Methods

Given the overlapping, co-occurring, and compounding associations between economic factors, mental health, and suicidal behaviours at multiple levels, and the likelihood research may be conducted across several disciplines with varying underlying conceptual orientations (e.g., public health and epidemiology, psychiatry, economics) the process of conducting an evidence check that gave sufficient balance to each target outcome was challenging, and a systematic literature review was not feasible in the time frame. An selective review methodology was selected so as to provide new insight on existing research topics whilst also striving for balanced synthesis of such knowledge across various research disciplines. A version of this review has been previously published (see Mathieu et al., 2022).

Databases and search terms

This review sampled relevant articles from PubMed, Scopus, Google Scholar, as well as the reference lists of relevant studies, reviews, and meta-analyses. The search terms used included a combination of: suicid*, suicidal ideation, suicide attempt*, suicide thoughts, selfharm, self-harm, self-injur*, self injur*, prevent*, unemploy*, underemploy*, debt*, financial strain, job insecurity, financial hardship, job precarity, financial wellbeing, financial counselling, welfare policies, unemployment benefits, public health, mental health, active labour market programmes, un- employment benefits, unemployment protection, employment protection, unemployment insurance, unemployment compensation, social protection, income support, social security, labor market, labour market, upskill*, job upskil*, welfare. Searches were limited to those published from 2010 onwards and in the English language.

Inclusion and exclusion criteria

Inclusion criteria included peer-reviewed articles that examined information relevant to the two research questions:

(1) What is the role of economic factors such as un/underemployment, financial hardship, financial wellbeing, job insecurity, and economic crisis on suicidal behaviours, self-harm, and ideation?
(2) What available evidence is there for the effectiveness of interventions addressing economic factors in reducing suicidal behaviours and ideation at the individual and/or population level?

Articles were excluded if they were not original research written in the English language, had been published outside of the inclusion period (2010 to present), were not based on the working age population (15-70 years). The primary outcome measure in all articles was suicidal behaviours and ideation. However, when examining interventions at the individual and aggregate level, as might be expected, we noted a general paucity of interventions at both levels and inclusion criteria were extended to include mental health and wellbeing as outcome measures. While problematic gambling can be accompanied by significant financial strain (often concealed from, or at the detriment to, close relationships), and is associated with both depressive symptoms and suicidality (e.g., Gray et al., 2021; Jolly et al., 2021; Karlsson & Hakansson, 2018)), this was outside the scope and purpose of the current review.

Screening of search results

The title and abstract of each study were screened in relation to the inclusion and exclusion criteria. Given the cross-cutting nature of economic factors and associated interventions at the individual and population level, this selective review included studies conducted at individual and aggregate levels, and did not limit by the study design.

Data analysis/synthesis

Studies were prioritised if they were a systematic review or meta-analysis. For empirical studies, those that included more than one year of data, were population-based data linkage studies or were deemed higher quality as per the established levels of evidence (Oxford Centre for Evidence-Based Medicine, 2009) were prioritised. Subgroups included study focus (e.g., un/underemployment, job insecurity, debt etc.), study setting (e.g., international focus, Australian focus), individual and aggregate level studies. Key findings were highlighted alongside supporting in-depth narrative summaries and theoretical synthesis. Conclusions were drawn with reference to prominent theoretical conceptual models, and finally, key recommendations are provided.

Findings

Each research question is addressed in turn with key findings highlighted and discussed. Suicidal behaviours and economic factors can be measured at the aggregate level (e.g., suicide rates, unemployment rates, aggregate government expenditure on welfare payments) or individual level (e.g., self-reported suicidal ideation, financial hardship, diagnoses). This is clarified where applicable.

Question 1: What is the role of economic factors such as un/underemployment, financial hardship, financial wellbeing, job insecurity, and economic crisis on suicidal behaviours, self-harm, and ideation?

Unemployment, economic crisis, recession, and suicidal behaviour and ideation

Key Finding 1

Economic crisis and unemployment are associated with increased risk of suicidal behaviour at the aggregate and individual level.

Economic crisis, recession, and unemployment – aggregate level

According to Durkheim (2002 [1897]), rapid social changes can cause "anomie" where societal norms are no longer acceptable, or accurately reflective of social reality, and which increases the rates of suicides in the society/community (anomic suicides). Luo et al. (2011) define economic crisis as "the state of affairs broken by sudden and severe economic recession" (p. 1139). The main characteristics of an economic recession are increases in unemployment and drop in gross domestic product (GDP) (Luo et al., 2011). Suicide mortality at the time economic recession and crises, has been the interest of numerous studies.

A notable body of research has focused on comparing the periods before and after, but also looking at the association with unemployment at the time of crisis. A systematic review by Frasquilho et al. (2016) focused on multiple aspects to identify associations between recession, socioeconomic factors and mental health in the literature in 2004-2014. Investigating the effects of pre-and post-recession changes in suicidal behaviours, they identified 8 aggregate level studies using ecological study designs all focusing on the impact of 2008 Global Financial Crisis (GFC). Studies were from Europe and Northern America and all except one analysed suicide rates. In general studies showed an increase in

suicide rates after recession commencement, particularly for men and among the middle-aged. The only study analysing suicide attempts in Andalusia, Spain also showed a significant rise in hospital recorded suicide attempts after the recession onset (Córdoba-Doña et al., 2014).

A good example of a time-trend analysis of the impact of the 2008 GFC on suicide is a by Chang et al. (2013) including 54 countries: 27 in Europe, 18 in the Americas, 8 in Asia and one in Africa was not presented in the previous review. Their analysis assumed that excess suicides were caused by the onset of the GFC in 2008, therefore, excess suicides in 2009 were calculated using the trend line on 2000-2007 as the basis for expected suicides. They found 5,124 excess suicides for males: the increase was found for males in Europe (4.2%) and in the Americas (6.4%), but not in other countries (mainly Asian). The largest increase was found for males aged 15-24 years in Europe and aged 45-64 in the Americas. There was no change for females in Europe, and the increase was smaller for females compared to males in the Americas. The authors also indicated that rises were associated with the magnitude of change in unemployment and were more prominent in countries with lower suicide rates before the crisis (Chang et al., 2013).

The systematic review by Frasquilho et al. (2016), noted above, also identified studies analysing correlation with the macroeconomic factors such as unemployment rate and GDP. They found 16 ecological studies in 2004-2014 showing strong associations between unemployment and suicide rates predominantly in European and North American countries covering varying time periods. A study by Norstrom and Gronqvist (2015) covered the most countries (30 countries from the EU, North America and Australia) and involved the longest time period (1960-2012). They showed that the association between unemployment and suicide was strongest in the countries which had the least supportive unemployment protection (Eastern and Southern Europe). The association was significant for males in all country groups (grouped by strength of the welfare system) except Scandinavia, but for females it was significant only in Eastern Europe (i.e., lowest levels of protection). The interaction term capturing the possible excess effect of unemployment during the financial crisis was not significant.

Another systematic review covered a time period between 1992 and 2014, and identified 38 studies on the aggregate level analysing associations between macroeconomic factors (mainly unemployment rate and GDP) and suicide rates (Oyesanya et al., 2015). They identified 31 studies that found positive associations (i.e., increased unemployment rate, decreased GDP associated with increased suicide

rates), two studies that found no association, three that were inconclusive, and two that showed a negative association between economic recession and suicide rate.

A comprehensive analysis by Nordt et al. (2015) aimed to improve understanding of the effect of unemployment on suicide rates by analysing suicide mortality between 2000 and 2011, including other economic variables such as GDP, growth rate and inflation, using longitudinal modelling. Their methodology allows separate estimates to be made of excess suicides due to unemployment and due to the economic crisis (Webb & Kapur, 2015). The 63 countries analysed were categorised into four world geographic regions which were the Americas, northern and western Europe, southern and eastern Europe and non-Americas and non-Europe (including Australia). Only unemployment rate was associated with similar effects in the regions analysed. The best fit model was the non-linear, six-month time-lagged unemployment rate, displaying similar estimates for each world region. This means that rates of suicide tended to increase six months prior to unemployment rates rising, which might indicate the effect of job insecurity and work-related stress on suicide rates. Nevertheless, across all world regions between 2000 and 2011, 20-30% of suicides were related to unemployment. In 2007 and 2009, unemployment was associated with an estimate of 41,148 and 46,131 suicides respectively, suggesting that the recession was responsible for an additional 4,983 (unemployment related) suicides. This means unemployment was responsible for a nine-fold increase in suicides than those attributed to other impacts of the economic crisis, such as inflation (Nordt et al, 2015). However, unemployment does not cover all the effects and impacts of the crisis. Recessions can also lead to potential cuts in public funding from different fields (i.e., fiscal austerity), inclusive of health care, job insecurity, lower income, depts, and bankruptcies which impact the lives of individuals and their families (Webb & Kapur, 2015).

