 – .93)</td>
</tr>
<tr>
<td>Financial Difficulty/Hardship</td>
<td></td>
</tr>
<tr>
<td>- No</td>
<td>8</td>
</tr>
<tr>
<td>- Yes</td>
<td>21</td>
</tr>
<tr>
<td>Mastery</td>
<td></td>
</tr>
<tr>
<td>- High</td>
<td>4</td>
</tr>
<tr>
<td>- Low</td>
<td>21</td>
</tr>
<tr>
<td>Social support friends (positive)</td>
<td></td>
</tr>
<tr>
<td>- Low</td>
<td>14</td>
</tr>
<tr>
<td>- High</td>
<td>7</td>
</tr>
<tr>
<td>Social support family (positive)</td>
<td></td>
</tr>
<tr>
<td>- Low</td>
<td>16</td>
</tr>
<tr>
<td>- High</td>
<td>8</td>
</tr>
<tr>
<td>Social support friends (conflict)</td>
<td></td>
</tr>
<tr>
<td>- Low</td>
<td>7</td>
</tr>
<tr>
<td>- High</td>
<td>12</td>
</tr>
<tr>
<td>Social support family (conflict)</td>
<td></td>
</tr>
<tr>
<td>- Low</td>
<td>7</td>
</tr>
<tr>
<td>- High</td>
<td>12</td>
</tr>
<tr>
<td>Age/Wave</td>
<td></td>
</tr>
<tr>
<td>- Wave 1 (20-24yrs)</td>
<td>10</td>
</tr>
<tr>
<td>- Wave 2 (24-28yrs)</td>
<td>11</td>
</tr>
<tr>
<td>- Wave 3 (28-32yrs)</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 5.3 presents a series of separate multivariate logistic regression models conducted to examine the association between employment circumstance and depression, while controlling for a number of demographic, physical health, socio-economic and psychological variables.

Model 1 demonstrated that the association between unemployment and depression remained significant (OR = 2.40) after controlling for gender. There was also an association between PTLFT and depression (OR = 1.79). In model 2, when age is incorporated into the model, the odds ratios of both unemployment and PTLFT work increased (OR = 2.49; OR = 1.89). Model 3 demonstrates that this association between unemployment and depression (OR = 2.13), and PTLFT and depression (OR = 1.75), remained significant after controlling for all the covariates. In addition to the experience of unemployment and PTLFT employment, being separated/divorced or never being married, lower physical function, not having finished Year 12, aged 24 – 28 years, and being female all showed an independent association with depression.

The next three models consider the role of key explanatory covariates. Model 4 included the social support measures (family and friends). These measures did not appear to impact the association between PTLFT employment and depression which remained significant at (OR = 1.75), while the association between unemployment and depression decreased but remained significant (OR = 1.91). Low positive family, low positive friend, and high negative friend support were all associated with increased odds of having depression.

Model 5 included a measure of financial hardship, which was associated with over double the odds of depression (OR = 2.17). After controlling for financial difficulty, the odds ratio between unemployment and depression, and between PTLFT employment and depression, decreased but both remained significant (OR = 1.88; OR = 1.62). Model 6 incorporated Pearlin’s measure of Mastery. After controlling for sense of mastery, the association between
unemployment and depression decreased but remained significant (OR = 1.80). Similar to Model 4, accounting for the measure of mastery did not impact the association of depression with PTLFT (OR = 1.73). In Model 7, both mastery and financial hardship were included in the model. This saw a further reduction in the odds ratio between depression and unemployment (OR = 1.64) and between depression and PTLFT (OR = 1.60).

Model 8 incorporated all the variables. The odds of depression when unemployed decreased further (OR = 1.55) when compared to being employed, while the association between depression and PTLFT remained largely unchanged. Having a low sense of personal control over one’s life showed the highest odds of depression.

Finally, Table 5.4 quantifies the change in odds ratios for the unemployed and PTLFT work following the addition of key mediating variables. For example, the explained fraction showed 51% of the difference between unemployed and employed individuals in the prevalence of depression was explained by the socio-demographic, social support, mastery and financial hardship measures, compared to only 21% of the difference between PTLFT and employed individuals. Considered separately, the inclusion of financial hardship accounted for 28% and 17% of the association of depression with unemployment and PTLFT work respectively. While the mastery and social support measures also mediated the relationship between unemployment and depression, they explained little of the association between PTLFT and depression.
Table 5. Results of a multivariable logistic regression analyses for predictors of depression

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour-force status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(reference: employed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time looking</td>
<td>1.79 (1.19 -</td>
<td>1.89 (1.25 -</td>
<td>1.75 (1.13 -</td>
<td>1.75 (1.12 -</td>
<td>1.62 (1.04 -</td>
<td>1.73 (1.10 -</td>
<td>1.60 (1.01 -</td>
<td>1.59 (1.00 -</td>
</tr>
<tr>
<td>for full-time work</td>
<td>2.70)</td>
<td>2.87)</td>
<td>2.70)</td>
<td>2.74)</td>
<td>2.52)</td>
<td>2.71)</td>
<td>2.53)</td>
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<td>1.06 (0.86 -</td>
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<td>Dependent children</td>
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<td>1.08 (0.84 -</td>
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<td>1.05 (0.81 -</td>
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<td>1.43 (1.14 -</td>
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<td>1.41 (1.12 -</td>
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<td></td>
<td>3.29 (2.18 - 4.97)</td>
<td>3.12 (2.04 - 4.76)</td>
<td>3.07 (2.03 - 4.65)</td>
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<td>2.96 (1.92 - 4.49)</td>
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<td>.93 (0.92 - .94)</td>
<td>.93 (0.92 - .94)</td>
<td>.93 (0.92 - .94)</td>
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<td>1.26 (0.89 - 1.79)</td>
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<td></td>
<td>1.32 (1.09 - 1.60)</td>
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<tr>
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<td></td>
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<td>1.59 (1.27 - 1.82)</td>
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<td>High conflict/mental support</td>
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<td>1.32 (1.05 - 1.69)</td>
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<tr>
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<td></td>
<td></td>
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<td>1.99 (1.62 - 2.45)</td>
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<td>4.57 (3.74 - 4.25)</td>
<td>4.05 (3.30 - 4.98)</td>
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Table 5.4. Percentage of difference between unemployed (and PTLFT) and employed persons in the prevalence of depression

<table>
<thead>
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<th>Mediating Variable</th>
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<th>PTLFT vs Employed</th>
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</thead>
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<tr>
<td>Social support only</td>
<td>19</td>
<td>Social support only</td>
</tr>
<tr>
<td>Financial Hardship only</td>
<td>22</td>
<td>Financial Hardship only</td>
</tr>
<tr>
<td>Mastery only</td>
<td>29</td>
<td>Mastery only</td>
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<tr>
<td>Social support, financial hardship, mastery</td>
<td>51</td>
<td>Social support, financial hardship, mastery</td>
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</tbody>
</table>

Discussion

This study examined employment status and its association with depression in one cohort from the PATH study across three waves, taking into account both unemployed and “underemployment”. While this study did not directly seek to evaluate the psychological theories of unemployment, it did assess two key factors thought to mediate the effects of employment status: a sense of personal control and financial hardship. The multivariate logistic regression models confirmed that both underemployment and unemployment were associated with increased risk of depression compared to being employed after controlling for all other measures, including educational attainment, marital status, dependent children, and gender. A key finding of this study was the increased risk of depression that under-employment infers, which supports previous research.[13] However, the odds of depression for the PTLFT compared to the employed group remained largely unaffected by the inclusion of covariates across the different models, except for age and financial hardship. After accounting for all variables the odds of depression for underemployment (OR = 1.59) was comparable to the odds of depression for unemployment (OR = 1.55).
Another key study finding is that social support, financial hardship and a sense of personal control are all important determinants of the association between unemployment and depression. This is consistent with theories that posit that mental health is enhanced by both the manifest (e.g., direct financial) and latent (e.g., interpersonal and psychological) benefits that arise from work.[47 48] The increased risk of financial hardship and deprivation is a salient characteristic in the experience of unemployment. Financial hardship may influence mental health by limiting the capacity of unemployed individuals to fully participate in the generally accepted standards of society.[15] As such, hardship may be conceptualised as analogous to the psychological aspects of unemployment, reducing one’s sense of personal control over the future and perceived opportunities. The association between unemployment and depression was also moderated by levels of support from family and friends. Social support may influence how unemployed people respond to their situation and their capacity to deal with it, providing a ‘buffer’ from the negative effects of unemployment.[49] For some individuals, limited social support from friends and family may be compensated by social connections in the workplace. For such individuals, the impact of job loss may be greater.

While the PTLFT group also showed poorer mental health than those otherwise employed, the current findings showed a distinct set of moderating factors. Importantly, the pattern of results observed for this group also lend support for the distinction between latent and manifest benefits of work. Evidence that social support and a sense of personal control were not important mediators of the association between PTLFT status and depression suggests that even inadequate levels of employment may provide individuals with some access to these latent benefits. In contrast, hardship was identified as a significant mediator of this association, suggesting that the inadequate
remuneration associated with underemployment is a determinant of the poorer mental health of those who are seeking increased working hours.

**Strengths and Limitations**

There are a number of strengths associated with this study and the use of the PATH dataset. The large sample size, random selection from the population, and longitudinal design contribute to the high statistical power and limited sampling bias.[39] Furthermore, the study design, following respondents initially aged in their early 20s over 8 years, focuses our attention on the consequences of employment for a key age group. However, this study has a number of limitations. Most notably were the different measures used for financial hardship, whereby the measure for the first wave was a subjective measure of financial difficulty, and the measure for the second and third wave sought to provide a more objective measure of hardship. As per the study conducted by Butterworth and colleagues[1] using these different measures, each was strongly associated with depression, were strongly interrelated, and did not differ significantly in prevalence rates. Another potential limitation was the use of “part-time employed, looking for full-time work” as a marker of underemployment. Without further information around hours, quality and stability of the part-time work the respondents in this group may be quite heterogeneous in terms of social and economic circumstances. This is beyond the scope of the current project, but is an important topic for future research. Finally, another potential limitation is that participants drawn from the Canberra/Queanbeyan region may not be representative of the broader Australian population due to relatively higher levels of educational attainment and higher socio-economic status. Therefore it is important that this research is replicated at a national level.
Implications for policy and practice

These findings sit within the broader research field in seeking to understand the mechanisms through which employment status contributes to mental health outcomes, and has clinical and social policy relevance. In the face of unemployment and financial hardship, having a low sense of mastery is likely to strongly increase the risk of depression in comparison to those individuals who are able to maintain a sense of personal control over their life.[4 50 51] Those with a high sense of mastery, may be able to adopt positive coping strategies, such as focusing on the employment situation that is amenable to change, or implementing a problem-solving approach.[50 52] Policy and clinical programs that seek to encourage social inclusion and workforce participation should focus on providing experiences for mastery, as well as access to social relationships, which are both seemingly constrained when facing unemployment.[53] The findings support the continuation of interventions to assist people with mental health problems to find and sustain employment, but they also suggests that a focus is on underemployment is needed to prevent mental health problems.

Conclusion

This study shows that the effects of unemployment and underemployment on depression are not completely explained by socio-demographic, -economic and psychosocial factors. There is something unique about the experience of inadequate employment that contributes to poorer mental health over and above financial hardship and a loss of personal control over one’s life. However, it should also be noted that unemployment does not automatically equate with poor mental health. Rather, unemployment in comparison to employment increases the risk of experiencing the conditions that contribute to and perpetuate psychological distress, i.e. relative poverty, financial stress, loss of personal control and autonomy, poor social support. In order to
apply this research on a national level, these results need to be replicated using longitudinal data collected from all around Australia. Further research should consider the effect that protracted unemployed periods might have on an individual’s mental health, and how mastery and financial hardship might moderate this experience. Looking specifically at welfare receipt and the job search experience may also elucidate some of the unique experiences that contribute to the poor mental health of the unemployed. However, it is clear that research needs to recognise the heterogeneous effects of different types of inadequate employment. Research should seek to more comprehensively define employment states, such underemployment and the length of time an individual is unemployed, to fully understand the role that employment can play in protecting or reducing an individual’s mental health.

**Acknowledgements:**

Thank you to the study participants, PATH Interviewers, Karen Maxwell and Trish Jacomb; and to the current PATH Chief Investigators: Kaarin Anstey, Helen Christensen, Anthony Jorm, Bryan Rodgers, Andrew Mackinnon, Simon Easteal and Nicolas Cherbuin.

**Contributors**

LC and PB were both involved in the conception and design of the study. LC conducted the primary statistical analysis and drafted the manuscript, under the supervision of PB. PB provided statistical expertise and revision of the manuscript. Both approve and take responsibility for the final manuscript.

**Funding**

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Competing Interests

None declared

Data Sharing

Data for the study is from the PATH Through Life 20s cohort. Further information including a list of publications is available at http://crahw.anu.edu.au/research/projects/personality-total-health-path-through-life.

There is no open access to the data set, but strategic collaborations are welcome and contact information is available on the website for interested parties to learn more about formal application procedures.

References


Chapter Six
Study 2

Financial hardship, mastery and social support: Explaining poor mental health amongst the inadequately employed using data from the HILDA Survey.

Running head: Mental health and inadequate employment

Laura Crowe\textsuperscript{6}, Peter Butterworth\textsuperscript{7-9}, and Liana Leach\textsuperscript{10}

Corresponding author: Laura Crowe, Research School of Psychology, The Australian National University, Canberra, ACT 2601, Australia. e-mail: Laura.Crowe@anu.edu.au

Abstract

OBJECTIVE: This study analysed data from the Household Income and Labour Dynamics in Australia (HILDA) Survey to examine the relationship between employment status and mental health, and the mediating effects of financial hardship, mastery and social support. In addition, the study sought to explore the effects of duration of unemployment on mental health.

METHODS: The primary analysis used three waves of data from the HILDA Survey with 4965 young adult respondents. Longitudinal population-averaged logistic regression models assessed the association of employment status and mental health, including the contribution of mastery, financial hardship and social support in explaining this association between employment groups (unemployed v. employed; under employed v. employed). Sensitivity analyses utilised a fixed-effects approach and also considered the full-range of working-age respondents. Regression analysis was used to explore the effect of duration of unemployment on mental health.

RESULTS: Respondents’ who identified as unemployed or underemployed were at higher risk of poor mental health outcomes when compared to their employed counterparts. This association was ameliorated when accounting for mastery, financial hardship and social support for the unemployed, and was fully mediated for the underemployed. The fixed-effects models showed the transition to unemployment was associated with a decline in mental health and that mastery in particular contributed to that change. The same results were found with a broader age range of respondents. Finally, the relationship between duration of unemployment and mental health was not linear, with mental health showing marked decline across the first 9 weeks of unemployment.

CONCLUSIONS AND IMPLICATIONS: Mastery, social support and financial hardship are important factors in understanding the association of poor mental health with both unemployment and underemployment. Furthermore, the results suggest that the most deleterious effects on mental health may occur in the first two months of unemployment before plateauing. In order to prevent deterioration in mental health, these findings suggest intervention should commence immediately following job loss.

Keywords: Unemployment, depression, financial hardship, epidemiology, mastery

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\textsuperscript{9} Centre for Research on Ageing, Health and Wellbeing; Research School of Population Health; The Australian National University, Australia
\textsuperscript{10} L. Leach, Research School of Population Health, Centre for Research on Ageing, Health and Wellbeing, Australian National University, Australia
Introduction

Individuals who lose their jobs, or have never been gainfully employed, are at greater risk of poorer mental health compared to their employed counterparts (Creed, Machin, & Hicks, 1996). This finding is now well documented, evidenced by a numerous studies since the Great Depression of the 1930s (i.e., Eisenberg & Lazarsfeld, 1938; Jahoda, 1982; Mckenna & Fryer, 1984; Paul & Moser, 2009). Furthermore, by controlling for a number of comprehensive socio-economic and demographic variables, recent studies have minimised the potential bias attributable to health selection (i.e., that selection into unemployment is based on a history of poor mental health; Murphy & Athanasou, 1999; Thomas, Benzeval, & Stansfeld, 2005). Emerging evidence suggests that, like those who are unemployed, those who are underemployed might also be at greater risk of poor mental health. Rates of unemployment may be masked by high rates of underemployment, as some adults may be prone to cycling between unemployment and underemployment, rarely transitioning into full-time secure and good quality employment (Leach et al., 2010). Unsurprisingly, this “cycle of disadvantage” can have long-term mental health and economic consequences (Leach et al., 2010; Olesen et al., 2013). Furthermore, particularly for young adults, working is vital for establishing independence and a sense of personal identity (Winefield, Tiggemann, Winefield, & Goldney, 1991). Even a short period of unemployment for young adults could precipitate a series of events that can affect a broad range of outcomes far into the future – from health status, to future income earnings, blood pressure, and even low birthweight of future children (Adler & Newman, 2002). Thus, as gainful employment represents an important protective factor for maintaining good mental health, it is reasonable to hypothesise that both unemployment and underemployment are associated with a loss of those protective factors which promote good mental health.

There is still conflicting evidence as to whether the degree of negative mental health outcomes experienced by the underemployed is similar to that experienced by the
unemployed (Friedland & Price, 2003; Monfort, Howe, Nettles, & Weihs, 2015).