A recent international analysis further confirms the association between unemployment and suicide rates. The first study with a worldwide reach of 175 countries between 1991 and 2017, showed that 1% increase in the unemployment rate globally is associated with a rise in male suicide rate by 1% relative to female (Meda et al., 2022). A stronger association of unemployment and male suicide rates is particularly evident in high income countries (4%). Comparisons by age groups showed that people aged 30-59 years were more impacted whereby a 1% increase in unemployment increased suicide rates by 2-3%. Their further analysis of GDP showed that an increase of the GDP per capita by every US$1,000 was associated with a decline in suicide rate by 2%. Interestingly a country-based analysis did not show any association between the GDP and suicide rate in Australia and the US (Meda et al., 2022).

A few Australian studies have also looked on aggregate level links between unemployment and suicide rates. Milner et al (2013a) analysed the association between suicide rates and length of unemployment, considering labour market opportunities (measured in the magnitude of the increase and decreases in annual unemployment rates) during 1985 to 2006. Results suggested that longer durations of unemployment (over four weeks) were associated with higher suicide rates in males at times of decreasing unemployment rates in Australia (after adjusting for alcohol consumption, divorce and birth rates, employed population per capita, international arrivals, weekly earning, ratio of women to men in employment and 5-year periods). However, for the period of growing unemployment, longer unemployment duration was associated with lower suicide rates in males. The authors suggested that hopelessness and social stigma among unemployed people at times of low unemployment (when having a job is more normative), may cause frustration and self-blame (Milner et al, 2013b). The effect modification was stronger for males in the age groups 25–34 and 55–64 years and weaker in the age groups 15–24 and 44–54 years.

Page et al. (2013) analysed the cohort effect in Australia between 1907 and 2010, and also the role of unemployment (currently seeking employment) and under-employment (people who are in part-time employment and seeking additional work) for the period of 1978 to 2010. A significant increasing birth cohort effect was found for males, especially for males born after 1970-1974, which indicates that cohorts experiencing high rates of suicides in the 1990s have continuously had higher rates compared to earlier cohorts. The authors suggested that it is possible this cohort has been impacted by changes in the Australian labour market by providing increased opportunity for under-employment and casual employment, and the rising suicide rates in this cohort are consistent with the 'frustration-aggression' hypothesis, where frustration is triggered by unmet expectations to have work and make a career which is especially strong for men and male norms (Page et al., 2013).

A recent Australian study (Botha & Nguyen, 2022) analysed monthly data of suicide rates, unemployment, and the consumer sentiment index by gender in Feb 1990 until Sep 2018. Their study is the first analysing the link between suicide mortality and consumer sentiment, which captures the perception and expectations of personal and wider economic conditions. The study showed male suicide rates increased with a rise in unemployment rate but declined when consumer sentiment improved. Interestingly, suicide rates did not react to a decline in unemployment and to the worsening of the consumer sentiment. The association was the opposite for females, where suicide rates increased significantly when consumer sentiment deteriorated and declined when unemployment

rates dropped (Botha & Nguyen, 2022). The authors emphasised that Australian suicide prevention policies should target unemployment and financial problems as important risk factors, with special attention paid to men during major economic recessions.

Nevertheless, aggregated level studies might be subject to the ecological fallacy and therefore are unable to explain the link between macro and micro. They have been useful for generating a number of hypotheses; however, there remain questions of causality (direct or indirect), other factors involved, and the effect of media at the time of the economic crisis. Individual level studies should provide a further insight into the link between unemployment and suicide.

Unemployment - Individual level

Several systematic literature reviews and meta-analyses have focused on the links between unemployment and suicidal behaviours and ideation at the individual level. A recent meta-analysis examining the association between unemployment and suicidality (including suicide, suicide attempt and suicidal ideation) incorporated results from 54 studies across the world, although mainly from Western countries, and to a lesser degree Asian and African based studies (Amiri, 2021). The results showed a significant association between unemployment and suicide mortality (odds ratio [OR]: 1.87, 95%CI: 1.40-2.50), suicide attempts (OR: 1.54, 95%CI: 1.26-1.89), and suicidal ideation (OR: 1.94, 95%CI: 1.61-2.34). However, the study included different study types and can therefore only note associations.

The link between unemployment and suicidal behaviour at the individual level is not clearcut. The most appropriate study designs for testing causality are cohort studies, which enable researchers to follow individuals over longer periods of time. Most large-scale prospective cohort studies come from Scandinavian countries with national registries able to link information and follow cohorts over long periods of time. Those studies enable one to understand the effect of short and long-term unemployment and the contribution of other factors at various points in peoples' lives. Two systematic reviews and meta-analyses have specifically examined the unemployment-suicide relationship utilising individual-level cohort studies (Milner et al., 2013b; Milner et al., 2014a).

Milner et al. (2014a) provided a conceptual review in addition to the meta-analysis. As noted in the introduction of the current report, there are two models that theorise how mental health and economic factors may contribute to suicide risk, and the paper aimed to add further clarity around

those concepts. Several cohort studies have shown that unemployment is linked to suicide; however, the link between the two is complex (Milner et al., 2014a).

(1) The non-causal link suggests direct health, or more specifically mental health related selection ('social selection'), assumes that people with pre-existing mental health disorders have a higher tendency to become unemployed and are therefore at increased risk of suicide – unemployment is an additional factor (confounding) which together with pre-existing conditions makes a person more vulnerable (Milner et al., 2014a). The review by Milner et al. (2014a) showed a number of cohort studies have made this assumption and indeed their meta-analysis showed that after adjusting for other factors, the link between unemployment and suicide reduced; however, it still remained significant (RR: 1.15 95CI: 1.00-1.30).

(2) The causal hypothesis ('social causation') assumes that unemployment increases the risk of suicide through stress and mental health problems caused by unemployment. However, if mental disorders are considered as a mediator between employment status and suicide, then adjusting for mental disorders is not correct from a methodological perspective and may underestimate the impact of unemployment. Nevertheless, a small number of cohort studies analysing duration of unemployment, have shown that long-term unemployment is associated with a higher risk of suicide compared to short-term unemployment or to employed populations, with the greatest risk found within five years (as presented in another review by Milner et al. (2013b). Mental health problems are not the only mediating factors; others include financial stress due to loss of income, changes in health behaviours and others (Mäki & Martikainen, 2012).

It is important to consider that all studies included in the meta-analyses by Milner et al came from Scandinavian countries, which have comprehensive social welfare systems and there is potential for their support systems to mitigate the effect of short-term unemployment. Therefore, applicability of these results to other countries might be dubious. Furthermore, comparisons across the studies are hindered by differences in the definitions of unemployment and suicidal behaviour and ideation, study designs and statistical modelling (method and inclusion of confounding factors).

A more recent meta-analysis of longitudinal studies focused on the link between demographic factors including employment status and suicidal behaviour and ideation (Huang et al., 2017). They reported that employment status did increase the risk of suicide (RR: 1.41; 95CI: 1.05-1.90) and suicidal ideation (RR: 1.23; 95CI: 1.02-1.49), but not suicide attempt (OR: 1.12; 95CI: 0.74-1.70). However, their analysis grouped unemployed with people with disabilities, therefore, it is not possible to distinguish the specific effect of unemployment.

Only the meta-analysis we described by Amiri (2021) also examined gender differences. The findings indicated a significant association between increased odds of suicidality and unemployment in men (OR: 1.97, 95%CI: 1.44-2.70) and women (OR: 1.87, 95%CI: 1.48-2.37) with only a slight difference between sex found (Amiri, 2021). For example a recent study from New Zealand, linking Census information about employment with the suicide mortality and hospitalisation for intentional self-harm showed, after adjusting for confounders, unemployment was associated with suicide and self-harm similarly for men (adjusted OR: 1.48, 95% CI: 1.20-1.84 and adjusted OR: 1.55, 95% CI: 1.45-1.68 respectively) and women (adjusted OR: 1.39, 95% CI: 1.13-1.37 and adjusted OR: 1.39, 95% CI: 1.13-1.37 respectively) (Cunningham et al., 2021). Nevertheless, some recent results seem to contradict the above findings. A US study utilising data from the National Longitudinal Mortality Study including 1.5 million people, identified that sex was a moderator in the association between unemployment (looking for work) and suicide (Kposowa et al., 2019). More specifically, the association was stronger for women (adjusted RR: 2.99, 95% CI: 2.05-4.37) compared to men (adjusted RR: 1.39, 95% CI: 1.13-1.37) after adjusting for demographic variables. An Australian study, utilising the National Coroner's Information System, showed that unemployed/economically inactive males had over four times the risk of suicide compared to the employed, over eight times the risk for females (Milner et al., 2014b). However, a further analysis of the potential impact of the GFC on suicide showed a significant increase in suicides in economically inactive/unemployed males (22% in 2008, $p<0.001$) and females (12% in 2007, $p<0.001$). Nevertheless, suicide also increased among economically active males (7% rise in 2007 $p=0.003$), but not among employed females.