Underemployment has been conceptualised in many ways including involuntary part-time employment (Dooley & Prause, 2004), insufficient income or wages (Eamon & Wu, 2011), and subjective job fitness (Creed, Lehmann, & Hood, 2009; Monfort et al., 2015). The question of whether inadequate employment is better for mental health than no employment at all is still not confirmed, although some studies have suggested that poor quality work can be as harmful as the unemployment experience (Broom et al., 2006; Butterworth et al., 2011). Indeed, underemployment itself may represent a barrier for individuals in reaping the positive benefits typically attributed to employment. Therefore, understanding the mechanisms through which unemployment and underemployment affect mental health is essential for targeting intervention and social policy. Three key variables that have been identified as playing a role in explaining the association between employment status and poor mental health are financial hardship, a sense of mastery, and social support (Butterworth, Olesen, & Leach, 2012; Creed & Bartrum, 2008; Creed & Moore, 2006). The current study builds upon this previous research, including our recent work considering how employment status influences the mental health of a cohort of young adults in Canberra, Australia (Crowe & Butterworth, 2015). Understanding the roles played by these factors might offer a leverage point for intervention, to help limit the negative mental health impacts of both unemployment and underemployment. This may particularly be the case in young adults who are more susceptible than older age groups to unemployment, underemployment, and poor mental health, and are, therefore, a key group for interventions which target modifiable risk factors (Fergusson, Horwood, & Woodward, 2001; Orygen Youth Health Research Centre, 2014).

Financial hardship

In both epidemiological and psychological studies, financial strain has been demonstrated to be robustly and independently associated with depression (Butterworth,
Financial hardship is generally conceptualised as the lack of money or resources required to meet basic needs for one’s life – food, clothing, shelter, and medical care (Richardson, Lester, & Zhang, 2012). While there is yet to be a universally agreed upon definition of financial hardship, studies have utilised a variety of different measures including: inability to heat one’s home, no access to a car, debt, having utilities cancelled or being unable to pay utility bills on time, having to sell possessions, missing meals, or needing to ask community organisations for help. Furthermore, Butterworth et al. (2012) showed that multiple markers of hardship were associated with almost a doubling in the odds of depression over the experience of just one marker of hardship. Kiely and colleagues (2015) examined the temporal association between financial hardship and poor mental health. The study showed that, while an individual’s vulnerability to experiencing financial hardship was associated with a great risk of mental health problems, these problems were exacerbated by occasions of when they did experience hardship (Kiely et al., 2015). The experience of financial hardship may play an important role in the development and maintenance of depression, but equally, mental health difficulties may hinder educational and employment opportunities that increase the chances of experiencing financial hardship (Mirowsky & Ross, 2001). Neo-materialists argue that depression is a direct result of an accumulation of lower living standards and poorer access to resources (Townsend, Whitehead, & Davidson, 1992), including poor housing (Evans, Wells, & Moch, 2003) or poor health knowledge. This argument is consistent with the notion that experiences of unemployment and underemployment are associated with greater financial hardship, which partially explains the association between these employment states and poor mental health.
Mastery

From a psychosocial viewpoint, the loss of employment or inadequate employment and the associated series of negative economic and personal events may lead an individual to feel a lack of control and/or marginalized from society. It is argued that these feelings of low personal control result in depression or an absence of hope (Price, Choi, & Vinokur, 2002; Price, Friedland, Choi, & Caplan, 1998). Maintaining a sense of control in the face of adversity has been found to aid in the coping ability of individuals and in personal functioning (Mirowsky & Ross, 2001). Research has frequently demonstrated a low sense of mastery in those who are unemployed (Creed & Bartrum, 2008; Dollard & Winefield, 2002; Vinokur & Schul, 1997), as a characteristic that perhaps contributed to becoming unemployment in the first place, but also as a characteristic that can be reinforced by unemployment itself. It is reasonable to assume that several aspects of joblessness centre around a loss of control, ranging from symbolic reflections of an uncontrollable world that lead to unemployment, to specific experiences of financial hardship and being unable to make ends meet (i.e., paying the rent). Therefore, low feelings of control are likely to result in high levels of psychological distress. Arguably, strong feelings of personal control would help to moderate the negative effects of unemployment on wellbeing (Creed & Bartrum, 2008).

Social support

In addition to mastery, studies have shown that the sense of being connected can mitigate the negative effects of unemployment and financial hardship on psychological wellbeing (Dean, Carroll, & Yang, 2007; Mills, Grasmick, Morgan, & Wenk, 1992; Pittman & Lloyd, 1988). One mechanism through which social support is believed to reduce feelings of distress is through the increased availability of coping resources, which helps the individual to appraise the situation as less stressful and may aid in the inhibition of maladaptive responses (such as alcohol or drug use; Cohen & Wills, 1985; Fell & Hewstone,
However, unemployment itself often results in a decrement in social networks whereby individuals suffer a loss of contact with people outside the nuclear family (Jahoda, 1982). Furthermore, the financial losses faced in unemployment can restrict social activity, and this has been shown in studies demonstrating reduced activity and greater social isolation in the unemployed (Paul & Batinic, 2010; Underlid, 1996). So while social support may represent a protective factor in the experience of unemployment, it is likely that the unemployed will experience a decrease in this resource when they need it the most.

In previous research we investigated the association between employment status and (likely) depression and the mediating role of these three key factors, drawing on data from a cohort of young adults who were initially aged in their early 20s and followed over 8 years on three separate measurement occasions (Crowe & Butterworth, 2016). We found that social support, financial hardship and a sense of personal control (mastery) were all important mediators between unemployment and depression, while financial hardship explained much of the association between underemployment and depression. The current study seeks to replicate and extend this previous work. The previous study was restricted to respondents from one relatively advantaged geographic region of Australia. Therefore, replication using a broader, nationally representative population is essential. Further, the data used in the previous study lacked measures of other potentially important factors, such as length of unemployment.

**Duration of unemployment**

Another important characteristic of unemployment which is likely to play a role in how unemployment influences mental health, and has received relatively little attention in the literature to date, is unemployment duration. One might expect that mental health continues to deteriorate with time unemployed, based on the assumption that the longer one is unemployed the more likely they are to face financial strain and experience decreases in
sense of mastery. However, previous studies indicate there is not a ‘neat linear deterioration’ in mental health over the duration of unemployment (Dockery, 2006; Flatau, Galea, & Petridis, 2000). A recent study by Dockery (2006) has plotted the relationship between mental health and time unemployed across four waves of panel data, and concluded that the effect of unemployment on mental health is not a ‘monotonic one’. Further research is needed to understand how duration of unemployment affects the severity of poor mental health.

**Study Aims**

This study built upon the existing research literature to investigate the mediating role of financial hardship, poor social support, and a sense of personal control in the relationship between employment status (employed, unemployed and underemployed) and mental health in a cohort of young adults. It extends previous research by investigating the mediating roles of these three important factors concurrently in one set of analyses, additionally adjusting for a series of potential covariates, all within the context of a nationally representative dataset. While our focus is on young adults to match the sample of our previous study, the current analysis also tests the generalizability of these results through sensitivity analyses conducted over a wider age. In addition, the detail available in the current data provide a rare opportunity to explore how the duration of unemployment negatively affects mental health.

**Methods**

Data

The analyses were based on data from three waves of the Household, Income and Labour Dynamics in Australia (HILDA) survey. The HILDA survey is a nationally representative panel survey conducted annually since 2001 (Wooden & Watson, 2001). The HILDA Survey was approved by the Faculty of Business and Economics Human Research Ethics Committee at the University of Melbourne (Melbourne, Australia). The survey utilised a multi-stage sampling approach, sampling households within dwellings within a selection of
administrative areas. A total of 7,696 households 13,696 individuals (aged 15 and more) responded to the survey at Wave 1, with response rate of 66%. Our sample covers three waves of panel data (2003, 2004 and 2007); the waves in which measures of personal control were included. The sample consists of all individuals who completed the questionnaire that were aged 20 years to 34 years to best capture the young working adult group, with a pooled sample of 9,382 observations and 4,965 individuals. The study focused on the young adult group in order to capture a population moving through many life changes and transitions, including transitions around post-school education and employment. Furthermore, it is this age-group that is highly likely to experience inadequate employment states, as well as to report poorer mental health (Hammer, 1993; Fergusson, Howard, & Woodward, 2001).

Measures

Mental health

The primary dependent variable used in the analyses was the Mental Health Inventory (MHI-5), which is drawn from the SF-36 (Ware, Kosinski, & Keller, 1994). The SF-36 assesses functional health status and wellbeing, and measures eight distinct aspects of health. The MHI-5 consists of five items scored on a 5-point scale that assesses the frequency of anxiety and mood disturbance symptoms over the 4 week period preceding the interview. Previous research has indicated high level of comorbidity between depression and anxiety (Olesen et al., 2013); therefore, the measure was interpreted as a dimensional measure of these common mental health problems. Each item is summed and standardized so that the scale values range from 0 to 100 with low scores indicating poorer mental health. The mental health measure was dichotomised at a cut-off point of 50; with scores of 50 and below indicating poor mental health and those with scores higher than 50 indicating better mental health. Previous research has established the effectiveness of the MHI-5 as a screening tool for high-prevalence mental disorders in the community using this cut-point (Butterworth,
Crosier, & Rodgers, 2004; Kiely & Butterworth, 2014), demonstrating sound validity and reliability (Gill et al., 2006).

**Mastery, Financial Hardship and Social support**

A main focus of this study was on how an individual’s perceived sense of control, perceived financial hardship, and social support vary in relation to their employment status, and how this may explain their mental health. Personal control (or mastery) was assessed by Pearlin’s Mastery Scale (Pearlin & Schooler, 1978), which is a 7-item scale used to assess the degree to which individual’s believe that their life is under their control. Ordinarily this scale utilises a 4-point response scale; however, the measure included in the HILDA survey required participants to respond on a 7-point response scale. Therefore, the summed responses ranged from 7 to 49, with low scores indicating low mastery. These scores were rescaled to reflect a possible range from 7 to 28, thereby replicating the usual scores on this measure and permitting the application of the established cut-point (scores below 21) to denote a low sense of mastery as in previous research (Franks & Faux, 1990).

Financial hardship was measured by seven binary questions based on items originally from the Australian Bureau of Statistics Household Expenditure Survey (from the 1999 Survey of Living Standards Pilot), which assess objective indicators of hardship. The questions ask whether the following events had occurred in the past year due to a shortage of money: 1) Could not pay electricity, gas or telephone bills on time; 2) Could not pay the mortgage or rent on time; 3) Pawned or sold something; 4) Went without meals; 5) Was unable to heat home; 6) Asked for financial help from friends or family; and 7) Asked for help from welfare/community organisations. Participants endorsing one or more of these items were categorised as experiencing financial hardship.

Finally, a measure of social support was used to assess the perceived level of social support respondents received from their family and friends. The scale was derived by
summing responses to 10 questions (after reversing the negatively worded scores), such as: “People don’t come to visit as much as I would like; I don’t have anyone I can confide in; I seem to have a lot of friends”. High scores indicated greater perceived social support, and low scores indicated lower levels of perceived support. Previous research has shown the scale to have acceptable levels of reliability (Cronbach’s alpha of .79; Crosier, Butterworth, & Rodgers, 2007). To reduce scaling differences between binary and continuous predictors, the continuous social support scale was rescaled such that a one unit increase corresponded to the interquartile range (i.e., a difference between the 25th percentile and the 75th percentile).

Employment Status and Covariates

During each interview, respondents were asked about their current labour-force status as well as a number of other related questions. This information was used to categorise employment status into five main categories: employed part-time or full time; employed part-time but looking for full-time employment (PTLFT); unemployed; not in the labour force but marginally attached (NILF MA); and not in the labour force (NILF). Those who were considered PTLFT were identified by their endorsement of the following: currently part-time employed, preferred to work more hours, would choose to work more than 30 hours per week, and the main reason for working part-time did not include caring for children or preferring to work part-time hours. NILF refers to those who were voluntarily not attached to the labour force (e.g., home duties, studying or disability). Those who were categorised NILF MA were those who are only marginally attached to the labour force, i.e., “discouraged workers”. While, the NILF and NILF MA groups were not the focus of this analysis, they were retained in all analysis to control for these periods of non-participation.

The covariates included a number of demographic, physical and psychosocial variables. Demographics included age (categorised as 20-24, 25-29, and 30-34), marital status (married/defacto, never married, and separated/divorced/widowed), education (those
who had finished Year 12, and those who had not finished Year 12), dependent children (yes/no), and gender (male/female). Physical health was assessed by the physical functioning subscale from the SF-36. Scores were reversed so that higher scores indicate poorer health.

Duration of unemployment

The HILDA survey collected data on labour force status over the previous year, which enabled estimation of the duration of current unemployment. This calendar was used to calculate the number of weeks each unemployed respondent (N = 313) had been unemployed (ranging from 1 to 52+ weeks).

Statistical Analyses

The descriptive statistics of the key variables and covariates of the respondents were stratified by age and gender (Table 6.1). Table 6.2 presents univariate logistic regression models that examine the association between employment status, the other explanatory variables and depression.

Six separate longitudinal Generalized-Estimating Equation (population-average) multivariable logistic regression models were then used to examine the association of mental health with different categories of employment status: Employed (reference group), Unemployed, PTLFT, NILF MA and NILF (Table 6.3). Data were analysed using STATA using the ‘xtlogit’, pa function. This allowed for the analyses to adjust for both time-varying and time-invariant covariates. The robustness of the results were assessed using fixed-effects models to provide a more direct test of causal pathways, effectively controlling for time-invariant covariates and evaluating the association of change in mental health status with change in the covariates. It must be recognised, however, that as these models are restricted to respondents who demonstrate change in the binary (mental health) outcome and mental ill-health is a relatively uncommon status in the sample (around 11%), the power of the model will be reduced (e.g., the final GEE model comprised 3,965 respondents and 7,193
observations whereas the final fixed-effect model comprised 323 respondents and 831 observations). Each model adjusted for the covariates (as listed above), and then adjusted for the key mediating variables: social support, financial hardship, and mastery. The percent reduction in odds ratio amongst the unemployed (and PTLFT) compared to the employed category, following the addition of the mediating variables were calculated and can be seen in Table 6.4. The ‘explained fraction’ approach (Whitehead et al., 2000) is calculated by contrasting the OR before (ORb) and after (ORa) the addition of the key variables by applying the following formula: \( \frac{((\text{ORb} - 1) - (\text{ORa} - 1))/\text{ORb} - 1)}{\text{ORb} - 1} \) (see Crosier, Butterworth, & Rodgers, 2007).

Attrition rates are often a problem for panel data; however, in the case of the HILDA dataset the previous wave-retention rates for each wave were 90.4% (Wave 3), 91.6% (Wave 4) and 94.8% (Wave 7). Missing data for most of the variables were minimal, and any respondents with missing data were excluded. Given the analysis was restricted by the respondent’s age (20 – 34 years) in each wave (in contrast to a cohort design), some survey respondents were only in scope for some waves.

Table 6.5 reviews the temporal effect of unemployment (in weeks) on mental health (noting reverse score). The “lowess” function was utilised to create a smooth line through the timeplot/scatterplot to provide a visual representation between mental health and time unemployed, whereby high scores indicate poor mental health. This graph shows a likely turning point between 7 and 10 weeks. Piecewise regression was used to statistically evaluate this. By varying the “cut-point” the analyses identified at what point in weeks unemployed the slopes diverged. Week 9 was identified as the point at which the slopes diverged. Thus, weeks unemployed were assessed by two functions representing Time 1 (1 – 9 Weeks) and Time 2 (9 – 52 weeks).
Finally, the key analyses were repeated on a wider age range of respondents (aged 20 to 55 years). Results were consistent to those observed with the more restricted age range. The key findings from the Tables and Figure are available for the larger sample as supplementary online material.

**Results**

Descriptive characteristics of the sample are shown in Table 6.1, stratified by gender and age. Longitudinal data was collected from 9,382 respondents (48% men) across three years: 2003, 2004 and 2007. Respondents that were aged between 20 to 34 years during these years were included in the analysis. Rates of unemployment in the HILDA dataset mirrored national rates (ABS: 2015), with the highest rates of unemployment occurring in the youngest age group, and declining with age. This pattern was also observed with financial hardship, with a lower proportion of respondents experiencing financial hardship in older age groups. Overall, females were more likely to report poor mental health and were slightly more likely to be part-time employed, looking for full-time employment. Mastery was consistent for males and females across the age groups.
Table 6.1. Sample Characteristics (N = 9382), by age and gender.

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>20–24yrs</th>
<th>25–29yrs</th>
<th>30–34yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>1541</td>
<td>1607</td>
<td>1383</td>
</tr>
<tr>
<td>Employment status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>79.04</td>
<td>67.95</td>
<td>86.33</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6.81</td>
<td>5.35</td>
<td>3.69</td>
</tr>
<tr>
<td>PT looking FT</td>
<td>5.97</td>
<td>8.45</td>
<td>4.19</td>
</tr>
<tr>
<td>NILF MA</td>
<td>4.28</td>
<td>7.84</td>
<td>3.47</td>
</tr>
<tr>
<td>NILF</td>
<td>3.89</td>
<td>10.39</td>
<td>2.31</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>29.53</td>
<td>40.26</td>
<td>54.01</td>
</tr>
<tr>
<td>Never married</td>
<td>70.34</td>
<td>59.12</td>
<td>43.24</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>.13</td>
<td>.62</td>
<td>2.75</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not finish Year 12</td>
<td>21.22</td>
<td>18.42</td>
<td>17.57</td>
</tr>
<tr>
<td>Dependent Children (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have dependent children</td>
<td>7.95</td>
<td>17.00</td>
<td>27.74</td>
</tr>
<tr>
<td>Physical health and mental health measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical health SF12 (mean &amp; SD)</td>
<td>7.06</td>
<td>7.91</td>
<td>6.87</td>
</tr>
<tr>
<td></td>
<td>(18.03)</td>
<td>(16.05)</td>
<td>(16.80)</td>
</tr>
<tr>
<td>Depression (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High score (MHI-5)</td>
<td>11.09</td>
<td>12.85</td>
<td>10.11</td>
</tr>
<tr>
<td>Socio-economic and psychosocial measures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial hardship (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 or more markers of hardship</td>
<td>38.19</td>
<td>41.76</td>
<td>35.13</td>
</tr>
<tr>
<td>Mastery (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low sense of mastery (Pearlin’s scale)</td>
<td>32.08</td>
<td>33.09</td>
<td>32.69</td>
</tr>
<tr>
<td>Social support (mean &amp; SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>27.55</td>
<td>26.34</td>
<td>28.14</td>
</tr>
<tr>
<td></td>
<td>(9.85)</td>
<td>(9.90)</td>
<td>(8.93)</td>
</tr>
</tbody>
</table>

Table 6.2 presents prevalence rates for poor mental health, and also the univariate associations between poor mental health and employment status, as well as the key explanatory variables. The overall prevalence of poor mental health was 10.6%. However, this rate was elevated for those who were unemployed (27%), NLF MA (20%), PTLFT (13%), experiencing financial hardship (17%), and those who reported little perceived control
over their lives (25%). These figures are starkly contrasted with much lower prevalence rates of poor mental health amongst the employed (8%), those who did not experience financial hardship (7%), and for those who reported a high sense of perceived control (4%). This was confirmed by the univariate analyses which showed elevated odds ratios of poor mental health for all employment states relative to the employed. In addition, the analyses also showed that financial hardship, low mastery, and low social support were associated with increased odds of poor mental health. An additional analysis was conducted to test for possible gender differences for mental health and employments status. While not displayed in the tables, the results revealed that there were no gender differences observed for those who were unemployed or PTLFT. However, there was a significant interaction effect between gender and NILF, indicating that the association between NILF and poor mental health was stronger for men than it was for women. While not a key focus of the current study, this may be an interesting finding to explore in future research.