Australian Ten to Men cohort study

A notable body of research by Milner and colleagues utilises the *Ten to Men* cohort study, a large scale Australian longitudinal study involving 16,000 men and boys since 2013 (https://tentomen.org.au/). This study provides a valuable opportunity to analyse factors impacting mens' health including suicidality over time. Milner et al. (2020) examined employment status at Wave 1 (2013-2014) including unemployed men (actively looking for work) and men not in the workforce (not looking for work) and their subsequent suicidal ideation and suicide attempts at Wave 2 (2015-2016). After adjusting for confounders, such as mental health, while also omitting any participant that reported suicidal ideation or suicide attempts at Wave 1, unemployed men, and men not in the labour force had significantly higher odds of suicidal ideation in last 12 months (OR: 1.91; 95% CI: 1.30-2.82, and OR: 1.68; 95% CI: 1.09-2.60, respectively) (Milner et al., 2020). Furthermore, men not in the workforce had significantly higher odds of reporting suicide attempts (OR: 2.32; 95% CI: 1.0-5.12), compared to

employed men; however, no significant association was found for unemployed men (Milner et al., 2020).

Other analyses of the Ten to Men cohort study have examined the relationship between job stressors, inclusive of job insecurity and casual/fixed-term contracts, and suicidal ideation (Milner et al., 2017; Milner et al., 2018). The results indicated individuals who experienced job insecurity or casual employment and fixed term employment reported significantly higher suicidal ideation (Milner et al., 2017; Milner et al., 2018). Men who experienced job insecurity (OR: 1.69, 95% CI: 1.44-1.99) or casual/fixed term contracts (OR: 1.32, 95% CI: 1.09-1.61) reported significantly increased odds of suicidal ideation at Wave 1 (Milner et al., 2017). This result was further supported as job insecurity (OR: 1.35, 95% CI: 1.13–1.61) and casual employment or fixed-term contracts (OR: 1.30, 1.01–1.67) at Wave 1 increased the odds of suicidal ideation at Wave 2 after adjustment of possible confounders. These relationships weakened after adjusting for mental health, but remained significant (Milner et al., 2018). However, the authors highlighted that the temporal sequence of the mental health-job stressor relationship could not be established due to the study design. As such, the two theoretical models described earlier may apply to their findings demonstrating the complexity of these relationship pathways (Milner et al., 2018).

Financial problems and suicidality

Key Finding 2

Financial problems: debt, financial strain are associated with increased risk of suicidal behaviour and ideation at the individual level.

Economic problems such as unemployment and underemployment are highly interrelated with financial problems such as debt and financial strain. It cannot be assumed that just one in isolation leads to suicidality, but rather a combination of them. There are further complexities when considering the issue of definitions. French and Vigne (2019) define "*financial strain* as anxiety, worry or feelings of not coping created by economic or financial events. This condition is therefore synonymous with 'financial/economic hardship', 'financial/economic stress' or 'financial difficulties' or 'inability to cope financially'. We regard economic problems such as unemployment, poverty, arrears, debt or even over-indebtedness as necessary but insufficient explanatory factors for financial strain." (p.150). Although there are some aggregate level studies (e.g., Korhonen et al., 2016, 2017)

showing a link between economic hardship based on consumption and suicide on the aggregate level) the majority of research does analyse individual level links.

There is some research focusing specifically on the relationship between debt, financial strain, suicidal behaviour and ideation at the individual level. A systematic review and meta-analysis conducted by Richardson et al. (2013) examined unsecured debt (e.g., credit) and suicide in nine studies, finding a pooled OR demonstrated significant association between debt and suicide (OR: 7.9, 95% CI: 5.21-12.0) and suicidal behaviours (OR: 5.76, 95% CI: 2.97-11.18). Another systematic review focusing on indebtedness and its health impacts referred to five studies analysing debt and suicidality and concluded that people with unmet loan payments were more likely to experience suicidal ideation (Turunen & Hiilamo, 2014). Interestingly, a US study found that people who were admitted to the trauma centre with a suicide attempt had significantly higher odds for becoming bankrupt in the following two years compared to those admitted with an accident, after adjusting for several confounders (OR: 2.10, 95% CI: 1.29-3.42) (Kidger et al., 2011). This finding was stronger for females. Odds of personal bankruptcy in the two years before a suicide attempt were somewhat weaker (OR: 1.68, 95% CI: 1.06-2.67). The results revealed that filing for bankruptcy is not an isolated event, and does not reflect the end or the beginning of financial hardship and suicidality (Kidger et al., 2011).

Some other studies show further the interrelatedness of financial problems with unemployment and other factors. For example, in a recent US cohort study Elbogen et al. (2020) found that cumulative financial strain, which encompassed financial debt/crisis, unemployment, past homelessness, and low-income, was predictive of suicide attempts (OR: 1.53, 95% CI: 1.32-1.77) and suicidal ideation (OR: 1.44, 95% CI: 1.33-1.55) between Waves 1 (2001-2002) and 2 (2004-2005) after controlling for demographic and clinical covariates. Moreover, when examining these factors independently, at Wave 1 financial debt/crisis and unemployment were predictive of suicide attempts and suicidal ideation between the two waves (Elbogen et al., 2020).

A few recent studies analysing different aspects of financial strain in South Korea utilised the Korean Welfare Panel Study with over 10,000 participants. Kim and You (2019) analysed late bill payments and after adjusting for sociodemographic variables and self-reported depressive symptoms, suicide attempts were significantly positively associated with late payments. More specifically, people with late bill payments had increased odds of suicide attempts rising with the number of late payments (one - OR: 5.46; 95% CI: 1.82–16.39, two or more – OR: 7.44 95% CI: 2.89–19.20) compared with those without late payments (Kim & You, 2019). Furthermore, having one late payment was not significantly

associated with suicidal ideation, but having two or more late payments increased the odds of suicidal ideation significantly (OR: 2.11, 95% CI: 1.22–3.65) (Kim & You, 2019). Another analysis examined 7 waves from the same dataset (Choi et al., 2021). Financial hardship was measured as a composite of multiple questions (including difficulties in paying for rent, utilities, healthy food, use of medical services, other credit problems) and change over time, and was categorised as no hardship, resolved, emergent and persistent over two years (Choi et al., 2021). The results showed a significant association between financial hardship and suicidal ideation. In particular, after adjusting for confounding factors, emergent and persistent hardship were each associated with suicidal ideation for both genders and all age groups. Additionally, for resolved hardships, the association with suicidal ideation was still significant for men and women aged 65 years and older (Choi et al., 2021).

COVID-19 pandemic, economic factors, and suicidality

Key Finding 3

It is currently unclear what impact economic factors, during or as a result of, the COVID-19 pandemic may have on suicidal behaviour and ideation. The majority of data so far were from earlier stages of the pandemic and economic fallout continues to unfold. There is, therefore, a strong need for ongoing research.

The COVID-19 pandemic has led to increased unemployment, financial strain, and economic recession which may further lead to a rise of mental health problems and suicidal behaviour (Brenner & Bhugra, 2020). At early stages of the pandemic several expert opinion pieces (Gunnell et al., 2020; John et al., 2020; Wasserman et al., 2020), and predictions emerged (McIntyre & Lee, 2020). All refer to the potential impact of economic conditions on the aggregate and individual level, which are likely to lead to an increase in suicidal behaviour and ideation. An ecological study investigated the expected effects of the COVID-19 related economic turmoil by modelling predicted suicide rates in 38 OECD countries in 2000-2017, to examine the association with unemployment (Brenner & Bhugra, 2020). The results suggested that unemployment was significantly associated with higher suicide rates in men aged 15-64 years, particularly for men aged 40-64 years. Conversely, this relationship was much weaker for women, with the unemployment-suicide relationship significant for girls and women aged 15-24 and 35-74 only (Brenner & Bhugra, 2020). However, despite the authors' noting the relevance of their modelling in the context of the COVID-19 pandemic, they did not make any attempt to predict future changes in suicide rates. McIntyre and Lee (2020) did attempt to make predictions for Canada by using different scenarios in relation to the change of unemployment. Nevertheless, this is fraught with

methodological challenges considering the multiple factors impacting suicidal behaviours, with some potentially having a protective effect at the time of crisis such as togetherness, resilience and others (Sinyor et al., 2021).

To date, the largest analysis of suicides in the early months of the COVID-19 pandemic utilised suicide data from 21 high to middle income countries between January 2019 to July 2020, as compared with the time period before the pandemic (Pirkis et al., 2021). This included data from the Australian states of New South Wales, Queensland, and Victoria. The interrupted time series analyses showed there had not been a significant rise in suicide mortality since the start of the pandemic. Conversely, in 12 countries or specific areas, the results indicated a reduction in the rate of suicide, including in New South Wales, Australia (RR: 0.81, 95% CI: 0.72-0.91) (Pirkis et al., 2021). The study concluded that in the initial stages of the pandemic, the rate of suicide in the countries examined either reduced or did not change (Pirkis et al., 2021). The authors suggested that the government response regarding increased financial support for mental health services, psychosocial support services, and direct financial support may be possible protective factors that have helped to buffer the initial impact of the COVID-19 pandemic. Despite the study findings, the authors cautioned that careful ongoing observation and monitoring is required as the COVID-19 pandemic continues in order to assess the long-term impact. This includes observation of trends once governmental supports return to pre-pandemic levels or are further cutback to cope with any resulting recession (Pirkis et al., 2021).

A further analysis was undertaken of real-time data from the state suicide registers in Queensland, Victoria, and Tasmania, Australia, was conducted between January 2017 to August 2020 (Clapperton et al., 2021). There was a significant increase in suicides among young men (< 25 years) (RR: 1.89, 95% CI: 1.11-3.23) when compared to the pre-COVID-19 period and early COVID-19 period (Clapperton et al., 2021). In the unadjusted analysis, when examining the impact of unemployment, there was an overall increase in suicides (RR: 1.53, 95% CI: 1.18-1.96), more specifically in men aged 25-64 years (RR: 1.53, 95% CI: 1.12-2.05) yet the result did not remain significant in adjusted analyses (Clapperton et al., 2021). However, for the remaining categories including financial stressors, the suicide numbers had not significantly changed (Clapperton et al., 2021). As above, it could be that in the initial stages of the pandemic it was too early to detect any changes and ongoing observation is required.

A few longitudinal studies have also analysed economic stressors at the time of COVID-19. For example, a Canadian repeated cross-sectional study investigated the prevalence of suicidal ideation in a nationally representative sample during the COVID-19 pandemic at three time periods between

2020 to 2021 (McAuliffe et al., 2021). The results indicated the prevalence of suicidal ideation is increasing over the course of the pandemic. Analysis of COVID-19 related concerns showed that after adjustment for sociodemographic factors, individuals who were experiencing financial stressors, such as concerns about debt and paying bills, had increased risk of suicidal ideation (OR: 2.48, 95% CI: 1.97-3.13). Furthermore, worries about job loss were also associated with increased odds of suicidal ideation (OR: 2.61, 95% CI: 2.07-3.29) (McAuliffe et al., 2021).

A longitudinal online study from the UK over two timepoints in May and September 2020, examined if COVID-19 related financial stress and social isolation were associated with suicidal ideation and behaviour in a small sample (*n*=370) (Stevenson & Wakefield, 2021). Financial stress that was deemed by the respondent as COVID-19 related at time point 1 was significantly associated with suicidal ideation and behaviour at time 2, (*p*=0.01). Depression and loneliness were also found to significantly mediate the relationship between financial stress and suicidal ideation and behaviour at time point 2 (Stevenson & Wakefield, 2021).

As the impact of the COVID-19 pandemic continues to unfold, it is important that ongoing and high-quality surveillance of suicidal behaviour and ideation continues. This is critical for determining the overall impact of COVID-19 on suicidal behaviours, and in particular, the economic impact of such an unprecedented pandemic on a global scale. Based upon the literature in this review it appears that suicide rates have not increased in the early stages of the pandemic, and may in fact, have decreased (Pirkis et al., 2021). However, it does appear that financial concerns attributed to the pandemic may contribute to later suicidal ideation and distress which may have an ongoing impact on suicidal behaviours in the future.

Question 2: What available evidence is there for the effectiveness of interventions addressing economic factors in reducing suicidal behaviours and ideation at the individual and/or population level?

The protective role of policy and government-based interventions

Key Finding 4

Unemployment benefits, employment protection legislation, minimum wage and active labour market programs may reduce suicide at the population level, particularly for men. However, the research is somewhat limited and mixed, and it is not clear what impact they have at the individual level. Further, there were no identified studies or reviews investigating outcomes in relation to suicide attempts, self-harm, or suicidal ideation. Studies were largely ecological as this type of policy level intervention does not lend itself easily to more robust research designs. Overall, more research is required, particularly in relation to individual level outcomes, cost-effectiveness of such policy interventions, and in the Australian context.

Government policies and expenditure directed towards mitigating the impact of harmful economic circumstances (e.g., unemployment) may not be traditionally conceived as suicide prevention interventions. However, given the important associations described above it is conceivable that such activities may reduce suicidal behaviours and ideation, as well as improve overall mental health and wellbeing (Haw et al., 2015). A recent systematic literature review of studies published up until October 2018 sought to determine whether government level responses to economic factors ameliorated the relationship between unemployment and suicide (Shand et al., 2021). Studies were included if they were published in English, and examined unemployment policy (e.g., benefits, employment protection legislation) on suicide rates (national or regional). Only six ecological studies were identified, each spanning several years and multiple high-income countries/states. Overall, the authors concluded there was evidence to suggest government unemployment supports were associated with a reduction in suicide rates. This has important implications for suicide prevention in Australia. Two of the included studies (Reeves et al., 2015; Stuckler et al., 2009) examined the impact of active labour market programmes (ALMPS) across an overlapping cross-national sample in the European Union. ALMPS are defined by the Organisation for Economic Co-operation and Development (OECD) as all social expenditure, besides education, with the intent of improving chances of gainful employment or an increase in earning capacity (OECD, 2002). Both studies found that for every

increase in unit of spending on ALMPs there was an associated decrease in suicides (albeit only small 0.026-0.038%). However, neither study found any mitigating impact of employment benefit payments by either total aggregate spending (Stuckler et al., 2009) or income replacement per unemployed person (Reeves et al., 2015). In contrast, three further studies identified in the review found higher unemployment benefits were associated with significant decreases in suicide rates (Cylus et al., 2014), particularly in men (Antonakakis & Collins, 2015; Norstrom & Gronqvist, 2015). Fiscal austerity and *reduced* government spending was associated with a short (1.38%), medium (2.42%), and long-term (3.32%) rise in suicide rates in older aged men (Antonakakis & Collins, 2015). In these studies, the operationalisation of employment benefits was more encompassing and attempted to capture overall 'generosity' of benefit. For instance, maximum rate multiplied by maximum duration of eligibility (Cylus et al., 2014), gross replacement rate (Antonakakis & Collins, 2015), as well as the incorporation of wait times, qualifying conditions et cetera (Norstrom & Gronqvist, 2015). The final study included in the review included high income countries within the OECD (18 European countries, Japan, and Republic of Korea) across 1994-2010 (Kim & Cho, 2017). This study investigated the impact of employment protection legislation (against unfair dismissal) in *younger* adults (25-34 years) and found that for those with regular work contracts there was a significant protective effect of legislation regardless of sex, whereas for temporary workers effects were only observed in men aged 30-34 years of age. This was also found in older aged men (Antonakakis & Collins, 2015). Overall, the review noted that further research was needed and would benefit from more rigorous testing (e.g., cohort designs), to investigate impacts at the individual level (e.g., qualitative designs), as well as to evaluate the possible impact on suicide attempts or self-harm (Shand et al., 2021).

More recently, several studies published after the systematic review (Shand et al., 2021), have also investigated the impact of government-based interventions and overall suicide rates. A recent ecological study in Italy examined the relationship between rates of unemployment and suicide in men and women separately from 1990 to 2014, with a focus on the recession, and investigated whether ALMPs moderated this relationship (Mattei et al., 2018). Average ALMP spending per head did appear to moderate the unemployment-suicide relationship in men aged 45-54 who were in a central region in Italy, whereby a 1% increase in ALMP spending was correlated with a 0.45% decrease in suicide rates among men in this subgroup (Mattei et al., 2018). No significant impact was noted for women in this age group and region, or for men and women in any other age groups located in or outside of central Italy (Mattei et al., 2018). The authors suggest that a lack of adequate funding may have influenced the absence of widespread findings across subgroups as spending was far below

minimums reported in other studies ($125USD per head in the current study versus $190USD suggested by (Stuckler et al., 2009).

Regarding the *accessibility* of unemployment benefits/insurance, rates of insurance recipiency (as a measure of eligibility and implementation not total benefit spending ratio or benefit duration) were deemed potentially protective at a population level for those with highest rates of suicide such as men and those aged 45-64 years in all states of the US from 2000-2015 although findings were not significant (Kaufman, Livingston, et al., 2020). In another US study, an increase in the mandated minimum wage by $1USD reduced suicide by 6% in those with less education (aged 18-64) whereas there was no impact for those with college degrees even when adjusting for age, gender and ethnicity, using data from all states in USA (1990-1995) (Kaufman, Salas-Hernández, et al., 2020). This relationship was stronger in periods of high unemployment and attenuated in periods of low unemployment, with the authors concluding that policies aiming to improve economic circumstance of those in lower socioeconomic positions, in particular, can have a protective effect on suicide (see Kaufman, Salas-Hernández, et al., 2020).

It appears that despite the well-established connection between economic factors and recession with suicidal behaviours there is a comparatively small body of research investigating the protective role of government policy interventions with regards to suicide prevention, especially when considering suicide attempts, self-harm and suicidal ideation, and none that we are aware have been conducted in Australia. However, as noted by Shand and colleagues (2021) suicide is an 'extreme' outcome from unemployment. Other literature reviews have noted the beneficial impact of ALMP initiatives and benefit payments/social protection spending on physical and mental wellbeing, including depressive symptoms (see McGrath et al., 2021; Puig-Barrachina et al., 2020) for review). However, this may be less protective than actual employment for men (Wang et al., 2021) or for those with insecure jobs (Voßemer et al., 2017). In contrast to suicidal behaviours, these findings were demonstrated mostly at the individual level (e.g., self-reported depression, anxiety, wellbeing).