*Table 6.2*. Univariate associations between low scores on the MHI-5 (SF-36) and employment status, financial hardship, low sense of mastery, and poor social support.

<table>
<thead>
<tr>
<th></th>
<th>Prevalence of MH (%)</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>27</td>
<td>3.51</td>
<td>2.70 – 4.55</td>
</tr>
<tr>
<td>PTLFT</td>
<td>13</td>
<td>1.65</td>
<td>1.25 – 2.16</td>
</tr>
<tr>
<td>NILF MA</td>
<td>20</td>
<td>2.63</td>
<td>2.06 – 3.35</td>
</tr>
<tr>
<td>NILF</td>
<td>16</td>
<td>2.14</td>
<td>1.74 – 2.65</td>
</tr>
<tr>
<td>Financial Hardship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, 1 or more markers</td>
<td>17</td>
<td>2.45</td>
<td>2.10 – 2.84</td>
</tr>
<tr>
<td>Mastery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>25</td>
<td>7.51</td>
<td>6.33 – 8.90</td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High scores equal low social support</td>
<td>-</td>
<td>3.69</td>
<td>3.34 – 4.08</td>
</tr>
</tbody>
</table>
Table 6.3 presents a series of multivariate longitudinal GEE logistic regression models examining the relationship between employment status and poor mental health, after accounting for the demographic, physical health, socio-economic, and psychosocial factors. Model 1 displays the increased odds of poor mental health for the unemployed, PTLFT, NILF and NILF MA compared to the employed group, after accounting for all covariates. Not being married, not having any dependent children, being divorced/widowed/separated, poor physical health, and not having finished Year 12 were all significantly associated with increased odds of poor mental health.

The next three models systemically added the key variables - social support, financial hardship, and a sense of mastery. Model 2 demonstrated that after accounting for social support, PTLFT was no longer significantly associated with poor mental health. By comparison, while social support decreased the association between unemployment and poor mental health compared to the employed, the odds of poor mental health remained significant. Interestingly, when social support was accounted for, being female became significantly associated with increased odds of poor mental health compared to their male counterparts. Post-hoc analysis considered the interaction between gender and social support. The results indicated the association between poor social support and poor mental health was somewhat stronger for males compared to females. After accounting for financial hardship, in Model 3, the association between poor mental health and unemployment, as well as PTLFT, decreased but remained significant. Similarly, in Model 4, when a sense of mastery was incorporated into the model, there was a decrease in the effect of PTLFT and unemployment.
Table 6.3. Odds ratios (and 95% confidence intervals) from a series of logistic regression models assessing the relationship between depression and financial hardship, mastery, and social support (bold indicates significance).

<table>
<thead>
<tr>
<th>Covariates:</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour-force status (reference: employed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time looking for full-time work</td>
<td>1.67 (1.22 – 2.86)</td>
<td>1.38 (.98 – 1.94)</td>
<td>1.45 (1.03 – 2.04)</td>
<td>1.53 (1.10 – 2.14)</td>
<td>1.35 (.95 – 1.98)</td>
<td>1.21 (.84 – 1.74)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3.12 (2.34 – 4.18)</td>
<td>2.48 (1.80 – 3.44)</td>
<td>2.73 (2.03 – 3.67)</td>
<td>2.87 (2.11 – 3.90)</td>
<td>2.54 (1.85 – 3.48)</td>
<td>2.21 (1.58 – 3.10)</td>
</tr>
<tr>
<td>NILF MA</td>
<td>2.24 (1.70 – 2.94)</td>
<td>1.63 (1.20 – 2.22)</td>
<td>1.97 (1.49 – 2.62)</td>
<td>2.01 (1.50 – 2.70)</td>
<td>1.84 (1.36 – 2.50)</td>
<td>1.49 (1.08 – 2.06)</td>
</tr>
<tr>
<td>NILF</td>
<td>1.95 (1.53 – 2.50)</td>
<td>1.56 (1.18 – 2.05)</td>
<td>1.78 (1.38 – 2.29)</td>
<td>1.77 (1.36 – 2.31)</td>
<td>1.68 (1.29 – 2.20)</td>
<td>1.48 (1.13 – 1.97)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.51 (3.14 – 3.92)</td>
<td>2.51 (1.13 – 2.15)</td>
</tr>
<tr>
<td>Financial Difficulty/Hardship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.13 (1.80 – 2.51)</td>
<td>1.84 (1.54 – 2.19)</td>
</tr>
<tr>
<td>Pearlin’s Mastery Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.64 (5.53 – 7.97)</td>
<td>6.35 (5.27 – 7.65)</td>
</tr>
<tr>
<td>Covariates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (men reference)</td>
<td>1.06 (.89 – 1.28)</td>
<td>1.38 (1.14 – 1.67)</td>
<td>1.09 (1.38 – 2.29)</td>
<td>1.00 (.90 – 1.30)</td>
<td>1.11 (.92 – 1.34)</td>
<td>1.34 (1.10 – 1.63)</td>
</tr>
<tr>
<td>Age (reference: 20 – 24 yrs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 25 – 29 years</td>
<td>.85 (.69 – 1.04)</td>
<td>.81 (.65 – 1.00)</td>
<td>.82 (.66 –.1.01)</td>
<td>.81 (.65 – 1.00)</td>
<td>.79 (.63 -.98)</td>
<td>.79 (.63 – 1.00)</td>
</tr>
<tr>
<td>Age 30 – 34 years</td>
<td>.93 (.75 – 1.16)</td>
<td>.85 (.67 – 1.08)</td>
<td>1.00 (.80 – 1.25)</td>
<td>.86 (.68 – 1.08)</td>
<td>.93 (.73 – 1.17)</td>
<td>.87 (.68 – 1.11)</td>
</tr>
<tr>
<td>Wave (reference: Wave 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave 2 (2004)</td>
<td>1.15 (.98 – 1.35)</td>
<td>1.09 (.91 – 1.31)</td>
<td>1.18 (1.00 – 1.40)</td>
<td>1.22 (1.02 – 1.46)</td>
<td>1.24 (1.03 – 1.49)</td>
<td>1.14 (1.04 – 1.38)</td>
</tr>
<tr>
<td>Wave 3 (2007)</td>
<td>1.11 (.93 – 1.32)</td>
<td>1.06 (.88 – 1.29)</td>
<td>1.20 (1.00 – 1.43)</td>
<td>1.14 (.94 – 1.38)</td>
<td>1.19 (.98 – 1.45)</td>
<td>1.12 (1.09 – 1.13)</td>
</tr>
<tr>
<td>Dependent children</td>
<td>.87 (.70 – 1.08)</td>
<td>.76 (.60 -.96)</td>
<td>.76 (.61 -.95)</td>
<td>.81 (.65 – 1.02)</td>
<td>.72 (.58 – 1.10)</td>
<td>.68 (.54 – 0.87)</td>
</tr>
<tr>
<td>Marital Status (partner/spouse reference)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>1.54 (1.27 – 1.86)</td>
<td>1.27 (1.04 – 1.55)</td>
<td>1.43 (1.18 – 1.73)</td>
<td>1.37 (1.12 – 1.66)</td>
<td>1.31 (1.07 – 1.59)</td>
<td>1.45 (.98 – 2.14)</td>
</tr>
<tr>
<td>Separated/Divorced/Widowed</td>
<td>1.91 (1.35 – 2.69)</td>
<td>1.63 (1.12 – 2.38)</td>
<td>1.76 (1.23 – 2.51)</td>
<td>1.68 (1.12 – 2.40)</td>
<td>1.59 (1.11 – 2.29)</td>
<td>1.17 (.95 – 1.44)</td>
</tr>
<tr>
<td>SF-12 Physical Function</td>
<td>1.02 (1.01 – 1.02)</td>
<td>1.01 (1.01 – 1.02)</td>
<td>1.01 (1.01 – 1.02)</td>
<td>1.01 (1.00 – 1.01)</td>
<td>1.01 (1.01 – 1.01)</td>
<td>1.01 (1.00 – 1.01)</td>
</tr>
<tr>
<td>Not completed Year 12</td>
<td>1.33 (1.09 – 1.63)</td>
<td>1.14 (.92 – 1.41)</td>
<td>1.24 (1.01 – 1.53)</td>
<td>1.13 (.93 – 1.40)</td>
<td>1.08 (.88 – 1.33)</td>
<td>1.03 (.82 – 1.28)</td>
</tr>
</tbody>
</table>
Model 5 incorporated both financial hardship and mastery into the model. This saw a further reduction in the odds of poor mental health for those who were unemployed, compared to the employed, suggesting that financial hardship and mastery each make a significant contribution in explaining the increased risk of poor mental health for those who are unemployed. The association between PTLFT and poor mental health was fully mediated by financial hardship and mastery. Finally, Model 6 included all variables and covariates. The association between unemployment and poor mental health remained strong.

Table 6.4 presents the percentage change in odds ratios for the unemployed and PTLFT, with the addition of the key variables: social support, mastery, and financial hardship. Social support emerged as a strong mediating variable, explaining 30% of the difference between the unemployed and employed individuals in the prevalence of poor mental health. Social support also explained 43% of the difference of prevalence rates between PTLFT and the employed. Compared to the employed, financial hardship explained 18% of the difference in the prevalence of poor mental health for the unemployed and 33% of the difference for the PTLFT. The inclusion of mastery accounted for 12% and 21% of the association of poor mental health for the unemployed and PTLFT respectively. Overall, 43% of the difference between unemployed and employed individuals in the prevalence of depression was explained by socio-demographic, social support, mastery, and hardship measures; whereas for PTLFT compared to the employed, 69% of the difference in prevalence rates was explained by these same variables.
Table 6. 4. Fraction of difference between unemployed and employed (as well as PTLFT and employed) persons with depression mediated by socio-demographic, financial hardship, a sense of mastery, and social support measures

<table>
<thead>
<tr>
<th>Mediating Variable</th>
<th>Unemployed vs. Employed</th>
<th>PTLFT vs. Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MHI-5 (%)*</td>
<td>Mediating Variable</td>
</tr>
<tr>
<td>Social Support only</td>
<td>30</td>
<td>Social Support only</td>
</tr>
<tr>
<td>Financial Hardship only</td>
<td>18</td>
<td>Financial Hardship only</td>
</tr>
<tr>
<td>Mastery only</td>
<td>12</td>
<td>Mastery only</td>
</tr>
<tr>
<td>Social support, financial hardship and mastery</td>
<td>43</td>
<td>Social support, financial hardship and mastery</td>
</tr>
</tbody>
</table>

*The figures displayed show results after controlling for covariates

The results from a similar series of fixed-effects logistic regression models are presented in Supplementary Table 1. Although the ORs for the PTLFT state are broadly comparable to the GEE models, this term is not significant in any of the models, likely reflecting the reduced sample size available for the fixed effect modelling. The effect of unemployment was significant in all models, providing more robust evidence that that transition to unemployment was associated with increased likelihood of poor mental health. These fixed-effect models only provided evidence of a mediating role for mastery. The inclusion of hardship had little influence on the unemployment coefficient and after controlling for social support unemployment had a more deleterious effect on mental health.

The graph in Figure 6.1 displays the relationship between the duration of unemployment and mental health (N = 313) using the descriptive ("lowess" function), and quantitative (multivariate regression analysis) methods. The graph provides a visual representation of the relationship between the mental health scale score and weeks unemployed. The graph suggests that there is a general positive association between time unemployed and poor mental health, although this association appears stronger in the initial weeks of unemployment. Model 1 (Table 6.5) demonstrates that during the early phase of unemployment, for each week of unemployment is an associated increase of .97 on the
mental health scale (poorer mental health). By contrast, in the later period of unemployment, there is no evidence that different duration of unemployment is associated with different mental health. Model 2 demonstrates that this association between the early phase of weeks unemployed and mental health remains significant after accounting for age and gender.

*Figure 6.1. Non-parametric regression between duration of unemployment and mental health (graph)*

*MH reverse coded so that higher scores = poor mental health

*Table 6.5. Regression analyses assessing the relationship of mental health measure and duration of unemployment (first 9 weeks of unemployment, compared to 9 – 52 weeks of unemployment)*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weeks Unemployed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 9</td>
<td>0.98 (0.03, 1.93)</td>
<td>1.02 (0.06, 1.99)</td>
</tr>
<tr>
<td>Weeks 9 – 52</td>
<td>0.01 (-.26, .24)</td>
<td>0.04 (-.20, .28)</td>
</tr>
<tr>
<td><strong>Age (reference: 20 – 24 years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 25 – 29 years</td>
<td>0.98 (-5.13, 7.08)</td>
<td></td>
</tr>
<tr>
<td>Age 30 – 34 years</td>
<td>-2.46 (-8.43, 3.51)</td>
<td></td>
</tr>
<tr>
<td>Gender (men reference)</td>
<td>7.04 (1.44, 12.63)</td>
<td></td>
</tr>
</tbody>
</table>
Finally, the results obtained from repeating these key analyses on a wider age range of respondents (aged 20 to 54 years) are provided in the Supplementary online materials (p. 181). These show the same pattern of results, though the strength of association evident between labour force status (unemployment, PTLFT work) is a little weaker.

**Discussion**

It has been well-established that those who are unemployed are significantly more likely to experience poor mental health than those who are employed (Flatau, Galea, & Petridis, 2000; Paul & Moser, 2009). However, due to growing recognition of a “poverty cycle”, which sees disadvantaged individuals cycling between unemployment and poor quality employment (Leach et al., 2010; Olesen et al., 2013), there is a greater need to take into account underemployment. Furthermore, as previous studies have suggested that there are strong age-related effects in the relationship between mental health and employment status most pertinent to young people (Breslin & Mustard, 2003; Rowley & Feather, 1987), this study focused on the young adult group. The current findings demonstrate that young adults who are unemployed or underemployed are at greater risk of poor mental health than young adults who are employed. Consistent with previous research (Dooley, Prause, & Ham-Rowbottom, 2000; Grzywacz & Dooley, 2003), the multivariate longitudinal regression analysis showed that, compared to full-time employment, all other categories of employment status (unemployment, PTLFT, NILF MA, and NILF) were associated with increased risk of poor mental health. The odds ratios indicated that even after controlling for a comprehensive number of socio-demographic covariates (marital status, gender, age, wave, dependent children, education, and physical health), unemployment was associated with over three times the odds of mental health problems, while those who are PTLFT showed more a moderate risk of poor mental health. While this study used the MHI-5 to assess poor mental health, the findings are broadly consistent with a recent study which used a self-report depression.
assessment (Crowe & Butterworth, 2015), demonstrating consistency in the pattern of results between employment status and poor mental health.

A key aim of this study was to investigate the extent that financial hardship, social support and a sense of personal control explained the association between employment status and mental health. Each variable showed strong independent associations with mental health, and together accounted for almost half of the difference in mental health between the employed and the unemployed group, and two thirds of the difference in mental health for the PTLFT employed. These findings provide insight into the material resources and psychological processes via which unemployment and underemployment might affect mental health. When considering the experiences of those who are unemployed or underemployed, it seems reasonable to consider that financial hardship, low social support and a low sense of mastery may work in conjunction to increase the odds of poor mental health.

On the one hand, financial hardship may be considered as a motivating factor for job seekers, in providing greater incentive to obtain employment (Wanberg, Zhu, Kanfer, & Zhang, 2012). On the other hand, it may also be a stressor that compounds the experience of unemployment, may contribute to poorer mental health, and ultimately represent a barrier to finding employment. For instance, financial strain may impact upon an individual’s capacity to draw on their psychosocial and social resources. That is, financial hardship may restrict opportunities to participate in social activities or to maintain social connections, or it may reduce a sense of agency to engage with their community and environment (Fryer, 1986). Subsequently, these low levels of mastery and social support are likely to increase feelings of demoralisation and hopelessness, leading to poorer mental health outcomes. In addition, job loss and inadequate employment appear to result in financial, psychological, and social stressors that exceed the individual’s personal coping resources, resulting in poorer mental health outcomes. This is broadly supported by the results from the mediational analysis that
demonstrated the importance of both psychosocial and economic resources in explaining differences in mental health seen between those who are employed, and those who are unemployed and PTLFT employed.