Furthermore, given the complex and compounding associations with other prominent risk factors for suicidal behaviours, and the likely co-occurring role of social causation and social selection described earlier, it has been suggested that government policy to minimise the harmful effects of alcohol and other drugs, reduce homelessness, promote social inclusion, facilitate equitable access to primary (mental) health care, encourage the responsible media reporting of suicidal behaviours (see Haw et al., 2015), and problematic gambling (Financial Counselling Australia and Suicide Prevention Australia,

2022) may be additional (and often established) primary preventative measures that may also ameliorate the association between economic factors and suicide. According to social causation, addressing economic factors has the potential of reducing mental health difficulties and by extension suicidal behaviours, and according to social selection may prevent an intensification of already present risk factors for suicidal behaviours. Given these models' likely overlap (Haw et al., 2015) it appears policy level interventions may be beneficial in protecting against suicidal behaviours and distress; however, more research is required.

Individual level interventions addressing employment and personal financial circumstances

Key Finding 5

There was a lack of evidence as to the effectiveness of tailored financial focused suicide prevention interventions. There was some evidence that these interventions (e.g., 'job club' groups) may improve depressive symptoms over time, which could have implications for suicide prevention by extension. Similarly, there was limited evaluation of financial counselling services in Australia, yet it appears there may be some benefit to overall wellbeing. Future research is required.

In addition to government policies, there is the potential to provide tailored interventions for economic advice and assistance that may aid in the prevention of suicidal behaviours at the individual level. Research, however, is sorely lacking. A small-scale feasibility study of a randomised control trial in the United Kingdom (UK) used a mixed methods design to examine the feasibility and acceptability of an intervention (Help for People with money, employment, or housing problems 'HOPE' service) (Barnes et al., 2018). The intervention provided psychosocial support for individuals who presented to the emergency department following self-harm or acute distress due to (accumulating) employment, financial, or welfare issues (Barnes et al., 2018). The novel and assertive intervention was developed in recognition of the vast difficulties people have in navigating the employment benefits and social welfare system, application processes, delays, and meeting eligibility requirements. Even though these policies and benefits are designed to assist, have been cited as a source of huge stress in the lead up to self-harm emergency presentations, among others (Barnes et al., 2017; Barnes et al., 2016). In the intervention group (n = 13), participants received a series of one-on-one tailored financial assistance sessions (e.g., interpretation of official documentation, benefits advice, connection with community resources and mental health care) supplemented with motivational interviewing designed to resolve ambivalence, boost independence, decision-making

skills, and confidence when addressing their financial problems. Sessions were mainly carried out in the home, however, also involved travel to debt advice agencies. In the control group (*n* = 9), participants were signposted to support organisations. Qualitative feedback from participants (*n* = 19 randomised 2:1) and workers providing the intervention suggest there was benefit to the program, including assistance with resolving financial difficulties (Barnes et al., 2018). However, being a feasibility trial, it is necessary for future research to determine actual effectiveness of the intervention as compared to the control group.

Given a lack of information on suicidal behaviours, we broadened our focus to examine literature that has investigated financially focused interventions that aim to improve mental health and wellbeing. In a systematic review of community interventions, McGrath et al. (2021) examined the effectiveness of interventions aimed at acute financial uncertainty, such as financial strain, job loss, and debt, in improving mental health outcomes. Searches concluded in August 2019 and studies were included if they reported mental health outcomes in working age adults (18-64 years) in high income countries and used experimental, quasi-experimental or observational designs. A total of 15 studies met the inclusion criteria. Two studies evaluated telephone debt advice interventions (Kim & Garman, 2013; Pleasence & Balmer, 2007). One study in the UK found no significant changes in anxiety at the 20 week follow up, and due to a high attrition rate, the 12-month follow up was not completed (Pleasence & Balmer, 2007). The second study in the US found only small improvements in overall health, which included stress, however mental health was not assessed independently (Kim & Garman, 2013). A further seven studies examined the effectiveness of welfare advice services co-located within healthcare settings and found mixed results, one examined food insecurity interventions (e.g., food banks), and two examined gatekeeper signposting and referring to community supports (see McGrath et al., 2021). Overall, the authors noted that findings were limited by poor quality design (e.g., small, uncontrolled studies) yet interventions appeared useful in improving financial distress; however, it was not clear as to the effectiveness on mental health outcomes (McGrath et al., 2021).

An earlier systematic literature review focused exclusively on randomised control trials investigating interventions targeting debt and unemployment, including debt advice, gatekeeper training, job skills training et cetera (Moore et al., 2017). Studies were excluded if participants had serious mental illness, were not of working age, were part of a specific group (e.g., single mothers), or were focused on rehabilitation into the workforce for those with serious physical or mental health problems. Despite overlap in the search period, only two studies overlapped with the previous review by McGrath et al. (2021) (one assessing debt advice hotline, and one assessing a group job skills training intervention).

This review found, based on multiple trials, intensive 1-to-2-week job skills and self-efficacy training ('job clubs') were effective in reducing depression for up to two years. However, results were less clear for unemployment, and cognitive-behavioural therapy for long-term unemployed people; and those in lower socioeconomic groups were effective in reducing symptoms of depression and improving re-employment. Only one study identified examining the effectiveness of a debt advice hotline (overlapping with (McGrath et al., 2021) as well as one trial each for various other psychological interventions (e.g., imagery, journaling) and thus evidence was deemed limited (Moore et al., 2017). Unfortunately, this review was limited by its strict exclusion criteria which meant that studies did not include participants who may be at particular risk of unemployment of financial hardship and also suicide (Moore et al., 2017).

Altogether these reviews demonstrate the effectiveness of financial and employment-based interventions on reducing mental health symptoms, particularly depressive symptoms. Given associations between mental health and suicidal behaviours this could have implications for suicide prevention (Moore et al., 2017). These reviews provide inconclusive evidence as to the effectiveness of debt advice interventions (e.g., helplines) and trials had difficulties with recruitment and attrition overall. We could not find any independent evaluations of Australia's National Debt Hotline, particularly in relation to broader mental health concerns beyond financial stress. This could be, in part, a result of the challenges of evaluating helpline effectiveness (if calls are anonymous, one-off, brief etc.) as well as funding. Yet helpline data does provide useful information regarding the types of financial issues faced by Australians. Furthermore, information from annual reports indicate that as awareness of services grows (e.g., in response to disasters such as bushfires or COVID-19) helpline access increases, which demonstrates a certain level of need (Financial Counselling Australia, 2021). Several recommendations for the coordination of financial counselling in Australia have been made, including for future research and consistent data collection across services (and financial counselling in general) including the coordination of helpline services (Sylvan, 2019). These recommendations have been supported by the Australian government (Department of Social Services, 2020). Financial counselling itself extends beyond debt and budget advice to include advocacy, liaison/negotiation with financial institutions and creditors, support, help accessing grants or other concessions (especially in times of crisis such as natural disasters or COVID-19), and all services are free of charge to clients experiencing financial hardship (https://www.financialcounsellingaustralia.org.au/about-financial-counselling/). The peak body Financial Counselling Australia also engage in policy directed activities, including the recent roundtable into the impact of gambling on suicides, in partnership with Suicide Prevention Australia (Financial Counselling Australia and Suicide Prevention Australia, 2022).

In recognition of the role of job insecurity and financial hardship in suicidal behaviours for men (working in blue collar industries), tailored suicide prevention programs such as MATES in Construction provide connection to financial counsellors where needed (Gullestrup et al., 2011). MATES in Construction is an evidence-based suicide prevention program, however, the specific impact of financial counselling has not yet been tested. Nevertheless, financial counselling services have been shown to improve self-reported financial stress and mental wellbeing (Brackertz, 2014), as well as improved mental health in clients as perceived by financial counsellors (Financial Counselling Australia, 2020). According to the social selection model this may have a flow on effect in reducing suicides. In a recent qualitative study of financial counselling clients in South Australia (*n* =36, 5 focus groups), financial counsellors were seen as a real lifeline to people experiencing significant financial distress, yet their services are hidden or overshadowed by 'for-profit' programs and within a system perceived as 'failing' financially insecure Australians (Pollard et al., 2020). Indeed, in this study, welfare systems were deemed unhelpful, uncaring, and administrative processes served could result in substantial stress (e.g., lengthy wait times, eligibility requirements, unnecessary backward-forward bureaucratic steps). As mentioned earlier, the obtuse difficulties of navigating benefits and welfare systems have been directly linked in qualitative studies to self-harm instances requiring medical attention among other stressors (Barnes et al., 2017; Barnes et al., 2016). Furthermore, as previously discussed, overall 'generosity' of benefits may be particularly useful in reducing suicide at the aggregate level (Shand et al., 2021).