Importantly, our consideration of the fixed-effects models supported the potential mediating role of mastery. However, social support and, to a lesser extent, financial hardship did not demonstrate the same mediating role as was evident in the GEE models. This suggests a predisposing effect of social support in particular. That is, while greater hardship and lower social support do somewhat explain the poorer mental health of those who are unemployed, this is not tied to the occasions in which they are unemployed. Rather, it reflects an underlying predisposition influencing mental health across all time points irrespective of labour force status. Further investigation of the nature of the association between employment status and social support is required.

Despite the contributions of the key mediating variables, the results suggest that those who were unemployed continued to experience poorer mental health when compared to those who were employed. The increased odds of poor mental health associated with being unemployed remained significant even after accounting for these key variables. As these factors only partially mediated the association between unemployment and mental health, future research may seek to explore other possible explanatory factors in tandem with financial hardship, mastery and social support, such as stigma, employment commitment, welfare imposed requirements (i.e. activity test requirements), and the utilization of various coping strategies. By contrast, PTLFT was fully mediated by social support, financial hardship and mastery, suggesting that the difference in odds of poor mental health between underemployment and employment can be explained by the experience of poorer financial conditions, low sense of control, and lower levels of social support. Further, the fixed-effect models did not show evidence that PTLFT had poorer mental health than those who were
otherwise employed, though this may reflect the relatively small number of respondents included in these models.

An additional key unique aim of this study was to examine the effect of duration unemployed on mental health. The visual representation of this relationship (Figure 1) suggested a strong negative association between the early weeks of unemployment and mental health, which appeared to somewhat “plateau” after about the 10 week period. This was confirmed by statistical analyses which demonstrated that there was a significant negative association between mental health and the first nine weeks of unemployment. Following the 9 week period, mental health did not significantly change over time. However, the point at which the decline in mental health appears to abate occurs at a level of significant distress – much higher than those who are gainfully employed. These results may have implications for policy and clinical practice, suggesting that interventions that seek to prevent the deterioration in mental health should target the first two months of unemployment, rather than focus exclusively on long-term unemployment. This analysis was restricted by an essentially cross-sectional design; therefore, only offering a snapshot of mental health of those unemployed without taking into account individual changes since time of unemployment.

Despite this limitation, the results do lend support for previous research, that individuals experience a sharp decline in mental health which then abates with duration of unemployment (Dockery, 2006; Flatau, Galea, & Petridis, 2000). Flatau and colleagues (2000) asserted that the effect on mental health of those who have recently faced unemployment is likely to follow a series of complex stages, with initial shock, adjustment, and eventually resignation. While it failed to reach significance, the general trend of association between mental health and duration of unemployment did suggest a deterioration in mental health as the duration approached 52 weeks, which may indicate further decline of
mental health for the long term unemployed. If true, these findings may indicate another crisis period in mental health, and may have important implications for welfare policy. However, future longitudinal studies are required to observe these effects over a greater period of time to test if this trend is meaningful.

The current study was primarily focused upon the association between employment status and mental health amongst young adults, replicating and extending previous research in this area (Crowe & Butterworth, 2016). However, the HILDA survey data also provided an opportunity to expand this focus and consider the circumstances of a broader age range of respondents. The supplementary results considering the more expansive age range were consistent with those from the younger adults, suggesting the discussion above is generally applicable to all working-age adults.

Limitations

The current study has a number of limitations, which need to be acknowledged. Most notably, the data used included respondents within the age range of 20 to 34 years, rather than utilizing a strict cohort or panel design. Therefore, as individuals moved in and out of this age range, they were either included or excluded. Accordingly, some individuals were included up to three times in the analysis, while others only contributed in one wave. However, the population average approach accounted for any clustering of observations within individuals and allowed us to maximize use of the data available.

Another potential limitation is the possibility of reverse causation, that is, social support or a low sense of mastery cause unemployment. Indeed, life events such as marriage breakdown or an illness of a spouse may simultaneously impact on employment status and social support or mastery, and thus, mental health. However, the current paper represents a significant advance in understanding the role of these potential mediators, especially using the explained fraction approach. In the future, the current approach could be built upon in
longitudinal studies with more waves of data to investigate causality more closely using ‘lagged models’.

A further limitation is that the analyses investigating the temporal effect of unemployment on mental health were essentially cross-sectional. Our fixed-effect models somewhat alleviated these concerns, replicating some of the main findings and identifying important caveats to the interpretation of the mediating effect of social support and hardship, and limitations on the causal interpretation of being in the PTFLT status. Finally, the authors recognise that the categorisation of dependent variable does lead to a loss of sensitivity; however, as the study was focused on what factors have a clinically significant impact on psychological distress, the cut-point to indicate poor mental health was utilised.

Conclusions

This study contributes important results to the literature examining the relationship between unemployment, as well as underemployment, and mental health. Mastery, social support and financial hardship emerged as important explanatory factors for both unemployment and underemployment – demonstrating that those who experience a low sense of mastery, low social support, and financial hardship are at increased risk of experiencing poor mental health. Importantly, a transition to unemployment was accompanied by a change in mastery. The findings also suggest that any type of employment is not enough to foster good mental health. Being inadequately employed, such as working too few hours, is also associated with high levels of distress. In such circumstances, becoming unemployed has even been perceived as a positive event if it increases a sense of control and allows the individual to find better quality employment (Infurna, Gerstorf, Ram, Wagner, & Heckhausen, 2012). The findings have some important implications for developing interventions to promote the mental health of unemployed individuals. For example, interventions should commence rapidly after people become unemployed to prevent the sharp
decline in mental health seen in the first two months of unemployment. Furthermore, the
findings suggest employment and social policies which propose a “wait time” for receiving
an allowance for job seekers may be detrimental. It is possible that this wait-time may subject
individuals to greater financial hardship, and thus, reduced personal control, which may cause
further deleterious effects on mental health. Understanding the barriers that job seekers face
and the factors that contribute to their mental health is essential for targeting intervention and
policy to increase chances of employment participation and breaking the ‘poverty cycle’.

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Job seeking in the face of inadequate or unemployment: Correlates of depression and the job search process

Running head: Correlates of depression and job search behaviours

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Abstract

Objective: Financial hardship, social support and a sense of mastery have been found to correlate with depression within the general population, and also to help explain why those who are unemployed or under-employed experience greater depression than those who are employed. This study seeks to understand how these factors might impact depression specifically in a sample of job-seekers, and whether these factors also hinder job-seeking behaviour and expectations.

Method: A cross-sectional study was conducted among job-seekers in receipt of welfare assistance (n = 192). Self-rated depression, mastery, social support, financial hardship and job search factors (intensity, expectations, and intention) were measured. Logistic regression models were used to investigate the extent to which financial hardship, social support, mastery and time unemployed were associated with likelihood of ‘probable’ depression. Linear regression models were used to investigate the relationships of financial hardship, social support, mastery and time unemployed with job search factors.

Results: Individuals with low mastery, low social support, and experiencing financial hardship were more likely to experience depression, as were those in the first seven weeks of unemployment. Greater financial hardship was related to higher job search intensity; low mastery and low social support were related to low job search expectations; while, low job search intention was related to low job search expectations, low job search intensity, and greater depression.

Conclusions: Mastery, social support and financial hardship, in part, explain differences in depression within this population of job seekers. These factors are also important in determining the very job-seeking behaviours and attitudes important for those seeking work (job search intensity, expectations and intention). These findings suggest that interventions targeting mental health outcomes and reemployment should pay careful consideration to these three factors – seeking to improve mental health outcomes, while concurrently improving chances of reemployment.

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Introduction

Research has shown that unemployment and inadequate employment is associated with deleterious effects to an individual’s mental health and wellbeing (for review see Paul & Moser, 2009). Compared to the employed, the literature has consistently shown that the unemployed and underemployed are at greater risk of poor mental health (Dooley & Prause, 2004; McKee-Ryan et al., 2005; Murphy & Athanasou, 1999; Paul & Moser, 2009). This is further supported by the body of Australian and international research into income support and welfare assistance, which has found that mental health conditions are more prevalent among welfare recipients, compared to the rest of the general population (Butterworth, 2003; Sweeney, 2000; Zedlewski, 1999). Considering the mental health of welfare recipients provides insight into the lived realities of those who are jobless and searching for work, and ‘moves the discussion and analysis from abstract statistics relating to participation rates and definition of unemployment and poverty lines, to direct focus on the wellbeing and personal distress of individuals and their families’ (Butterworth, Burgess, & Whiteford, 2011, p. 15).

In order to receive welfare allowance while looking for work (either the Newstart Allowance or Youth Allowance), most recipients must participate in ‘Activity Requirements’ such as job search or study. Thus, payments for unemployed people are becoming ‘increasingly conditional on their demonstrating thorough and continuing job search effort’ (Eardley & Matheson, 1999, p. 1). Despite growing policy interest, there is still very little research looking at the components of the job search experience and how this may contribute to mental health outcomes (Vinokur & Caplan, 1987; Wiener et al., 1999). For most persons, the task of finding employment itself is stressful, where it involves resume writing, interviewing, asking for assistance or help – and on top of
this, having to manage feelings of discouragement in order to sustain search efforts (Wanberg et al., 2012). It has also been posited that inadequate financial support for job seekers can contribute to further life stressors such as financial hardship (Lee & Vinokur, 2007), which in turn can contribute to a cycle of poverty and perpetuate poor mental health outcomes (Butterworth, 2003; Butterworth et al., 2004).

Studies have demonstrated that several factors impact job-seeking behaviour, including job-search forecast, employment commitment, social support, unemployment negativity, high-self confidence in job attainment, and financial need (Wanberg, Watt, & Rumsey, 1996). However, few studies have examined how the factors which impact poor mental health in the unemployed may be linked or relate to aspects of the job search process. Understanding the interplay between mental health and the job seeking process is vital for targeting interventions for job seekers. In fact, the JOBS program that was developed to aid those who are unemployed has been shown to ‘improve job seeking skills and a sense of personal mastery… [which] inoculates participants against feelings of helplessness, anxiety, depression and other stress-related mental health problems’ (p. 1, NREPP Report). Therefore, improving our understanding of the job-search process and the correlates of mental health can better inform these programs, and improve mental health outcomes.

Financial hardship, a sense of mastery, and social support are three key variables that have been identified as playing a key role in explaining the association between employment status and poor mental health (Crowe & Butterworth, 2015). Whereas job search intensity, job search expectation, and job search intention are variables that have been identified as key factors associated with the job search process and success (Wanberg et al., 2005). This study seeks to explore whether social support, financial hardship and a sense of mastery explain differences in mental health within a sample of unemployed and underemployed persons, and how these factors might relate
to the job search process and duration of unemployment.

Financial hardship, mastery and social support – links with depression and job-seeking

Financial hardship describes the experience of not being able to pay for basic necessities of life, such as food, clothing housing and medical care – an experience more commonly associated with those who are unemployed and underemployed (Butterworth et al., 2009). Research evidencing that financial hardship is strongly and independently related with depression is now well-established (Butterworth et al., 2009; Phillips & Nepal, 2012). However, research has also shown that financial hardship may provide incentive for greater job search effort and intensity (Vinokur & Schul, 2002). It is not well understood how these two potentially competing outcomes of financial hardship interact, especially given financial hardship is believed to weaken an individual’s sense of control over their life (Newton, 2003; Marcus & Moore, 2003).

Experiencing a low sense of mastery, or little or no control over one’s life, can lead to feelings of a lack of self-determination, leading to perceptions of helplessness and hopelessness – often a critical precursor to anxious and depressive symptomology (Rosenfield, 1989). Having a poor sense of control over the environment, combined with an increased risk of mental health problems, obviously represents as a barrier to reemployment. Indeed, Vinokur et al. (2000) found that a sense of mastery had positive direct and interactive effects (through baseline job-search motivation) on reemployment and mental health outcomes.

Another factor that can either enhance or undermine both job-search motivation and mental health is social support. Research has found that unemployed individuals who are less socially integrated are more likely to experience poor mental health outcomes than those who are socially connected (House, Williams, and Kessler, 1987). In fact, social support is believed to ‘buffer’ the negative effects of unemployment, as well as an adaptive coping mechanism for managing stress associated with
unemployment (Creed & Moore, 2006). Furthermore, Vinokur and Caplan (1987) posited that if job seekers receive support for job-seeking activities it can motivate job-search behaviours as they are more likely to perceive reemployment as worthwhile and valuable. Though, it is worth noting that conflict or strain in social supports – which may be intensified by the experience of financial hardship or emotional distress – may curb the job seeker’s ability to engage in meaningful activities and may actually exacerbate mental health problems (Frese & Mohr, 1987).

*Job search intensity, expectation and intention – links with depression and job-seeking*

Research conducted on job search intensity and mental health suggests that job search affects mental health in two ways: the first being that job seekers who cope with job loss by engaging in an intense job search are more likely to have improved mental health – as it is also likely to lead to reemployment (Wanberg, Griffiths, & Gavin, 1997); and the second is that a long period of intense search followed by continued unemployment is likely to lead to decreased mental health (Saks, 2005; Wanberg et al., 1997). Vinokur and Caplan (1987) highlighted the paradox that exists between intensive job seeking and mental health – suggesting that those with high job seeking behaviours may be at greater risk of suffering psychological distress (Feather & Davenport, 1983). This has been supported by McKee-Ryan et al. (2005) who found that higher job search effort was associated with poorer mental health during unemployment. Whereas, Kessler et al. (1989) actually found that the presence of elevated depressive symptoms following job loss resulted in slightly increased likelihood of reemployment at follow up. This research highlights the importance of accounting for the length of time that an individual has been actively searching for work, and whether the duration of unemployment/job search mediates the effects of job search on mental health and associated factors.

Another important factor in the job search literature is the job seeker’s
expectations of finding work. Expectations are likely to impact a job seeker’s sense of optimism, perseverance, as well as how they evaluate their own skills and abilities (Vansteenkiste, Willy, Hans, & Feather, 2005). Feather (2012) proposed that job-seeking depends on “…the strength of a persons’ expectation that he or she will find employment following attempts to do so and on the perceived attractiveness of having a job” (p. 66). Wanberg (1997) cited the importance of perceived situational control (the perception that one would find a job) in explaining the relationship between job search intensity and mental health. The author found that when job seekers perceived that they were likely to find a job, job search was related to better mental health. However, for job seekers who were not optimistic about their chances of finding a job, job search was related to lower mental health. Wanberg (1997) concluded that an intense job search might have adverse effects in terms of poorer mental health when the situation is perceived as uncontrollable (Saks, 2005).

Furthermore, job search expectations have been shown to be related to job search intention and future job search behaviours. Kanfer et al. (2012) found that those who believed that they could impact their employment success were more likely to use time and energy in their job search. By comparison, those who believe that they were unable to change their employment state were likely to be dispirited and indicated lower job search intentions (Slebarska, Moser, Gunnesch-Luca, 2009).

Time Unemployed

Length of unemployment is an additional factor that needs to be considered when examining the links between mental health and job search activity. Reviews of the literature suggest that the duration of unemployment can increase the risk of mental health problems (Barling, 1990; Fryer and Payne, 1986). It has been argued that individuals are likely to suffer a steady decline in their mental health as they experience an accumulation of stress with prolonged unemployment – such as experiencing failures
in job seeking, stronger financial pressures, and greater strain on social supports (Paul & Moser, 2009). Furthermore, if poor mental health affects job search activity, this could create a cyclical effect between time unemployed, mental health and job search activity. Alternatively, recent research has indicated that the impact of time unemployed on mental health may not be linear; rather individuals experience a sharp decline in their mental health in the early stages of unemployment which then plateaus in the later stages (Dockery, 2006). If this is the case, this may have implications for social policy ‘wait times’ and targeting interventions.

**Objective**

Overall, the current study has two key objectives: a) to investigate whether financial hardship, social support and a sense of mastery explain differences in depression symptomatology within a sample of job-seekers, and b) to identify how these factors relate to important job search features, specifically job search intensity, expectation and intention. This research is uniquely positioned to enhance understanding of the barriers that job-seekers face in maintaining their mental health and finding new employment. It may also have implications for how the requirements of welfare receipt (e.g. prescribed numbers of job applications) might impact income support recipients. This study aims to better understand the mechanisms leading to poor mental health of those looking for work, and thus inform the design and targeting of psychological therapeutic interventions for this group of people.

**Method**

**Participants**

A total of 205 Newstart Allowance and Youth Allowance (Other) recipients were surveyed. Each respondent indicated that they were actively searching for work. Of these 124 were unemployed, while 65 had some type of employment but still qualified for welfare receipt as their income/wages were below the eligibility threshold.
There were 7 persons who indicated that they were not currently looking for a job, and were subsequently excluded from the analysis. Missing data analysis indicated that 6 persons had insufficiently completed the survey questions, leaving 192 participants in the sample for analyses. This sample was comprised of 47% males, had a mean age of 39 years, and had been looking for work/unemployed 56 weeks on average.

**Measures**

- **Depression**
  
  Depression was assessed using the Goldberg Depression Scale (Goldberg et al. 1988), which is a nine-item scale used to assess the occurrence of depressive symptoms (e.g., lost confidence in self, difficulty concentrating) in the past month. Total scale scores range between 0 and 9; this total was dichotomized such that a score of seven or greater indicated the presence of likely depression (1), and below seven represented no depression (0). The Goldberg Depression Scale has been previously validated for detecting depression and anxiety caseness (Kiely & Butterworth, 2015).

- **Mastery, Financial Hardship/Difficulty and Social Support**
  
  Pearlin’s Mastery Scale (Pearlin & Schooler, 1978) is a seven-item self-report measure used to assess the degree to which respondents feel a sense of control over their lives. Respondents indicate the degree to which they agree or disagree with statements such as ‘What happens to me in the future mostly depends on me’ or, ‘I can do just about anything I really set my mind to do.’ Total scale scores range from 7 to 28, with higher scores indicating higher degree of mastery orientation. These scores were reversed, so that high scores indicated lower mastery.

  Financial hardship assessed four core components of objective deprivation drawn from the Australian Household Expenditure Survey (Australian Bureau of Statistics, 2012). The items asked whether the respondents were deprived of certain basic goods and opportunities due to financial circumstances (e.g. *Due to a shortage of money: I*...
have had to pawn or sell something; went without meals; unable to heat home; asked for help from community organisations). Participants endorsing one or more of these items were categorised as experiencing financial hardship (0 ‘no’, 1 ‘yes’).

Finally, social support was measured by four scales measuring social support. Two of the scales (range 0 – 6) measured positive social support from family and from friends (e.g. feeling cared for) and two of the scales (range 0 – 9) measured conflict from family and from friends (e.g. criticised or arguments) (Schuster, Kessler & Aseltine, 1990). High scores on ‘positive social support’ (for friends and family) indicated low support, while high scores on ‘negative social support’ (with friends and family) indicated high conflict.

- Time unemployed/looking for work

  Weeks unemployed/looking for work was measured by respondents indicating how long they had been actively searching for work: “Roughly, how many weeks would you say you have been looking for work or unemployed?”

- Job search components: Intensity, expectation and intention

  Intensity of past job search behaviours was measured by asking respondents to indicate the frequency on a 4-point likert scale (i.e. ranging from “not at all” to “every day”) to which they engaged in a number of job-seeking activities (e.g. reading the paper, internet searches or contacting employment agencies) and were used to form a measure ranging from 5 to 20 (Vinokur, Schul, Vuori, & Price, 2000).

  Job expectations were assessed by asking respondents to indicate the extent they felt optimistic about finding a job, had no expectations of finding a job in the near future, or had been rejected so many times in job interviews that they had lost expectations of finding a job. Unlike the measures of job-search intensity (which ask about attitudes toward job search behaviour), these measures seek to assess expectations towards successfully obtaining a job (Vansteenkiste, Willy, Hans, & Feather, 2005).
Finally, the future intention to engage in job-seeking was assessed by the respondent’s answers to the question: “In the next four months, how hard do you intend to try find a job where you’d work 20hrs a week?” The response ranged on a 5-point item, “Not at all hard” to “Extremely hard” (Vinokur et al., 2000).

- Socio-demographics (control variables)

  In addition to the variables described above, gender (male/female), age (categorised into 18-29/30-39/40-49/50-64), education (finished Year 12/did not finish Year 12) and marital status (married or defacto/never married or single/divorced, widowed or separated) were assessed and included as covariates in the analyses.

Procedure

To collect a sufficient sample size of job-seekers a combination of recruitment strategies were utilised: posters with the web link were distributed near welfare and community organisations; the link was promoted through relevant online social media sites; and an industry accredited online research panel was used to target appropriate participants. A link to the survey website was emailed/advertised to participants. The first web page provided the study details before seeking their consent to participate in the study. Participants were first required to provide demographic information including age, gender, marital status, education level, and employment status. No identifying information was required to participate (entirely anonymous). Participants were then asked about depressive symptomology (Goldberg Depression Scale: Goldberg, Bridges, Duncan-Jones, & Grayson, 1988), their sense of mastery level of social support, and financial difficulties. In addition, the participants were asked to indicate their job seeking behaviours. Participants were then presented with a study debriefing page, and provided with options to collect remuneration ($5 for participants recruited through poster/online social media sites). The survey site was security protected; only enabling
the doctoral candidate to access data. The Human Research Ethics Committee of The Australian National University approved the study protocol.

Results

Descriptive information

Demographic information is presented in Table 7.1, stratified by age and gender. The proportion of adults with depression ranged from 30% to 75% in each of these categories – suggesting that within this job seeker sample the prevalence of depression was much higher than the average population. The general trend of rates of depression across age indicated a U-shaped relationship whereby depression peaked for females in their 30s, and for males in their 40s. The sample also showed a high prevalence of financial hardship. This was particularly the case for females in their 40s (81%), and males in their 30s (70%). Mastery remained relatively stable across age and gender.

Depression: Associations with mastery, financial hardship and social support

Table 7.2 reports the univariate and multivariate logistic regression associations of the key explanatory variables (a sense of mastery, financial hardship and social support) and covariates (gender, age, marital status and education), with depression. Experiencing financial hardship (OR = 4.12), low mastery (OR = 1.20), and low social support from friends/family (OR = 1.34/1.41) and high conflict from friends/family (OR = 1.16/1.25) each demonstrated a significant association with depression. We also examined the financial hardship measure as a continuous variable, and the results suggested there was general linear trend between number of financial hardship markers endorsed and odds of depression. After accounting for covariates, the four measures of social support no longer demonstrated a significant relationship with depression. Experiencing financial hardship (OR = 4.28) and mastery (OR = 1.14) continued to show a significant association with depression.
Table 7.1 Descriptive statistics reporting health, socio-economic, demographic and psychosocial characteristics of respondents across four age groups.

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>18–29yrs</th>
<th>30–39yrs</th>
<th>40 – 49yrs</th>
<th>50 – 65yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>17</td>
<td>38</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>5.88</td>
<td>23.68</td>
<td>26.92</td>
<td>38.46</td>
</tr>
<tr>
<td>Never married</td>
<td>88.24</td>
<td>76.32</td>
<td>61.54</td>
<td>23.85</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>5.88</td>
<td>0.00</td>
<td>11.54</td>
<td>7.69</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not finish Year 12</td>
<td>11.76</td>
<td>15.79</td>
<td>23.08</td>
<td>38.46</td>
</tr>
<tr>
<td>Dependent Children (%)</td>
<td>6.25</td>
<td>7.89</td>
<td>15.38</td>
<td>30.77</td>
</tr>
</tbody>
</table>

Mental health measure

| Depression (%)              |          |          |            |            |          |          |          |            |
| Goldbook Depression Scale   | 35.29    | 50.00    | 69.23      | 63.64      | 53.33    | 74.07    | 31.82     | 56.25     |

Socio-economic and psychosocial measures

| Financial hardship (%)      |          |          |            |            |          |          |          |            |
| 1 or more markers of hardship | 62.50   | 48.65    | 69.57      | 53.85      | 62.50    | 80.77    | 63.64     | 58.06     |

| Mastery (mean score & sd)   |          |          |            |            |          |          |          |            |
| 20.35 (3.02)               | 19.97    | 19.38    | 21.77      | 20.81      | 20.67    | 19.17    | 19.06     |          |
| (2.56)                     | (3.71)   | (3.59)   | (4.76)     | (3.54)     | (4.47)   | (4.27)   |           |          |

| Social support (mean score & sd) | Positive Friend SS | Conflict Friend SS | Positive Family SS | Conflict Family SS |
|                                | 5.05 (1.59)       | 6.94 (2.79)       | 3.53 (1.28)       | 7.65 (2.95)     |
|                                | 4.68 (1.69)       | 6.39 (2.25)       | 4.16 (1.54)       | 7.50 (1.78)     |
|                                | 4.81 (1.67)       | 6.62 (2.43)       | 4.48 (1.73)       | 7.88 (2.55)     |
|                                | 4.46 (1.94)       | 6.30 (1.70)       | 4.00 (1.96)       | 6.77 (1.96)     |
|                                | 5.19 (2.07)       | 5.37 (2.33)       | 4.25 (1.98)       | 6.00 (2.61)     |
|                                | 5.00 (1.78)       | 6.40 (2.15)       | 5.00 (1.70)       | 7.67 (2.42)     |
|                                | 4.61 (1.95)       | 5.91 (2.19)       | 3.83 (1.52)       | 6.00 (2.62)     |
|                                | 3.91 (1.75)       | 5.77 (1.96)       | 3.69 (2.02)       | 6.63 (2.56)     |
Table 7.2 Univariate and multivariate relationships between depression and various socio-economic, demographic and psychological measures.

<table>
<thead>
<tr>
<th></th>
<th>Univariate</th>
<th></th>
<th>Multivariate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR  95% CI</td>
<td>OR  95% CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Friend SS</td>
<td>1.34   1.13 – 1.60</td>
<td>1.14 .91 – 1.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Conflict Friend SS</td>
<td>1.16 1.02 – 1.32</td>
<td>1.16 .98 – 1.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Family SS</td>
<td>1.41 1.18 – 1.69</td>
<td>.99 .78 – 1.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Conflict Family SS</td>
<td>1.25 1.11 – 1.41</td>
<td>1.10 .9 – 1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Hardship</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4.12 2.21 – 7.70</td>
<td>4.28 1.81 – 10.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, 1 or more markers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>1.20 1.10 – 1.31</td>
<td>1.14 1.02 – 1.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks Unemployed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 7</td>
<td>1.52 1.06 – 2.18</td>
<td>1.23 .82 – 1.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 7+</td>
<td>1.00 .99 – 1.01</td>
<td>1.00 .98 – 1.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (reference: Males)</td>
<td></td>
<td>2.56 1.18 – 5.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (reference 18 – 29yrs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39yrs</td>
<td>2.82 .97 – 8.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49yrs</td>
<td>2.10 .71 – 6.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-64yrs</td>
<td>1.17 .37 – 3.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (reference: finished Yr 12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not finished Year 12</td>
<td>.89 .58 – 1.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status (reference: Married/De facto)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/Never Married</td>
<td>.99 .40 – 2.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced/Widowed/Separated</td>
<td>1.10 .37 – 3.17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Duration of unemployment/looking for work: Depression, mastery, financial hardship, social support, and job search

Figure 1 displays the relationship between time looking for work/unemployment and depression, mastery, financial hardship and social support (from family) using descriptive “lowess” function. The four graphs plot these relationships, and suggest that the relationship between weeks looking for work and depression is similar to the relationships between weeks looking for work and mastery, financial hardship and social support. Interestingly, this pattern was also demonstrated for job search intensity and job search intention (see figure 7.2). For each variable, the graph shows a general
negative association with time unemployed. In addition, however, the graphs show that the association is stronger in the initial weeks of looking for work/unemployment (and then weakens as time progresses). This was true of all of the explanatory and job-search variables tested, except for job search expectation, which showed a negative association only after the first 10 weeks of unemployment – suggesting that expectations for job search success were maintained for the initial 10 weeks of unemployment/looking for work, but then declined.

The nonlinear nature of the relationship between depression and weeks unemployed was confirmed using regression analysis (Table 7.3), which identified that the relationship between weeks 1 to 7 and depression differed significantly from weeks 7+. The regression analysis demonstrated that during the early phase of unemployment, there is a significant increase of .43 symptoms on the Goldberg Depression Scale (GDS) associated for each additional week of unemployment. By contrast, there was no significant association between duration of unemployment and depression in the later phase of unemployment.

Table 7.3 Regression analyses assessing the relationship of mental health measure and duration of unemployment (first 9 weeks of unemployment, compared to 9 – 52 weeks of unemployment)

<table>
<thead>
<tr>
<th>DV: GDS</th>
<th>OR 95% CI</th>
<th>Beta 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks Unemployed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 7</td>
<td>1.52 (1.06 – 2.18)</td>
<td>.43 (.11 - .75)</td>
</tr>
<tr>
<td>Weeks 7 – 72</td>
<td>.99 (.99 – 1.01)</td>
<td>-.01 (-.02 - .01)</td>
</tr>
</tbody>
</table>
Figure 7.1 Non-parametric regression graphs between duration of job seeking and depression/mastery/financial hardship/social support (family)

Figure 7.2 Non-parametric regression graphs between duration of job seeking and job search components: Job search intensity, job search expectation and job search intention
Table 7.4 presents both the univariate and multivariate associations between the key factors and job search intensity. Financial hardship demonstrated a strong association with job search intensity, suggesting that the experience of financial hardship was associated with greater job search intensity. This association remained significant, and became even stronger after accounting for the covariates and depression (Models 2 and 3). In addition, duration of unemployment was also significantly associated with job search intensity in the initial period of unemployment. This suggests that individuals’ increase their job search intensity with each week of looking for work/unemployment for the first 7 weeks, though job search intensity does not continue to increase after this time. Depression, mastery, and social support did not show a significant association with job search intensity.

Table 7.5 displays the univariate and independent associations of depression, mastery, social support, financial hardship, and job search intensity with job search expectations. The results show that mastery and social support from friends has a significant and positive univariate association with job search expectations – suggesting that high levels of mastery and high levels of social support from friends are related to greater job search expectations. Whereas financial hardship, high family conflict and depression showed a significant negative univariate association with job search expectations. This implies that experiencing financial hardship, high levels of family conflict and depression were all associated with lower expectations of job search success. High family conflict, a sense of mastery, weeks 7+ looking for work/unemployed, and job search intensity remained significantly associated with job search expectations after accounting for all other variables in the multivariate model.
Job Search Intention

Finally, Table 7.6 displays the univariate and multivariate associations of key factors under investigation with job search intention. There was a significant positive univariate association of job search intention with job search intensity, job search expectations, financial hardship, and weeks 1-7 job seeking/unemployed.

This suggests that an intention to search hard for a job in the future was associated with previous high job search intensity, high job search expectations, experience of financial hardship, and duration of unemployment within the first 7 weeks of searching for work. These results imply that those who have higher job search intentions are more likely to have previously searched hard for work, have high expectations of finding a job, and experience financial hardship. Depression was negatively related to high job search intention, as was social support from family. This may reflect that family support may attenuate the perceived need to find a job. Model 3 shows that, after including the covariates and correlates of depression, high job search expectations and the duration within the first phase of looking for work is positively associated with high job search intentions. However, after accounting for all variables (Model 4) only previous job search intensity demonstrated an independent significant association with job search intention.
\textit{Table 7.4} Job search Intensity: Univariate and Multivariate Regression

<table>
<thead>
<tr>
<th></th>
<th>Univariate</th>
<th>Model 1**</th>
<th>Model 2**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>Std. Error</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Mastery</td>
<td>-.03</td>
<td>.07</td>
<td>.10</td>
</tr>
<tr>
<td>Financial Hardship</td>
<td>1.24*</td>
<td>.54</td>
<td>1.29*</td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High conflict family</td>
<td>.10</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>Positive family support</td>
<td>-.21</td>
<td>.17</td>
<td>-.13</td>
</tr>
<tr>
<td>Positive friend support</td>
<td>.11</td>
<td>.17</td>
<td>.26</td>
</tr>
<tr>
<td>Weeks Unemployed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 7</td>
<td>.81*</td>
<td>.20</td>
<td>.73*</td>
</tr>
<tr>
<td>Weeks 7+</td>
<td>-.02</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Depression</td>
<td>.26</td>
<td>.54</td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$

**Model includes covariates age, marital status, gender and education (finished Yr 12)
<table>
<thead>
<tr>
<th></th>
<th>Univariate</th>
<th>Model 1**</th>
<th>Model 2**</th>
<th>Model 3**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>Std. Error</td>
<td>( \beta )</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Mastery</td>
<td>.37*</td>
<td>.05</td>
<td>.37</td>
<td>.06</td>
</tr>
<tr>
<td>Financial Hardship</td>
<td>-91*</td>
<td>.44</td>
<td>-91*</td>
<td>.03</td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High conflict family</td>
<td>-27*</td>
<td>.09</td>
<td>-35*</td>
<td>.10</td>
</tr>
<tr>
<td>High conflict friend</td>
<td>10</td>
<td>.10</td>
<td>10</td>
<td>.10</td>
</tr>
<tr>
<td>Positive family support</td>
<td>-.12</td>
<td>12</td>
<td>-.22</td>
<td>13</td>
</tr>
<tr>
<td>Positive friend support</td>
<td>.37*</td>
<td>.13</td>
<td>.10</td>
<td>.13</td>
</tr>
<tr>
<td>Weeks Unemployed</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 7</td>
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<td>.17</td>
<td>-.01</td>
<td>.17</td>
</tr>
<tr>
<td>Weeks 7+</td>
<td>-.03*</td>
<td>.01</td>
<td>-.03*</td>
<td>.01</td>
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<tr>
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<td>.42</td>
<td>-.96*</td>
<td>.42</td>
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<td>Job search Intensity</td>
<td>.09</td>
<td>.06</td>
<td>.09</td>
<td>.06</td>
</tr>
</tbody>
</table>

* \( p < .05 \)

** Model includes covariates age, marital status, gender and education (finished Yr 12)
Table 7.6 Job Search Intention: Univariate and Multivariate Regression

<table>
<thead>
<tr>
<th></th>
<th>Univariate</th>
<th>Model 1**</th>
<th>Model 2**</th>
<th>Model 3**</th>
<th>Model 4**</th>
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<tbody>
<tr>
<td></td>
<td>Univariate</td>
<td>Std. Error</td>
<td>Std. Error</td>
<td>Std. Error</td>
<td>Std. Error</td>
</tr>
<tr>
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<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.01</td>
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<tr>
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<td>0.11*</td>
<td>0.18</td>
<td>0.02</td>
<td>0.21</td>
<td>0.02</td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>High conflict family</td>
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<td>0.04</td>
<td>-0.03</td>
<td>0.05</td>
<td>-0.03</td>
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<td>0.04</td>
<td>0.08</td>
<td>0.05</td>
<td>0.08</td>
</tr>
<tr>
<td>Positive family support</td>
<td>-0.15*</td>
<td>0.05</td>
<td>-0.12</td>
<td>0.06</td>
<td>-0.12*</td>
</tr>
<tr>
<td>Positive friend support</td>
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<td>0.05</td>
<td>0.05</td>
<td>0.06</td>
<td>0.05</td>
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<tr>
<td>Weeks Unemployed</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 7</td>
<td>0.28*</td>
<td>0.06</td>
<td>0.25*</td>
<td>0.07</td>
<td>0.25*</td>
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<tr>
<td>Weeks 7+</td>
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<td>-0.02</td>
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<td>-0.02</td>
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<tr>
<td>Depression</td>
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<td>-0.20</td>
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<td>Job search intensity</td>
<td>0.20*</td>
<td>0.02</td>
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</tbody>
</table>

*p < .05

**Model includes covariates age, marital status, gender and education (finished Yr 12)
Discussion

This study explored how three key factors that have been implicated in poorer mental health outcomes in the unemployed compared to the employed – a sense of mastery, social support, and financial hardship – explained depression within an unemployed and underemployed sample, and how these factors were related to aspects of the job search process. The current study found that within a sample of job-seekers mastery, financial hardship and social support were associated with depression. In addition, these factors were shown to have an important impact on job seeking intentions and behaviours.