Interventions implemented during and in response to COVID-19

Key Finding 6

There is a lack of research and various complicating factors that make conclusions regarding the effectiveness of interventions difficult at this time. Nevertheless, there is some expert opinion and discussion (based upon literature discussed above) which suggests the unprecedent social welfare measures implemented by governments internationally may have had a protective effect against suicidal behaviours.

There has been considerable and well justified concern regarding the unfolding impact of the COVID-19 pandemic on both suicidal behaviours and economic crisis, including unemployment. As a result, governments around the world have introduced unprecedented social welfare packages. As described earlier, policy-based employment interventions may have beneficial outcomes on suicide rates,

including during periods of economic recession; however, this is not clear for suicide attempts and self-harm (Shand et al., 2021). Furthermore, most evidence across both levels were for ALMPs and employment focused interventions or policies which do not apply to the COVID-19 pandemic where whole industries were affected (e.g., 'gig' economy, hospitality, tourism, transport) and opportunities for (re)employment were necessarily limited due to health restrictions. Therefore, government activities have largely been directed at raising expenditure on employment benefits, such as in Australia, the introduction of JobKeeper payments. Financial Counselling Australia acknowledge these measures likely prevented the expected increase in demand for financial counselling services, and that this lack of increase in demand highlights most clients receiving benefits who do require their services do so because these do not adequately cover daily expenses in non-COVID times (Financial Counselling Australia, 2021). Indeed, as described earlier, overall generosity of benefits has been linked to reduced suicide at the aggregate level (Shand et al., 2021) and it remains to be seen what impact this has had on other suicidal behaviours and at the individual level. Nevertheless, suicide rates did not rise in the initial stages of the COVID-19 pandemic (Pirkis et al., 2021), and employment benefits and social welfare payments have been theorised as possibly underlying mechanisms explaining this finding (Tanaka & Okamoto, 2021). Recent research examined data derived from helpline calls in 19 countries, focusing on the first and subsequent waves of the COVID-19 pandemic. The relationship between call types, income support offered, and the lockdown policies in place in specific countries were investigated (Brülhart et al., 2021). Overall, the results suggested that helpline calls increased and peaked 6-weeks after the start of the pandemic, with an increase in calls related to fear and loneliness. However, there was a decline in calls related to suicidal ideation. The reduction in calls related to suicidal ideation may have been attributed to a shift of focus to the concern of others, or their fears of COVID-19 infection (Brülhart et al., 2021). Measured by an income support index, data from two of the largest helpline samples in France and Germany were further analysed. Results indicated an increase in infection rates and more generous income support were significantly associated with a lower number of suicide-related calls in France ($p = 0.004$) and Germany ($p < 0.001$) and it was suggested that for individuals affected economically by the pandemic, the income support provided may have helped to reduce mental distress. However, there is a need for ongoing research to provide a deeper understanding of financially focused intervention or policy during COVID-19 at the individual level.

Methodological considerations

There are several points to consider when interpreting the findings from this review. First, as may be expected, there was a lack of research investigating interventions and protective factors aimed at

addressing economic circumstances and suicidal behaviours and ideation. Of the studies that were identified, many were of low quality or small sample size and had issues with attrition/drop-out. This is important as the high dropout rates may suggest these types of financially focused interventions are not acceptable to financially stressed individuals. For example, it may be possible that these interventions based on information giving do not account for the complex interrelated and intersecting difficulties that serve as reinforcing barriers, or alternatively, is it something about those who are financially stressed (or their circumstances) that make it more difficult to engage them and therefore interventions such as HOPE (Barnes et al., 2018) provide additional motivational or psychological components. Based on the available evidence it is not possible to know at this stage. This lack of research was most noted at the individual level. There is a strong need for more studies that examine the impact of individual and modifiable protective factors on suicidal behaviours and ideation (e.g., financial wellbeing, resilience), including in situations of long-term unemployment or economic recession.

Strengths and limitations of the current review

Given our review focuses on all types of economic factors (recession, unemployment, underemployment, financial strain, debt, etc.), there was an imbalance in the extent of literature available across the different economic factors and levels. Therefore, a systematic literature review was not feasible. Instead, we utilised an integrative review methodology which is useful for integrating information across fields of research and practice to provide fresh insight into the role of economic factors on suicidal behaviours and ideation, and possible effective interventions. This approach may have introduced some bias into findings. Nevertheless, we did focus on synthesising information from systematic reviews and meta-analyses, high-quality cohort studies, or studies utilising multiple years and countries. Findings were discussed in relation to prominent theoretical models.

Recommendations

Based upon the findings of the current review we make several recommendations that may serve to mitigate risk at the aggregate and individual level as per (overlapping) social selection and social causation models. The complex web of associations between economic factors and other prominent risk factors for suicidal behaviours and ideation (e.g., mental health, substance use) warrants establishing or enhancing responsive, effective, and compassionate interventions that are equitable

and accessible in addressing these factors at the individual and aggregate level (e.g., Haw et al., 2015). More specifically, based on the current review we recommend:

- Higher and more generous welfare payments (i.e., accessible, timely) should be established or maintained as they may have a protective effect against suicide at the aggregate level particularly for those in more vulnerable or at-risk groups (e.g., lower education, youth, men during periods of low unemployment, those with unstable housing, vulnerable industries). This may also be particularly relevant during periods of economic crisis and recession, where the complex and accumulative impact of financial stress in contributing to mental health problems and suicidal behaviours may in turn create a demand on health and mental health services which would be under resourced in times of reduced government spending.
- The development and evaluation of individual level support services based on promising evidence from small-scale international studies (e.g., HOPE; Barnes et al., 2018). However, it is recommended that people with lived and living experience of suicide and financial hardship (unemployment, debt, recipient of benefits) are involved in co-designing these interventions to maximise motivation (and minimise attrition).
- Regular suicide prevention training of financial counsellors, Centrelink staff, bank staff, and other socioeconomic services as important 'gatekeepers'. Ideally, these programs would be co-designed collaboratively with those who have lived and living experience of suicidality and financial hardship, and are accredited (e.g., Suicide Prevention Australia). These programs must also be designed to achieve certain core competencies published in the literature and be evidence informed (Hawgood et al., 2021).
- Promoting awareness of financial counselling, debt and gambling helplines, and various 'self-help' resources such as those collated by BeyondBlue (https://www.beyondblue.org.au/get-support/staying-well/financial-wellbeing) and prepared by the Australian Securities & Investments Commission (ASIC) MoneySmart (https://moneysmart.gov.au/). This type of education and awareness may be particularly useful as an early intervention (e.g., young people) to promote financial literacy and/or make responding to personal economic crises easier.
- We support the recommendations approved in principle to implement a coordination of Australian Financial Counselling services (Sylvan, 2019) and recommend funding high quality evaluation research of the Australian National Debt Helpline.
- We support recommendations made by The Job Insecurity Report (Commonwealth of Australia, 2022) to better protect the wellbeing of workers experiencing unstable and insecure employment, particularly in high-risk industries such as hospitality. The current review did find

some benefit of employment protection legislation on suicide rates at the aggregate level (Shand et al., 2021); however, more research could be conducted and particularly at the individual level.

Future research investigating:

- the impact of government policies (e.g., welfare payments) on protecting against suicidal behaviours throughout the COVID-19 pandemic, including cost-effectiveness of such interventions. This is important as the impact of COVID-19 continues to unfold.
- the impact of government policies on suicide attempts, self-harm, and suicidal ideation as the focus to date has been upon suicides.
- the potential protective role of financial wellbeing, financial resilience, financial self-efficacy on suicidal behaviours.

Conclusion

This integrative review examined the role or association between economic factors (unemployment, financial hardship, job insecurity etc.) and suicidal behaviours and ideation. The review also examined the effectiveness of interventions at the government and individual level. Findings confirmed that economic circumstance is an important social determinant of suicidal behaviours, however, more research is needed with regards to self-harm and ideation. Altogether, there was a comparatively smaller body of research examining the protective impact of government level policies and individual focused interventions on suicidal behaviours. Recommendations are made as to future research to co-develop and evaluate new services and test the impact of existing services with respect to impact on suicide.