The first aim of the study was to measure the extent to which financial hardship, social support and mastery explained differences in depression within the population of unemployed and underemployed. The descriptive results demonstrated the disadvantage of this sample with high prevalence rates of depression, low scores on mastery, and high levels of financial hardship. Despite this, financial hardship, mastery and social support all emerged as important variables in explaining individual differences in depression. In addition, this study examined the impact of duration of unemployment/job-seeking on depression and also explored whether the nature of this relationship was similar to that of duration unemployed on a sense of mastery, financial hardship, social support, and job search factors. The graphs displayed in Figure 1 suggest that each variable (depression, mastery, financial hardship, and family social support) showed a similar pattern over time unemployed/looking for a job. That is to say, there is a significant negative association in the early phase of unemployment, which then seems to abate in the later phase. That there are comparable trajectories for each of these variables, may indicate that the changes to mental health, mastery, financial hardship and social support occur in tandem over duration of unemployment/job-seeking. However,
longitudinal research is required to confirm this hypothesis and to study within-person changes, rather than between-person differences.

The second aim was to investigate how the three correlates of depression may interplay with job search processes: job search intensity, job search expectations, and job search intention. The results confirmed previous research which had claimed that financial strain/hardship was a motivational factor for greater job search intensity (Vinokur & Schul, 2002; Wanberg et al., 2010). It was expected that respondents who indicated engaging in high job search intensity might also report higher levels of mastery, but this was not the case. Nor was job search intensity related to levels social support or depression. That financial hardship is related to job search intensity, as well as depression, demonstrates the dual role that it plays in unemployment – it seems to both lead to behaviour that is likely to result in reemployment, while also being associated with poorer mental health outcomes. This relationship between financial hardship and job search intensity may also explain why a sense of mastery is not related to job search intensity. It could be argued that those who experience financial hardship are also the most likely to experience a low sense of mastery, but it is their experience of financial hardship that drives them to engage in intense job search behaviours in spite of their low sense of mastery.

Regarding job search expectations, a number of factors appeared to be related to continuing high expectations of job search success in the face of unemployment. These factors included low levels of financial hardship and family conflict, as well as high levels of mastery and job search intensity. In addition, the results showed that expectations declined with each week of unemployment only in the later phase of unemployed (7 weeks +), but did not vary significantly in the first 7 weeks of unemployment. This suggests that job search expectations for reemployment remain largely stable for the first 7 weeks of unemployment, but in facing continuing
unemployment these expectations overtime decline. Furthermore, having a high sense of mastery, high levels of social support and no experience of financial hardship were all related to high expectations for reemployment. These findings are important, as recent research has demonstrated a positive correlation between job search expectations and job search behaviours (Kanfer et al., 2001; Ślebarska, Moser, & Gunnesch-Luca, 2009). This, of course makes sense – those who believe their job search effort will come be more successful are more likely to search for work. Previous literature has highlighted the importance of high job search expectations in seeking reemployment – thus the current results imply the chances of reemployment are greater amongst those with no experience of financial hardship, high levels of mastery and with greater social support.

Finally, future job search intention was also measured to assess the extent to which an individual intended on searching hard for a job in the following three months. Consistent with the job search intensity results, intention to find work significantly increased with each week of unemployment for the first phase, and abates thereafter. As unemployment becomes a more tangible reality for individuals in the early weeks of unemployment, it may be that the job seekers’ motivation and intention to find work becomes more intense. High job search intention in the future was related to high expectations for job search success and previous job search intensity. These findings suggest consistency in past behavior, expectations and future intent, whereby those who expect to find work are also those more intent on searching for work in the future. A sense of mastery was not found to be directly related to future job search intention, which is consistent with a previous study by Vinokur & Schul (2002) who found that job search motivation was not significantly related to a sense of mastery. However, it may be that a sense of mastery indirectly affects job search intention through job search expectations, though this possibility needs to be investigated further. If so, it may have
important implications for, not only improving job search persistence, but also preventing mental health decline. The only factor that remained significant after accounting for all variables in the multivariate model, however, was prior job search intensity. This suggest that the strongest predictor of job search intention in the future was past job search behaviours. Thus, individuals who believe reemployment is possible and have engaged in high job search behaviours previously, also indicate the highest level of intention to continue to look for work. It would seem, then, that parallel processes exist, with the great paradox being that the predictors of sound mental health are not necessarily the same predictors of behaviours that increase reemployment.

**Limitations**

There are a number of study limitations to acknowledge. The cross-sectional self-report study design is one limitation, as it prevented the opportunity to track individuals’ job search activities and their mental health over time to show causal impact (Blau, Petrucci, & McClendon, 2013; Wanberg et al., 2005). Another limitation related to the cross-sectional design is the self-report measure of future job search intention and whether this is an accurate marker/proxy for actual behaviour in the future. Another possible methodological limitation is the recruitment method, where we utilised opt-in-panels which consist of individuals who are willing to join a pool of online survey participants recruited by email (Baker et al., 2010), as well as the collection of participants from social media groups. As this data collection method does not collect a pool of participants constructed with random selection there may be a self-selection bias amongst those who chose to participate. However, these methodological limitations reflect some of the challenges that accompany collecting potentially sensitive data from a specific hard-to-reach population, such as this sample of individuals who are receiving welfare benefits and looking for work.
Implications for policy

There are a number of important policy implications from this research. For example, the results have implications for policies that recommend a “wait time” before being eligible to receive welfare support. The findings suggest that the first two months of job search/unemployment are critical. During this time there is a steady increase in adversity with job seekers suffering from greater psychological distress, declines in social support, and lower feelings of control over their environment. These effects may be exacerbated by a “wait time” period. However, it appears that the experience of financial hardship results in a continued effort to find work, which is a necessary means to end their financial hardship and improve their standard of living. Though it is unclear whether financial hardship is a necessary incentive to find work, and these results should be interpreted with caution. As financial hardship is also associated with increased risk of depression, there is a risk with punitive policies that seek to motivate unemployed persons into finding work by causing the conditions of welfare to be undesirable. Such policies might actually result in creating a disenfranchised population that come to depend on welfare receipt or transfer to the disability support pension rather than become more empowered to find work.

Implications for practice

Unsurprisingly, in recent times there has been a growth in the development of programs seeking to not only help job seekers find employment, but also as a tool to prevent deterioration in mental health. In Australia, job intervention programs that seek to improve chances of reemployment through occupational skills/personal development training courses (Creed, Bloxsome, & Johnston, 2001; Machin & Creed, 2003) as well as Cognitive Behavioural Therapy (CBT) programs for the long-term unemployed (Harris et al., 2002), have also been shown to have positive effects regarding self-efficacy, self-esteem and reducing feelings of hopelessness.
This study highlights the importance of financial hardship and a sense of mastery as potential levers to improve both mental health and job seeking behaviours. Interventions should not only aim at increasing a sense of mastery/control in job seekers, but could also address expectations and the job seeker’s perception of the utility of their job search behaviours. Interventions also need to be cognisant of the tremendous financial strain in this sample, and the social and personal consequences of economic hardship on their ability to engage proactively within their community. Interventions that seek to distinguish between aspects of the participant’s life that are within their control and aspects that are outside of their control, while teaching the individual to apply the relevant coping strategy (i.e. problem-focused or emotion-focused coping), may enhance a sense of mastery and improve mental health outcomes.

Overall, however, this research suggests that job seekers are not a contented population, satisfied with their joblessness, and using welfare to support their lifestyle. Rather, the results indicate that we should recognize that the lived realities of the unemployed/job seeker are stressful and accompanied by feelings of helplessness and psychological distress.

Conclusions

The provision of good quality and adequate employment for those who are seeking it appears to be an obvious antidote to the negative effects seen in unemployment. However, as unemployment and underemployment rates continue to rise, it is important to understand how to effectively assist/support the unemployed and underemployed better manage job loss and the job search process. For interventions that seek to prevent poor mental health in job seekers, assessing for levels of financial hardship, while increasing an individual’s sense of control and social support, may help to ameliorate some of the effects of unemployment and underemployment on depression. Furthermore, intervention should begin immediately after job loss, as
deterioration in mental health appears to occur in the first two months of unemployment. These findings have some implications for recent social policy which has introduced a ‘wait-time’ – an eight week ‘wait’ period before a job seeker is eligible for welfare support. Given the findings of this study, this policy may inflict greater financial hardship on job seekers, and engender a greater sense of that they have little control over events in their life, possibly leading to even poorer mental health outcomes. On the other hand, while it could be argued that greater financial hardship is likely to result in more intense job search behaviours, it may be that those who experience financial hardship are more likely to accept or take on poor quality or inadequate employment – which may actually perpetuate the poverty cycle.

References


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Chapter Eight
General Discussion

Unemployment is associated with a number of negative health, economic, and social outcomes. In addition, the shifting nature of work from fewer full-time work opportunities to more part-time/casual positions means “underemployment” is becoming a common reality for many Australians. Across three studies, this project set out to explore the association between employment status and mental health, and the mediating role of mastery, financial hardship and social support. The thesis also examined the nature of mental health across time unemployed, and identified factors that may represent potential barriers to reemployment. Four general findings and conclusions can be drawn from these studies: 1) Unemployment and underemployment are strongly related to poor mental health in young adults, even after controlling for a comprehensive number of potential confounding factors, 2) A sense of mastery, financial hardship and social support explain a significant amount of the association between employment status and poor mental health, 3) The mental health trajectory of the unemployed overtime is not linear, 4) Correlates of depression within the unemployed/underemployed impact the job search process. These findings are reviewed and the broader implications discussed.

8.1 General Findings

1. Unemployment and underemployment are strongly related to poor mental health in young adults

The first general finding from this thesis is that unemployment is indeed strongly related to poorer mental health outcomes (Study 1 and 2). This supports existing literature that shows that unemployed persons tend to experience poorer mental health than those who are employed (Creed & Moore, 2006; Dooley & Prause, 2004; Murphy
& Athanasou, 1999; Paul & Moser, 2009). The current project also investigated those who were involuntarily employed in part-time work and were looking for full-time work. Relatively fewer studies have examined the effects of underemployment on mental health, instead often only using discrete or binary categories of employment status (i.e. employed versus unemployed). In the current thesis, those who were part-time employed but looking for full-time work were conceptualised as being “underemployed”. In Study 1 and 2, being underemployed was associated with significantly higher odds of depression (Study 1) and poor mental health (Study 2) when compared to the employed, consistent with previous research (Creed & Moore, 2006; Dooley & Prause, 2004; Eamon & Wu, 2011). Study 1 (S1) and Study 2 (S2) also analysed the effects of employment status on mental health after controlling for a number of potentially confounding variables: age, gender, marital status, dependent children, physical health, and education. While the odds of depression/mental health were attenuated after accounting for the extensive number of covariates, the association with mental health remained significant.

The results revealed that the proportion of persons at risk of mental health problems among the unemployed (S1: 21%; S2: 27%) was more than double the proportion among the employed (S1: 9%; S2: 8%). This pattern of relationship was consistent for the under-employed (S1: 17%; S2: 13%), who had between 1.5 to 2 times the odds of poor mental health compared to the employed. Overall, these findings demonstrate the importance of conceptualising employment status as a continuum (incorporating underemployment) in order to better capture and understand the effects of different employment categories on mental health.
2. *A sense of mastery, financial hardship and social support play an important role in explaining the relationship between employment status and mental health*

Drawing on a psychosocial stress and coping framework, three key variables were identified as important for mediating the association between employment status and poor mental health – a sense of mastery, financial hardship and social support. This framework suggests that the stress process is dynamic and, depending on the transactions between the person and his or her environment, the process is constantly changing (Lazarus & Folkman, 1984). As stressors accumulate, one’s physical or psychological resources become depleted alongside their ability to cope, which in turn increases the probability of psychological distress or mental illness (Thoits 1995).

Overall, this research provided support that the experience of unemployment and underemployment does vary by each individual subject to their perceived sense of control, level of financial hardship, and access to social resources.

Focusing on these variables in particular offers great opportunity and benefits. As they are dynamic and modifiable factors, they might therefore be amenable to intervention. The odds of the risk of depression or poor mental health in Study 1 and Study 2 were all strongly attenuated after the addition of these three variables, suggesting that these factors are key to our understanding of the unemployed and underemployed experience; although, the degree to which they explained the variance varied between the two studies, particularly in relation to underemployment.

While financial hardship was seen to play a consistent explanatory role in the association between mental health and employment status in both Study 1 and Study 2, there was greater variation in the extent to which mastery and social support explained this association across these two studies. In Study 1, social support and a sense of mastery were not identified as important mediators between underemployment and depression, yet in Study 2 these variables showed a strong mediating effect for the
underemployed and poor mental health. Similarly, social support and mastery were shown to explain a larger proportion of the experience between unemployment and depression in Study 1 (compared to the employed), but were shown to have a slightly weaker explanatory effect in Study 2. These differences may be due to the different measures utilised in each study. For example in the case of the outcome measure the Goldberg Depression Scale was used in Study 1 and the MHI-5 was used in Study 2. Different social support measures were also utilised between studies. A further explanation of the variation in findings could be the way in which the part-time-looking-for-full-time (PTLFT) employment status was categorised. In Study 1 the PTLFT group was a category of choice provided to the respondents. In Study 2, the PTLFT category was generated by identifying those who were currently part-time employed, were not looking after children or studying, and who indicated a preference to work more than 30 hours a week. Some participants within this group were working as little as 3 hours a week; therefore it may be that this sub-sample represented a more heterogeneous group than in Study 1. However, it should also be considered that the differences in these findings might indicate a different experience of these employment states between the community and national samples (i.e. relative deprivation).

Despite these differences, all three variables showed importance and relevance in understanding the potential mechanisms through which unemployment and underemployment affects our mental health. Both a high sense of mastery and good social support emerged as a tool that might decrease the odds of depression/mental health problems in the face of adversity, such as inadequate or no employment. However, on the flip side, the fact that the unemployed are more likely to experience low control, more markers of financial hardship, and lower levels of social support has practical significance and paints a picture of the challenging experience that comes with unemployment. These results suggest that the differences in mental health are impacted
by differences in the coping mechanisms and financial resources available to them (Pearlin & Schooler, 1978; Lazarus & Folkman, 1984). Furthermore, it is also consistent with theories that posit that mental health is enhanced by both the manifest (e.g., direct financial) and latent (e.g., interpersonal and psychological) benefits that arise from work (Jahoda, 1981; Fryer, 1984).

However, on the positive side, the current thesis identifies opportunities for intervention. As mentioned above, a sense of mastery, financial hardship and social support all represent factors that can be targeted by intervention. According to Creed and Bartrum (2008), who also observed the effects of mastery and financial hardship in the unemployed, these findings are important for training, treatment and clinicians working with the unemployed, as “increasing personal control might act to reduce the influence of financial strain, low status, poor time structure and feelings of isolation, as well as reduce psychological stress” (p. 473, Creed & Bartrum, 2008). Given the important role these factors play in explaining poor mental health in unemployment and underemployment, it is assumed that increasing a sense of mastery, providing greater social support systems, and providing financial relief could all be utilised as preventative measures for programs seeking to address mental health in unemployment. While focusing on these factors will not be the panacea, in conjunction with understanding the trajectory of mental health with duration of unemployment, policies and programs might be better designed/targeted with these factors in mind.

3. The trajectory of mental health across weeks unemployed/job-seeking may suggest a “shock” period in the first two months of unemployment/job-seeking.

The cumulative stress model of unemployment suggests there should be a linear deterioration of mental health with increasing duration of unemployment. One might expect that financial resources become depleted as savings are used up, or family
financial support becomes more limited (Warr & Jackson, 1984; Warr, Jackson & Banks, 1988). However, most previous research has not examined the temporal effects of unemployment on mental health within the first few months, rather they have focused on the long-term unemployed versus the short-term unemployed in broad discrete categories (usually greater than 6 months unemployed versus less than 6 months unemployed). Thus, Study 2 and 3 were uniquely placed to plot the trajectory of mental health in terms of weeks unemployed/job seeking.

In Study 2, an exploratory analysis was conducted and it was found that there was a significant decline in mental health with increasing duration of unemployment for the first two months of unemployment, but this trend abated after then nine week mark. This finding was replicated in Study 3. While these studies used between-person differences in cross-sectional data, and thus did not take into account within-person change over time, the findings provide a preliminary snapshot of what the longitudinal mental health trajectory may be. The findings also provides some support for the research conducted by Dockery et al. (2006), who found that “an initial deleterious effect of becoming unemployed, which abates as the duration of the spell increases up to a point of around 1 year, after which mental health again starts to deteriorate with further time in unemployment” (p. 13, Dockery 2006). This may suggest some evidence for the theory that individuals make face an initial ‘shock’ of unemployment, followed by adjustment, and eventual resignation (Flatau et al., 2000). One limitation is that these studies largely focused on those who were facing employment for less than one year, restricting our interpretation of mental health in the very long-term unemployed (although Study 3 included participants who were unemployed up to 18 months). In addition, the analyses may be limited by selection effects – that is to say, it is possible that those with better mental health (or social advantage, such as higher education or social networks) may be selected out of the sample due to successfully obtaining work,
leaving those who are more prone to deteriorations in their mental health. While further research is certainly required to explore these effects, the results thus far suggest that the bulk of negative effects of unemployment on mental health occur within the first two months of losing one’s job.

4. Correlates of depression and job-seeking

Study 3 sought to explore how the correlates of depression amongst unemployed/underemployed job seekers were related to aspects of the job seeking process. Initially, the results showed that low mastery and financial hardship were significantly related to the endorsement of high levels of depressive symptoms compared to those who had higher levels of reported mastery and no markers of financial hardship. These findings are important, as they suggest that not only do mastery and financial hardship explain differences between employment states, but that these factors are also important in understanding mental health differences within the inadequately employed. Those who have access to financial and personal resources experience lower risk of depression, compared to those who struggle to pay for basic needs and report low levels of control. It was hypothesised, then, that these same factors may also play a role in either inhibiting or enhancing chances of reemployment through impacting aspects of the job search process, i.e. job search intensity, expectation and intention.

Previous literature has highlighted the “dual role” of financial hardship in its association with both depression and high job search intensity (Vinokur & Schul, 2002), which was confirmed by Study 3’s findings – financial hardship both increases chances of depression, and increases the likelihood of searching intensely for a job. This may provide some explanation for the phenomenon of the ‘cycle of disadvantage’ through inadequate states of employment – i.e. those who experience financial hardship may
also be more likely to accept poor quality employment. If this is the case, those who are socioeconomically disadvantaged are more likely to face poor employment and adverse mental health outcomes.

A sense of mastery emerged as being significantly related to the job-seeker’s expectations that they will find a job in the future. Those with a higher sense of control, unsurprisingly, had higher expectations of finding a job. Furthermore, the results suggested that job search expectations appeared to decline steadily following the first two months of job-seeking/unemployment. Previous literature has highlighted the importance of maintaining high job-search expectations in order to persist in job-seeking in the face of unemployment (Vansteenkiste, Willy, Hans, & Feather, 2005). While high job-search expectations were shown to be significantly related to high future job-search intention, this finding was no longer significant after accounting for previous job-search intensity, perhaps indicating that past unsuccessful job-search experiences play a role in future job-seeking intentions. Further research needs to be conducted to explore this relationship.

8.2 Implications for Practitioners, Policy and Individuals

Implications for Practitioners and Clinicians

Mental health practitioners may consider these results in light of therapeutic strategies and treatments utilised for those who are facing unemployment or underemployment. The employment status of the individual should not be underestimated in the individual’s presentation as a potential pathogenic factor, and should play a major role in the clinician’s formulation (Paul, 2005). The findings of this thesis suggest that if an unemployed or underemployed individual presents with mental health difficulties, it may be important to screen for experiences of financial hardship, expressions of poor control/mastery, and any indications of social isolation. Given that the experience of unemployment can engender a sense of loss of control, therapy can
help the individual distinguish between aspects of their situation that are objectively outside of the individual’s control (such as, not having a job, experiencing financial hardship, being unable to move neighbourhoods) and aspects that are within the individual’s control (such as applying for jobs, time-management and obtaining social support). An example of this approach is featured in Figure 8.1, which utilises different strategies for aspects of a person’s life that are either within or outside their individual control. By doing this, it can help individuals make sense of their feelings of chaos and powerlessness, and elucidate the areas that are amendable to change.

Job intervention programs have been developed to improve the chances of reemployment through developing occupational skills and participating in personal development training courses (Machin & Creed, 2003). In addition, CBT programs for the long-term unemployed have also been shown to have positive effects regarding self-efficacy, self-esteem and reducing feelings of hopelessness (Harris et al., 2010; Machin & Creed, 2003). Therefore, the findings of these studies support the continued emphasis on developing mastery and resilience, and also suggest the importance of tracking employment outcomes (i.e. into underemployment) and screening for financial hardship.

While recent research has shown limitations in the efficacy of CBT as a treatment for depression (Johnsen & Friborg, 2015), it remains one of the most established and researched psychological therapies. Within the context of unemployment, CBT and CBT-related therapies, i.e. Acceptance and Commitment Therapy (ACT), emphasise the role of negative self-talk and disconnection from our goals/values in poor mental health. CBT encourages individuals to challenge negative thoughts or self-talk i.e., “I’m too old, they’ll never hire me” to “I have years of experience, and I could provide valuable experience to this company”. Similarly, ACT encourages individuals to develop a more non-judgemental and mindful perspective of themselves, to provide acceptance to
emotional distress, and to connect to one’s values and goals (Hofman, Sawyer, & Fang, 2010). A recent meta-analysis investigating interventions for job-seekers found that interventions which assisted job seekers to set goals were more effective in helping people gain employment than those which did not (Liu, Wang, & Huang, 2014). Goal setting can help motivate and direct a person towards a desired outcome, and may help to create a sense of control or mastery through achieving small and attainable goals. Furthermore, other research has demonstrated that building self-efficacy through identifying negative thinking and enabling positive self-talk can bolster a job seeker’s performance in the job search process and interviews (Latham & Budworth, 2006). These strategies can be incorporated into individual therapies in order to improve a job seeker’s chances of reemployment, but they are also likely to create positive benefits to one’s mental health and the experience of unemployment.

Figure 8.1 Problem-focused coping versus Emotion-focused coping

Implications for Policy

When considering the results from each study in tandem, they have interesting implications regarding our expectations on job-seekers to find work, given their
potential lack of financial and psycho-social resources. For instance, previous research suggests that those who experience financial hardship are likely to also experience a low sense of mastery (Broman, Lee Hamilton & Hoffman, 2001). Despite this, a low sense of mastery was not related to job-search intensity, or to job-search intention. Perhaps, then, it is not a job-seeker’s sense of mastery/control that contributes to their job search behaviours; rather, the job seeker persists in their search for work because of their inability to pay for basic needs (such as food or housing). Yet, the job seeker who experiences a low sense of mastery may continue to search for work but may perceive that his or her job seeking is futile. Therefore, programs and policies must be mindful of the impact of simply measuring the intensity or effort of job-seeking due to the potentially negative impacts on mental health. The findings of the current research indicate the challenge for policy makers and programs developers is not only how to encourage proactive and effective job search behaviour in the face of unemployment and economic hardship, but importantly how to do this while assisting the unemployed in maintaining their sense of control, hope and social inclusion.

8.3 Limitations

Beyond those mentioned in the individual study chapters, there are two further limitations which require acknowledgement. First, Study 3 was not designed with two time points to assess reemployment. The theoretical and practical assumptions were taken from previous literature, which indicated that job seeking intensity and intention is related to more job interviews, and greater chances of reemployment (Wanberg et al., 2005). Therefore, this thesis is unable to make conclusive statements about whether the experience of financial hardship, low mastery and poor social supported actually impacted reemployment outcomes.

Another limitation of the current research was the focus on outcomes, rather than on mechanism of action. Further understanding the precise mechanism of action for
financial hardship on mastery would enable researchers to amplify and focus interventions, whether aimed at providing for greater financial resources, or changing the way an individual appraises their employment status. It may be that both are required to prevent the deleterious effects of inadequate employment states on mental health, or it may be that one is sufficient and has flow on effects for the other. In turn, it will be important to determine the most efficacious mechanisms for change in order for policies and programs to successfully target these mechanisms and promote good mental health.

8.4 Future Research

The results from this project do not only illustrate the mental health inequalities that exist between different employment states, but they also contribute to our understanding of the mediating mechanisms of financial hardship, mastery and social support. Therefore, future research could explore the effect of interventions or CBT programs that specifically seek to increase a sense of mastery through coping strategies (as mentioned above), social support programs (i.e. family programs for people who are unemployed), and advocacy for clients who continue to face financial hardship.

However, as these factors only partially mediated the association between employment status and depression/mental health, future research may seek to explore other possible explanatory factors in tandem with financial hardship, mastery and social support, such as: stigma, employment commitment, welfare imposed requirements (i.e. activity test requirements), and the utilization of various coping strategies. Furthermore, future research is required to better understand the impact of underemployment, as the findings in the thesis suggested that the mediating mechanisms were different. As previously outlined this may be due to the different categorization of the “underemployed” groups, and as such, defining the terms of underemployment is
important. Finally, future research may wish to emphasise the structural and interpersonal constraints that may contribute to a lack of social mobility.

8.5 Conclusions

This project set out to broadly examine the effect of different employment states on mental health amongst a young adult population, and to measure the extent to which three key factors explained this association – mastery, social support and financial hardship. The project additionally set out to examine the trajectory of mental health across time unemployed/job-seeking, as well as to explore how the correlates of mental health may enhance or obstruct chances of reemployment. What was made clear through these studies is that unemployment and underemployment pose serious risk to poor mental health, and that employment may represent a gateway to financial security, improved social connections, and provide individuals with a sense of control. The effect of unemployment appears to be sudden, with declines in mental health occurring in the first two months of unemployment, before “plateauing” at a level of significant distress. This effect was also reflected for other factors, for instance the job seeker’s intensity and intention appeared to increase in the first two months of unemployment, before plateauing at a high level – perhaps reflecting the ongoing psychological distress, desperation and increased urgency to find work experienced in these employment states as time extends. These results appear to suggest that those who have lost their job *are* searching hard to find work in order to relieve them of their psychological, social, and economic conditions. This does not support the common presentations of the unemployed in the media as “dole bludgers”. Policy and practice, then, should seek to empower this population through the provision of basic economic, social, and empathetic health services that will enable them to participate in the workforce and general community.
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APPENDICES

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Appendix A: Study 2 Supplementary Materials

Title: Financial hardship, mastery and social support: Explaining poor mental health amongst the inadequately employed using data from the HILDA Survey

Authors: Crowe, L., Butterworth, P., & Leach., L.S.

Supplementary Materials

Fixed effects replication: Page 180

Analysis of respondents aged 20 to 54 years: Pages 181-183
Fixed effects replication

Supplementary Table 1 Odds ratios (and 95% confidence intervals) from a series of fixed-effect logistic regression models assessing the relationship between depression and financial hardship, mastery and social support (bold indicates significance).

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<td>1.79 (0.91 – 3.53)</td>
<td>1.49 (0.72 – 3.07)</td>
<td>1.51 (0.73 – 3.11)</td>
<td>1.64 (0.75 – 3.45)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.79 (2.74 – 5.24)</td>
</tr>
<tr>
<td>Financial Difficulty/Hardship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.46 (0.95 – 2.24)</td>
</tr>
<tr>
<td>Pearlin’s Mastery Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.84 (2.54 – 5.78)</td>
</tr>
</tbody>
</table>
Analysis of respondents aged 20 to 54 years

**Supplementary Table 2.** Univariate associations between low scores on the MHI-5 (SF-36) and employment status, financial hardship, low sense of mastery, and poor social support for sample aged 20 to 54 years.

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Prevalence of MH (%)</th>
<th>OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Unemployed</td>
<td>24</td>
<td>6.32 4.64-8.61</td>
</tr>
<tr>
<td>PTLFT</td>
<td>13</td>
<td>2.00 1.45-2.76</td>
</tr>
<tr>
<td>NILF MA</td>
<td>21</td>
<td>5.16 4.02-6.61</td>
</tr>
<tr>
<td>NILF</td>
<td>21</td>
<td>4.93 4.03-6.03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Hardship</th>
<th>Prevalence of MH (%)</th>
<th>OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>Yes, 1 or more markers</td>
<td>19</td>
<td>4.26 3.68-4.94</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mastery</th>
<th>Prevalence of MH (%)</th>
<th>OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>3</td>
<td>13.6 11.12-15.33</td>
</tr>
<tr>
<td>Low</td>
<td>22</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social support</th>
<th>Prevalence of MH (%)</th>
<th>OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>High scores equal low social support</td>
<td>-</td>
<td>4.87 4.39-5.39</td>
</tr>
</tbody>
</table>

**Supplementary Table 3** Odds ratios (and 95% confidence intervals) from a series of logistic regression models assessing the relationship between depression and financial hardship, mastery, and social support (bold indicates significance) for ages 20 – 54 years.

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour-force status (reference: employed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time looking for full-time work</td>
<td>1.45 (1.15 – 1.84)</td>
<td>1.23 (0.96 – 1.58)</td>
<td>1.28 (1.01 – 1.63)</td>
<td>1.35 (1.06 – 1.71)</td>
<td>1.26 (0.96 – 1.57)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2.74 (2.22 – 3.38)</td>
<td>2.28 (1.82 – 2.87)</td>
<td>2.40 (1.93 – 2.98)</td>
<td>2.44 (1.95 – 3.04)</td>
<td>2.19 (1.74 – 2.75)</td>
</tr>
<tr>
<td>NILF MA</td>
<td>2.31 (1.95 – 2.74)</td>
<td>2.02 (1.68 – 2.42)</td>
<td>2.00 (1.68 – 2.39)</td>
<td>2.06 (1.72 – 2.46)</td>
<td>1.83 (1.52 – 2.21)</td>
</tr>
<tr>
<td>NILF</td>
<td>2.13 (1.86 – 2.13)</td>
<td>2.00 (1.72 – 2.33)</td>
<td>1.96 (1.69 – 2.26)</td>
<td>1.95 (1.69 – 2.27)</td>
<td>1.83 (1.57 – 2.13)</td>
</tr>
<tr>
<td>Social Support</td>
<td>2.93 (2.74 – 3.14)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2.34 (2.17 – 2.52)</td>
</tr>
<tr>
<td>Financial Difficulty/Hardship</td>
<td>2.11 (1.89 – 2.34)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.80 (1.61 – 2.01)</td>
</tr>
<tr>
<td>Pearlin’s Mastery Scale</td>
<td>5.98 (5.31 – 6.73)</td>
<td>5.66 (5.01 – 6.39)</td>
<td>3.56 (3.13 – 4.06)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Supplementary Table 4** Fraction of difference between unemployed and employed (as well as PTLFT and employed) persons with depression mediated by socio-demographic, financial hardship, a sense of mastery, and social support measures for ages 20 – 54 years.

<table>
<thead>
<tr>
<th>Mediating Variable</th>
<th>MHI-5 (%)*</th>
<th>Mediating Variable</th>
<th>MHI-5 (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support only</td>
<td>26</td>
<td>Social Support only</td>
<td>49</td>
</tr>
<tr>
<td>Financial Hardship only</td>
<td>20</td>
<td>Financial Hardship only</td>
<td>38</td>
</tr>
<tr>
<td>Mastery only</td>
<td>17</td>
<td>Mastery only</td>
<td>22</td>
</tr>
<tr>
<td>Social support, financial hardship and mastery</td>
<td>46</td>
<td>Social support, financial hardship and mastery</td>
<td>73</td>
</tr>
</tbody>
</table>

*The figures displayed show results after controlling for covariates

**Supplementary Figure 2.** Non-parametric regression between duration of unemployment and mental health (graph)* for ages 20 to 54 years.

*MH reverse coded so that higher scores = poor mental health
Supplementary Table 5 Regression analyses assessing the relationship of mental health measure and duration of unemployment (first 9 weeks of unemployment, compared to 9 – 52 weeks of unemployment) for ages 20 – 54 years (n=634)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weeks Unemployed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeks 1 – 9</td>
<td>0.82 (0.00, 1.63)</td>
<td>0.92 (0.09, 1.75)</td>
</tr>
<tr>
<td>Weeks 9 – 52</td>
<td>-0.02 (-0.12, 0.08)</td>
<td>-0.01 (-0.12, 0.09)</td>
</tr>
<tr>
<td><strong>Age (reference: 20 – 24 years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age 25 – 29 years</td>
<td>2.81 (-2.84, 8.46)</td>
<td></td>
</tr>
<tr>
<td>Age 30 – 34 years</td>
<td>-1.39 (-7.08, 4.31)</td>
<td></td>
</tr>
<tr>
<td>Age 35 – 39 years</td>
<td>-3.90 (-9.83, 2.03)</td>
<td></td>
</tr>
<tr>
<td>Age 40 – 44 years</td>
<td>-2.00 (-7.92, 3.92)</td>
<td></td>
</tr>
<tr>
<td>Age 45 – 49 years</td>
<td>-4.80 (-11.35, 1.75)</td>
<td></td>
</tr>
<tr>
<td>Age 50 – 534 years</td>
<td>-4.61 (-11.32, 2.10)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender (men reference)</strong></td>
<td>1.52 (-1.97, 5.01)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Study 3 Information Sheet

Job Seeker Attitudes and Mental Health
Participant Information Sheet

You are invited to participate in an online survey about job seeker attitudes and mental health. This research is being conducted by a team led by Ms. Laura Crowe, a Doctoral candidate from the Research School of Psychology, College of Medicine, Biology and Environment, at the Australian National University.

Description and Methodology: The purpose of this study is to examine the mental health and wellbeing of those who are receiving the Newstart Allowance. Furthermore, the study seeks to collect information relating to your job seeking attitudes and behaviours in order to understand how this may impact on your mental health.

Participants: Data will be collected from about two hundred participants who are currently in receipt of the Newstart Allowance via an online study.

Use of Data and Feedback: This study is being conducted by Laura Crowe as part of the requirements for her Doctorate in Clinical Psychology degree at the Australian National University under the supervision of Professor Peter Butterworth. The data will be used to inform publications and possible future research. Once the all the data has been collected and analysed, you also have the opportunity to receive feedback on the general results. You can receive this information by sending an email directly to laura.crowe@anu.edu.au.

Voluntary Participation & Withdrawal: Participation in this study is completely voluntary and you are free to withdraw at any time during the completion of the study without prejudice or penalty. If you wish to withdraw, simply stop completing the exercises. If you do withdraw from the study, the materials that you have completed to that point will be deleted and will not be included in the study. If you are not currently receiving the Newstart benefits, you are not eligible to participate in this study.