References

Amiri, S. (2021). Unemployment and suicide mortality, suicide attempts, and suicide ideation: A meta-analysis. *International Journal of Mental Health*, 1-25. https://doi.org/10.1080/00207411.2020.1859347

Amit, N., Ismail, R., Zumrah, A. R., Mohd Nizah, M. A., Tengku Muda, T. E. A., Tat Meng, E. C., Ibrahim, N., & Che Din, N. (2020). Relationship Between Debt and Depression, Anxiety, Stress, or Suicide Ideation in Asia: A Systematic Review. *Frontiers in Psychology*, *11*, 1336-1336. https://doi.org/10.3389/fpsyg.2020.01336

Andriessen, K., Rahman, B., Draper, B., Dudley, M., & Mitchell, P. B. (2017). Prevalence of exposure to suicide: A meta-analysis of population-based studies. *Journal of Psychiatric Research*, *88*, 113-120. https://doi.org/10.1016/j.jpsychires.2017.01.017

Antonakakis, N., & Collins, A. (2015). The impact of fiscal austerity on suicide mortality: Evidence across the 'Eurozone periphery'. *Social Science & Medicine (1982)*, *145*, 63-78. https://doi.org/10.1016/j.socscimed.2015.09.033

Australian Bureau of Statistics. (2021). *Causes of Death 2020, Australia*. Australian Bureau of Statistics. Retrieved February 23rd from https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/latest-release

Australian Bureau Statistics. (2022). *Labour Force, Australia (January 2022)*. Retrieved 23rd February from https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/jan-2022#underemployment

Australian Institute for Health and Welfare. (2021). *Intentional Self-Harm Hospitalisations by States & Territories*. Retrieved 21st February from https://www.aihw.gov.au/suicide-self-harm-monitoring/data/intentional-self-harm-hospitalisations/intentional-self-harm-hospitalisations-by-states

Barnes, M. C., Donovan, J. L., Wilson, C., Chatwin, J., Davies, R., Potokar, J., Kapur, N., Hawton, K., O'Connor, R., & Gunnell, D. (2017). Seeking help in times of economic hardship: access, experiences of services and unmet need. *BMC Psychiatry*, *17*(1), 84-84. https://doi.org/10.1186/s12888-017-1235-0

Barnes, M. C., Gunnell, D., Davies, R., Hawton, K., Kapur, N., Potokar, J., & Donovan, J. L. (2016). Understanding vulnerability to self-harm in times of economic hardship and austerity: a qualitative study. *BMJ Open*, *6*(2), e010131-e010131. https://doi.org/10.1136/bmjopen-2015-010131

Barnes, M. C., Haase, A. M., Scott, L. J., Linton, M. J., Bard, A. M., Donovan, J. L., Davies, R., Dursley, S., Williams, S., Elliott, D., Potokar, J., Kapur, N., Hawton, K., O'Connor, R. C., Hollingworth, W., Metcalfe, C., & Gunnell, D. (2018). The help for people with money, employment or housing problems (HOPE) intervention: pilot randomised trial with mixed methods feasibility research. *Pilot and Feasibility Studies*, *4*(1), 172-172. https://doi.org/10.1186/s40814-018-0365-6

Botha, F., & Nguyen, V. H. (2022). Opposite nonlinear effects of unemployment and sentiment on male and female suicide rates: Evidence from Australia. *Social Science & Medicine (1982)*, *292*, 114536-114536. https://doi.org/10.1016/j.socscimed.2021.114536

Brackertz, N. (2014). The Impact of Financial Counselling on Alleviating Financial Stress in Low Income Households: A National Australian Empirical Study. *Social Policy and Society*, *13*(3), 389-407. https://doi.org/10.1017/S1474746413000511

Brenner, M. H., & Bhugra, D. (2020). Acceleration of Anxiety, Depression, and Suicide: Secondary Effects of Economic Disruption Related to COVID-19. *Frontiers in Psychiatry*, *11*, 592467-592467. https://doi.org/10.3389/fpsyt.2020.592467

Broom, D. H., D'souza, R. M., Strazdins, L., Butterworth, P., Parslow, R., & Rodgers, B. (2006). The lesser evil: bad jobs or unemployment? A survey of mid-aged Australians. *Social Science & Medicine*, *63*(3), 575-586.

Brülhart, M., Klotzbücher, V., Lalive, R., & Reich, S. K. (2021). Mental health concerns during the COVID-19 pandemic as revealed by helpline calls. *Nature (London)*, *600*(7887), 121-126. https://doi.org/10.1038/s41586-021-04099-6

Butterworth, P., Leach, L., McManus, S., & Stansfeld, S. (2013). Common mental disorders, unemployment and psychosocial job quality: is a poor job better than no job at all? *Psychological Medicine*, *43*(8), 1763-1772.

Butterworth, P., Leach, L. S., Strazdins, L., Olesen, S. C., Rodgers, B., & Broom, D. H. (2011). The psychosocial quality of work determines whether employment has benefits for mental health: results from a longitudinal national household panel survey. *Occupational and Environmental Medicine*, *68*(11), 806-812.

Cerel, J., Brown, M. M., Maple, M., Singleton, M., Venne, J., Moore, M., & Flaherty, C. (2019). How Many People Are Exposed to Suicide? Not Six. *Suicide & Life-threatening Behavior*, *49*(2), 529-534. https://doi.org/10.1111/sltb.12450

Chang, S.-S., Stuckler, D., Yip, P., & Gunnell, D. (2013). Impact of 2008 global economic crisis on suicide: time trend study in 54 countries. *BMJ (Online)*, *347*, f5239. https://doi.org/10.1136/bmj.f5239

Choi, M., Lim, J., Chang, S.-S., Hwang, M., Kim, C.-S., & Ki, M. (2021). Financial hardship and suicide ideation: Age and gender difference in a Korean panel study. *Journal of Affective Disorders*, *294*, 889-896. https://doi.org/10.1016/j.jad.2021.07.102

Clapperton, A., Spittal, M. J., Dwyer, J., Garrett, A., Kõlves, K., Leske, S., Millar, C., Edwards, B., Stojcevski, V., Crompton, D. R., & Pirkis, J. (2021). Patterns of Suicide in the Context of COVID-19: Evidence From Three Australian States. *Frontiers in Psychiatry*, *12*, 797601-797601. https://doi.org/10.3389/fpsyt.2021.797601

Commonwealth of Australia. (2022). *The Job Insecurity Report by the Select Committee on Job Security*. The Senate: Parliament House, Australia. https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Job_Security/JobSecurity/Fourth_Interim_Report

Córdoba-Doña, J. A., San Sebastián, M., Escolar-Pujolar, A., Martínez-Faure, J. E., & Gustafsson, P. E. (2014). Economic crisis and suicidal behaviour: the role of unemployment, sex and age in Andalusia, southern Spain. *International Journal for Equity in Health*, *13*(1), 55-55. https://doi.org/10.1186/1475-9276-13-55

Cunningham, R., Milner, A., Gibb, S., Rijnberg, V., Disney, G., & Kavanagh, A. M. (2021). Gendered experiences of unemployment, suicide and self-harm: a population-level record linkage study. *Psychological Medicine*. https://doi.org/10.1017/S0033291721000994

Cylus, J., Glymour, M. M., & Avendano, M. (2014). Do Generous Unemployment Benefit Programs Reduce Suicide Rates? A State Fixed-Effect Analysis Covering 1968-2008. *American Journal of Epidemiology*, *180*(1), 45-52. https://doi.org/10.1093/aje/kwu106

Davidson, P., Saunders, P., Bradbury, B. and Wong, M. (2020). *Poverty in Australia 2020: Part 1, Overview.* ACOSS/UNSW Poverty and Inequality Partnership Report No. 3. https://povertyandinequality.acoss.org.au/wp-content/uploads/2020/02/Poverty-in-Australia-2020_Part-1_Overview.pdf

Department of Social Services. (2020). *Government response - Review of Financial Counselling Services – Support for people in financial hardship beyond the coronavirus pandemic*. Australian Government. https://www.dss.gov.au/sites/default/files/documents/11_2020/sylvan_review_government_response_final_unclassified_version_post_budget.pdf

Durkheim, E. (2002 [1897]). *Suicide: a Study in Sociology*. Routledge.

Elbogen, E. B., Lanier, M., Montgomery, A. E., Strickland, S., Wagner, H. R., & Tsai, J. (2020). Financial Strain and Suicide Attempts in a Nationally Representative Sample of US Adults. *American Journal of Epidemiology*, *189*(11), 1266-1274. https://doi.org/10.1093/aje/kwaa146

Financial Counselling Australia. (2020). *Money on Your Mind: Financial Counselling and Mental Health*. Financial Counselling Australia. https://www.financialcounsellingaustralia.org.au/docs/money-on-your-mind-financial-counselling-and-mental-health/

Financial Counselling Australia. (2021). *FCA 2021 Annual Report*. Financial Counselling Australia. https://www.financialcounsellingaustralia.org.au/fca-content/uploads/2021/12/FCA-Annual-Report-20-21-Final.pdf

Financial Counselling Australia and Suicide Prevention Australia. (2022). *Gambling and Suicide Prevention: A Road Map to Change*. Suicide Prevention Australia. https://www.suicidepreventionaust.org/wp-content/uploads/2022/02/Gambling-Report_2022.pdf

Frasquilho, D., Matos, M. G., Salonna, F., Guerreiro, D., Storti, C. C., Gaspar, T., & Caldas-de-Almeida, J. M. (2016). Mental health outcomes in times of economic recession: a systematic literature review. *BMC Public Health*, *16*(1), 115-115. https://doi.org/10.1186/s12889-016-2720-y

French, D., & Vigne, S. (2019). The causes and consequences of household financial strain: A systematic review. *International Review of Financial Analysis*, *62*, 150-156. https://doi.org/10.1016/j.irfa.2018.09.008

Gray, H. M., Edson, T. C., Nelson, S. E., Grossman, A. B., & LaPlante, D. A. (2021). Association between gambling and self-harm: a scoping review. *Addiction Research & Theory*, *29*(3), 183-195. https://doi.org/10.1080/16066359.2020.1784881

Gullestrup, J., Lequertier, B., & Martin, G. (2011). MATES in construction: impact of a multimodal, community-based program for suicide prevention in the construction industry. *International Journal of Environmental Research and Public Health*, *8*(11), 4180-4196. https://doi.org/10.3390/ijerph8114180

Gunnell, D., Appleby, L., Arensman, E., Hawton, K., John, A., Kapur, N., Khan, M., O'Connor, R. C., Pirkis, J., & Caine, E. D. (2020). Suicide risk and prevention during the COVID-19 pandemic. *The Lancet Psychiatry*, *7*(6), 468-471.