What does participation in the research request of you? You will be asked to fill out a questionnaire that covers aspects relating to receiving Newstart Allowance, job seeking attitudes, some mental health and psychological questions, as well as general demographic and financial information. Participation in this study should involve no physical or mental discomfort. If, however, you should find any question to be invasive or offensive, you are free to omit answering or participating in that aspect of the study.

Location and Duration: The survey will take approximately 20 to 30 minutes to complete and it will be completed online.

Remuneration: We value your time and your input. All participants will be paid $5. You will be asked to email the researcher with the 8 digit number you receive as confirmation of the survey participation. Participant email addresses will be kept separately from the data in a locked filing cabinet and destroyed at the end of the study.

Risks: Although we have found that most people participating in similar surveys find it a valuable experience, some people find it upsetting to answer questions about their moods and feelings, as well as reflecting on finances or employment status. If the survey upsets you, we suggest that you stop filling it out. If at any point you feel distressed, we recommend that you contact Lifeline on 13 11 14 (further contact details provided below and at the end of the survey). As a psychologist, my interests are in the factors that influence the mental health and wellbeing of welfare recipients, however others may use this research to inform government policy.
Benefits: While the questionnaire does contain some potentially distressing questions, your participation in this study contributes to better research on the impact of receiving Newstart Allowances and the associated requirements on adult’s mental health. Your participation contributes to better research on the impact of receiving Newstart Allowance on adults’ mental health. This information may be important for contributing to the healthcare profession. Furthermore, you may find the project interesting and believe it is important to share your attitudes and beliefs about your experience of receiving Newstart.

Confidentiality: All data collected in this study will be stored confidentially. Confidentiality can be offered only as far as the law allows. Your responses to the survey are anonymous and no personal details will be disclosed in any published materials. All data will be coded in a de-identified manner and subsequently analysed and reported in such a way that responses will not be able to be linked to any individual. Only the nominated researchers, Laura Crowe and Associate Prof Peter Butterworth, will have access to the data. Participant email addresses will be kept separately from the data in a locked filing cabinet and destroyed at the end of the data collection. The 8 digit code required to claim payment is not related to your survey responses.

Data Storage:
- **Where:** The data you provide will only be used for the specific research purposes of this study. Data will be securely stored on servers at the Research School of Psychology, at the Australian National University, with access restricted to authorised personnel.
- **How long:** All information provided will be stored under password protection for at least 5 years after the data is used for publication purposes, after which time data will be deleted.

Queries and Concerns: You are, of course, free to discuss your participation with project staff: Laura Crowe, laura.crowe@anu.edu.au (02) 612 55585 or Peter Butterworth, peter.butterworth@anu.edu.au (supervisor)

Contact Details if in Distress: If you are currently feeling distressed, or begin to feel so during the online survey, please do not continue with the study. There are services to help you. Please talk to your GP, or contact one of the services below:
- Lifeline Australia: 13 11 14 (24 hours), www.lifeline.org.au
- Kids Helpline (for people aged 25 and under): 1800 55 1800 (24 Hours)

Mental health info lines:
- beyondblue: 1300 22 4636 (24 hours), www.beyondblue.org.au
- SANE: 1800 187 263 (9-5), www.sane.org

Financial service counselling:
Commonwealth Financial Counselling service is voluntary, free and confidential, and can be accessed through:
- face-to-face meetings
- the national telephone service on 1800 007 007

Ethics Committee Clearance:
The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager
The ANU Human Research Ethics Committee
The Australian National University
Telephone: +61 2 6125 3427
Email: Human.Ethics.Office@anu.edu.au
Appendix C: Study 3 Questionnaire

I have read and understood the Information Sheet you have given me about the research project, and I have had any questions and concerns about the project addressed to my satisfaction. I agree to participate in the project.

☐ I consent to participate in this survey (1)

If I consent to participate in... Is Not Selected, Then Skip To End of Survey
If 2 Is Not Selected, Then Skip To End of Survey

Are you of Aboriginal or Torres Strait Islander heritage?
☐ No (1)
☐ Yes, Aboriginal (2)
☐ Yes, Torres Strait Islander (3)
☐ Yes, both Aboriginal and Torres Strait Islander (4)

How old are you?

Are you currently in a relationship with someone?
☐ Married or domestic partnership/de facto - first and only marriage (1)
☐ Remarried - second or later marriage (2)
☐ Separated or Divorced (3)
☐ Widowed (4)
☐ Single (Never Been Married) (5)

What is the highest level of schooling you have completed?
☐ All of primary (1)
☐ Some of secondary (2)
☐ All of secondary (Year 12 Certificate) (3)
☐ Tertiary education (Bachelor Degree/PhD) (4)

Do you have any dependent children?
☐ Yes (if yes, how many) (1) ______________________
☐ No (2)

What is your gender?
☐ Male (1)
☐ Female (2)
☐ Other (3)

Do you currently receive any income from wages or salary?
☐ Yes (1)
☐ No (2)

If No Is Selected, Then Skip To Some people who are receiving the New...
What is your main source of income? For example, if 60% of your income came from Newstart, but 40% came from part-time work, the answer would be "NewStart".
- Wage or Salary (1)
- Newstart Allowance (2)
- Youth Support (3)
- 50% comes from a Centrelink payment, 50% comes from wage or salary (4)
- Other (5) ____________________

Roughly, how much do you earn fortnightly?
______ In a two week period (1)

Some people who are receiving the Newstart Allowance also work. How would you describe your current employment status?
- Employed full-time (1)
- Employed part-time/casually, looking for full-time work (2)
- Employed part-time or casually (but not looking for full-time work) (3)
- Unemployed, looking for work (4)
- Not in the labour force, i.e. not employed, but not looking for work (5)

If Employed full-time Is Selected, Then Skip To Which of the following best describes...

Have you ever been employed full time in the past?
- Yes (1)
- No (2)

Which of the following best describes the position you hold/held within your business or organisation?
- Managerial position (1)
- Supervisory position (2)
- Non-management position (3)

Have you or your family had to go without things you really needed in the last year because you were short of money?
- Yes, Often (1)
- Yes, Sometimes (2)
- No (3)

Over the last year did any of the following happen to you because of a shortage of money?

<table>
<thead>
<tr>
<th>Event</th>
<th>Yes (1)</th>
<th>No (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pawned or sold something</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Went without meals</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Was unable to heat home</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Asked for help from welfare/community organizations</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
Next are some specific questions about your health and how you have been feeling in the last 4 weeks. In the last 4 weeks:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes (1)</th>
<th>No (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you felt keyed up or on edge? (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been worrying a lot? (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been irritable? (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had difficulty relaxing? (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been sleeping poorly? (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had headaches or neck aches? (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had any of the following: trembling, tingling, dizzy spells, sweating, diarrhoea or needing to pass water more often than usual? (7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been worried about your health? (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had difficulty falling asleep? (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been lacking energy? (10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you lost interest in things? (11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you lost confidence in yourself? (12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you felt hopeless? (13)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had difficulty concentrating? (14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you lost weight (due to poor appetite)? (15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you been waking early? (16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you felt slowed up? (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you tended to feel worse in the mornings? (18)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How strongly do you agree or disagree with the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree (1)</th>
<th>Agree (2)</th>
<th>Disagree (3)</th>
<th>Strongly Disagree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is really no way I can solve some of the problems I have.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Sometimes I feel that I'm being pushed around in life.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I have little control over the things that happen to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I can do just about anything I really set my mind to do.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I often feel helpless in dealing with the problems of life.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>What happens to me in the future mostly depends on me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>There is little I can do to change many of the important things in my life.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

In the next four months, how hard will you try to get a job where you'd work over 20 hours a week?

- Not at all hard 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Extremely hard 7 (7)

To what extent do you feel it is foolish or wise to try hard to get a job over the next four months?

- Extremely foolish 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Extremely Wise 7 (7)
To what extent do you feel it is harmful or beneficial to try hard to get a job over the next four months?

- Extremely harmful 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Extremely beneficial 7 (7)

To what extent do you feel it is useless or useful to try hard to get a job over the next four months?

- Extremely useless 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Extremely useful 7 (7)

At any time in the last 4 weeks have you looked for paid work?

- No - have not looked for work in last 4 weeks (1)
- Yes - looked for full-time work only (2)
- Yes - looked for part-time or casual work only (3)
- Yes - looked for any work (fulltime or part-time) (4)

In the last four months, how hard did you try to find a job where you'd work over 20 hours a week?

- Not at all hard 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- Extremely hard 7 (7)

During the past month, how often did you actively search for a job?

- Not at all 1 (1)
- Occasionally 2 (2)
- Frequently 3 (3)
- Every day 4 (4)
During the past month, how often did you engage in the following:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not at all 1 (1)</th>
<th>Occasionally 2 (2)</th>
<th>Frequently 3 (3)</th>
<th>Every Day 4 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading and searching through paper advertisements (1)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Checking job offers of through employment agencies, i.e. Job Services Australia (2)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Searching through advertisements over the Internet (3)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Asking friends and acquaintances if they've heard about any jobs (4)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Personally calling or visiting various employers (5)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Looking for influential people and informal connections (6)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

At any time in the last 4 weeks have you done any of these things? (Tick as many as relevant)
- [ ] Written, phoned or applied in person to an employer for work (1)
- [ ] Answered an advertisement for a job (2)
- [ ] Checked factory noticeboards, or used the touchscreens at Centrelink offices (3)
- [ ] Been registered with Centrelink as a jobseeker (4)
- [ ] Checked or registered with an employment agency (5)

Have you done anything else to find a job?
- [ ] Advertised or tendered for work (1)
- [ ] Contacted friends/relatives (2)
- [ ] Looked in newspapers but did not actually answer an advertisement for a job (3)
- [ ] Other (4) ____________________
Since you began looking for work in this most recent period, have you had trouble getting a job for any of these reasons? (Tick as many as are relevant to you.)

- Own ill health or disability (1)
- Employers thought you were too young or too old (2)
- Hours were unsuitable (3)
- Transport problems or it was too far to travel (4)
- Did not have the required education, training or skills (5)
- Did not have enough work experience (6)
- Language difficulties (7)
- No jobs in line of work (8)
- Too many applicants for the available jobs (9)
- Just no jobs at all (10)

What is the MAIN difficulty you have had in getting a job?

- Own ill health or disability (1)
- Employers thought you were too young or too old (2)
- Hours were unsuitable (3)
- Transport problems or it was too far to travel (4)
- Did not have the required education, training or skills (5)
- Did not have enough work experience (6)
- Language difficulties (7)
- No jobs in line of work (8)
- Too many applicants for the available jobs (9)
- Just no jobs at all (10)

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am optimistic about finding a job in the near future (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have been rejected so many times during application interviews that I don’t expect to find a job any longer (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t expect to find a job in the near future (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Looking below, since you have been unemployed this period, have you been required by Centrelink or a Job Network provider to do any of the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Tick as many as relevant: (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time study (1)</td>
<td></td>
</tr>
<tr>
<td>Part-time paid work (2)</td>
<td></td>
</tr>
<tr>
<td>Voluntary unpaid work (3)</td>
<td></td>
</tr>
<tr>
<td>Community Work organised by a Community Work Coordinator (4)</td>
<td></td>
</tr>
<tr>
<td>Work for the Dole (5)</td>
<td></td>
</tr>
<tr>
<td>Job Search Training (training to search for jobs, write applications and prepare interviews) (6)</td>
<td></td>
</tr>
<tr>
<td>Approved literacy/numeracy training (7)</td>
<td></td>
</tr>
<tr>
<td>Green Corps (8)</td>
<td></td>
</tr>
<tr>
<td>Job Placement Employment and Training (JPET) (9)</td>
<td></td>
</tr>
<tr>
<td>Intensive Assistance (one-to-one help to plan your return to work and find and keep a job) (10)</td>
<td></td>
</tr>
<tr>
<td>Community Development Employment Projects (11)</td>
<td></td>
</tr>
<tr>
<td>Relocating to an area of better employment prospects (12)</td>
<td></td>
</tr>
<tr>
<td>New Apprenticeship Access Program (training to get into a new apprenticeship) (13)</td>
<td></td>
</tr>
<tr>
<td>Advanced English for Migrants (14)</td>
<td></td>
</tr>
<tr>
<td>Job Pathway Program (15)</td>
<td></td>
</tr>
<tr>
<td>Defence Force Reserve (16)</td>
<td></td>
</tr>
<tr>
<td>None of the Above (17)</td>
<td></td>
</tr>
</tbody>
</table>

Are you still currently undertaking any of these activities?
- Yes (1)
- No (2)

Have your Centrelink payments been suspended due to a failure to meet Activity Test requirements during in this period?
- Yes (1)
- No (2)

What were the reasons for failing to meet the Activity Test requirements? (Tick as many as required)
- Homelessness (1)
- Parenting responsibilities (2)
- Communication difficulties with Centrelink (3)
- Living in regional or remote areas (4)
- Alcohol dependency issues (5)
- Mental health issues (6)
What do you think the MAIN reason was for being unable to meet the Activity Test requirements?
- Homelessness (1)
- Parenting responsibilities (2)
- Communication difficulties with Centrelink (3)
- Living in regional or remote areas (4)
- Alcohol dependency issues (5)
- Mental health issues (6)

The next group of questions are about your relationships with other people.

<table>
<thead>
<tr>
<th>How often do friends make you feel cared for? (1)</th>
<th>Often (1)</th>
<th>Sometimes (2)</th>
<th>Rarely (3)</th>
<th>Never (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do they express interest in how you are doing? (2)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do friends make too many demands on you? (3)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do they criticise you? (4)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do friends create tensions or arguments with you? (5)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do family make you feel cared for? (6)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do family express interest in how you are doing? (7)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do they make too many demands on you? (8)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do family criticise you? (9)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>How often do they create tensions or arguments with you? (10)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Appendix D: Study 3 Debrief Sheet

We thank you for your interest and participation in the study. Our experience is that many people participate in our surveys because they want to contribute to research that may benefit others. The research into how different components of income support can impact individual’s mental health and wellbeing is incredibly limited. The conditions that promote and improve the chances of employment for individuals receiving the Newstart allowance remain largely unknown. This research seeks to identify some of the mechanisms through which being on income support might contribute to or exacerbate poor mental health outcomes for welfare support recipients, through assessing and understanding the recipient’s attitudes towards income support and behaviours. We believe this study is important, and will go toward improving the assessment and treatment of mental health in the community.

Contact Details for More Information
If you have further queries about the project, please contact the Primary Investigator:
Laura Crowe, Doctorate in Clinical Psychology Candidate
Research School of Psychology
College of Medicine, Biology and Environment
The Australian National University
Telephone: (02) 612 55585
Email: laura.crowe@anu.edu.au

The Primary Investigator’s supervisor can also be contacted: Prof. Peter Butterworth
Email: Peter.Butterworth@anu.edu.au

Contact Details if in Distress:
If you are currently feeling distressed, or begin to feel so during the online survey, please do not continue with the study. There are services to help you. Please talk to your GP, or contact one of the services below:

- Lifeline Australia: 13 11 14 (24 hours), www.lifeline.org.au
- Kids Helpline (for people aged 25 and under): 1800 55 1800 (24 Hours)
- Suicide call-back service: 1300 659 467 (24 hours), www.suicidecallbackservice.org.au
- New South Wales: NSW Health or 1800 011 511
- Victoria: Vic Health or 1300 651 251 (SuicideLine)
- Queensland: Queensland Health or 13 43 25 (Referral service)
- Western Australia: WA Health or 1800 676 822 (metro) or 1800 552 002 (rural/remote)
- South Australia: SA Health or 13 14 65 (Crisis team)
- Tasmania: Tasmania Health or 1800 332 388 (Crisis team)
- Australian Capital Territory: ACT Health or 1800 629 354 (Crisis team)
- Northern Territory: NT Health or 1800 682 288 (Crisis team)

Mental health info lines:
beyondblue: 1300 22 4636 (24 hours), www.beyondblue.org.au
SANE: 1800 187 263 (9-5), www.sane.org

Financial service counselling:
Commonwealth Financial Counselling service is voluntary, free and confidential, and can be accessed through:
- face-to-face meetings
- the national telephone service on 1800 007 007*
Appendix E: Study 3 Poster

Are you currently receiving the Newstart Allowance? Are you interested in sharing your opinions, thoughts and feelings relating to this experience?

Investigating Newstart: Job seeker attitudes and mental health
Conducted by Ms. Laura Crowe, a Doctoral candidate from the Research School of Psychology, College of Medicine, Biology and Environment, at the Australian National University.

• Why should I participate? Researchers at the Australian National University are conducting a study investigating the factors related to your experience of unemployment and your mental health. It is hoped that this research will lead to the development of programs which aim to provide support for those who are receiving the Newstart Allowance.

• Who should participate? You are suitable for this study if:
  1. You are a current recipient of the Newstart Allowance
  2. You live in Australia
  3. You are aged 18 years or over

• What does this study involve? Being in this study is completely voluntary – you are not under any obligation to consent and, if you do consent, you can withdraw at any time during the completion of the survey. If you decide to participate, you will be asked to complete an online survey that you can complete on your computer or your smartphone. Completing the survey will take between 15-30 minutes.

• Get paid! We value your time and your input: All participants will be paid $5. You will be asked to email the researcher with a unique code that will be generated upon completion to confirm your participation.

• What will I be asked? You will be asked questions about your emotional health, your experience, attitudes and behaviours relating to job seeking and Newstart allowance, as well as some demographic and financial details.

• To get more information about this study, or to participate, please visit http://bit.ly/newstarts survey or email laura.crowe@anu.edu.au. We can give you more information about the project and answer any questions that you may have!