Haw, C., Hawton, K., Gunnell, D., & Platt, S. (2015). Economic recession and suicidal behaviour: Possible mechanisms and ameliorating factors. *International Journal of Social Psychiatry*, *61*(1), 73-81. https://doi.org/10.1177/0020764014536545

Hawgood, J., Woodward, A., Quinnett, P., & De Leo, D. (2021). Gatekeeper training and minimum standards of competency: Essentials for the suicide prevention workforce. *Crisis*. http://dx.doi.org/10.1027/0227-5910/a000794

Huang, X., Ribeiro, J. D., Musacchio, K. M., & Franklin, J. C. (2017). Demographics as predictors of suicidal thoughts and behaviors: A meta-analysis. *PloS One*, *12*(7), e0180793-e0180793. https://doi.org/10.1371/journal.pone.0180793

John, A., Pirkis, J., Gunnell, D., Appleby, L., & Morrissey, J. (2020). Trends in suicide during the covid-19 pandemic. *BMJ (Online)*, *371*, m4352-m4352. https://doi.org/10.1136/bmj.m4352

Jolly, T., Trivedi, C., Adnan, M., Mansuri, Z., & Agarwal, V. (2021). Gambling in patients with major depressive disorder is associated with an elevated risk of Suicide: Insights from 12-years of Nationwide inpatient sample data. *Addictive Behaviors*, *118*, 106872-106872. https://doi.org/10.1016/j.addbeh.2021.106872

Karlsson, A., & Hakansson, A. (2018). Gambling disorder, increased mortality, suicidality, and associated comorbidity: A longitudinal nationwide register study. *Journal of Behavioral Addictions*, *7*(4), 1091-1099. https://doi.org/10.1556/2006.7.2018.112

Kaufman, J. A., Livingston, M. D., & Komro, K. A. (2020). Unemployment insurance program accessibility and suicide rates in the United States. *Preventive Medicine*, *141*, 106318-106318. https://doi.org/10.1016/j.ypmed.2020.106318

Kaufman, J. A., Salas-Hernández, L. K., Komro, K. A., & Livingston, M. D. (2020). Effects of increased minimum wages by unemployment rate on suicide in the USA. *Journal of Epidemiology and Community Health (1979)*, *74*(3), 219-224. https://doi.org/10.1136/jech-2019-212981

Kidger, J., Gunnell, D., Jarvik, J. G., Overstreet, K. A., & Hollingworth, W. (2011). The Association between Bankruptcy and Hospital-Presenting Attempted Suicide: A Record Linkage Study. *Suicide & Life-threatening Behavior*, *41*(6), 676-684. https://doi.org/10.1111/j.1943-278X.2011.00063.x

Kim, C., & Cho, Y. (2017). Does Unstable Employment Have an Association with Suicide Rates among the Young? *International Journal of Environmental Research and Public Health*, *14*(5), 470. https://doi.org/10.3390/ijerph14050470

Kim, J., & Garman, E. T. (2013). Relationships among credit counseling clients' financial well being, financial behaviors, financial stressor events, and health. *Journal of Financial Counselling and Planning,* 14(2), 75-87.

Kim, S., & You, M. (2019). An Empirical Analysis of Delayed Monthly Bill Payments as an Early Risk Factor of Increased Suicidal Behavior. *International Journal of Environmental Research and Public Health*, *16*(16), 2929. https://doi.org/10.3390/ijerph16162929

Korhonen, M., Puhakka, M., & Viren, M. (2016). Economic hardship and suicide mortality in Finland, 1875–2010. *The European Journal of Health Economics*, *17*(2), 129-137. https://doi.org/10.1007/s10198-014-0658-5

Korhonen, M., Puhakka, M., & Viren, M. (2017). Economic hardship and suicides. *International Journal of Social Economics*, *44*(10), 1348-1360. https://doi.org/10.1108/IJSE-06-2016-0153

Kposowa, A. J., Aly Ezzat, D., & Breault, K. (2019). New Findings On Gender: The Effects Of Employment Status On Suicide. *International Journal of Women's Health*, *11*, 569-575. https://doi.org/10.2147/IJWH.S216504

Luo, F., Florence, C. S., Quispe-Agnoli, M., Ouyang, L., & Crosby, A. E. (2011). Impact of business cycles on US suicide rates, 1928–2007. *American Journal of Public Health*, *101*(6), 1139-1146.

Mäki, N., & Martikainen, P. (2012). A register-based study on excess suicide mortality among unemployed men and women during different levels of unemployment in Finland. *Journal of Epidemiology and Community Health*, *66*(4), 302-307. https://doi.org/10.1136/jech.2009.105908

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet (British edition)*, *365*(9464), 1099-1104. https://doi.org/10.1016/S0140-6736(05)71146-6

Martin-Carrasco, M., Evans-Lacko, S., Dom, G., Christodoulou, N. G., Samochowiec, J., González-Fraile, E., Bienkowski, P., Gómez-Beneyto, M., Dos Santos, M. J. H., & Wasserman, D. (2016). EPA guidance on mental health and economic crises in Europe. *European Archives of Psychiatry and Clinical Neuroscience*, *266*(2), 89-124. https://doi.org/10.1007/s00406-016-0681-x

Mattei, G., Pistoresi, B., & De Vogli, R. (2018). Impact of the economic crises on suicide in Italy: the moderating role of active labor market programs. *Social Psychiatry and Psychiatric Epidemiology*, *54*(2), 201-208. https://doi.org/10.1007/s00127-018-1625-8

McAuliffe, C., Pumarino, J., Thomson, K. C., Richardson, C., Slemon, A., Salway, T., & Jenkins, E. K. (2021). Correlates of suicidal ideation related to the COVID-19 Pandemic: Repeated cross-sectional nationally representative Canadian data. *SSM - Population Health*, *16*, 100988-100988. https://doi.org/10.1016/j.ssmph.2021.100988

McGrath, M., Duncan, F., Dotsikas, K., Baskin, C., Crosby, L., Gnani, S., Hunter, R. M., Kaner, E., Kirkbride, J. B., Lafortune, L., Lee, C., Oliver, E., Osborn, D. P., Walters, K. R., Dykxhoorn, J., & School for Public Health Research Public Mental Health, P. (2021). Effectiveness of community interventions for protecting and promoting the mental health of working-age adults experiencing financial uncertainty: a systematic review. *Journal of Epidemiology and Community Health*, *75*(7), 665-673. https://doi.org/10.1136/jech-2020-215574

McIntyre, R. S., & Lee, Y. (2020). Projected increases in suicide in Canada as a consequence of COVID-19. *Psychiatry Research*, *290*, 113104. https://doi.org/10.1016/j.psychres.2020.113104

Meda, N., Miola, A., Slongo, I., Zordan, M. A., & Sambataro, F. (2022). The impact of macroeconomic factors on suicide in 175 countries over 27 years. *Suicide & Life-Threatening Behavior*, *52*(1), 49-58. https://doi.org/10.1111/sltb.12773

Milner, A., Currier, D., LaMontagne, A. D., Spittal, M. J., & Pirkis, J. (2017). Psychosocial job stressors and thoughts about suicide among males: a cross-sectional study from the first wave of the Ten to Men cohort. *Public Health (London)*, *147*, 72-76. https://doi.org/10.1016/j.puhe.2017.02.003

Milner, A., LaMontagne, A. D., Spittal, M. J., Pirkis, J., & Currier, D. (2018). Job Stressors and Employment Precarity as Risks for Thoughts About Suicide: An Australian Study Using the Ten to Men Cohort. *Annals of Work Exposures and Health*, *62*(5), 583-590. https://doi.org/10.1093/annweh/wxy024

Milner, A., Morrell, S., & Lamontagne, A. D. (2014b). Economically inactive, unemployed and employed suicides in Australia by age and sex over a 10-year period: what was the impact of the 2007 economic recession? *International Journal of Epidemiology*, *43*(5), 1500-1507. https://doi.org/10.1093/ije/dyu148

Milner, A., Page, A., & LaMontagne, A. D. (2013b). Long-term unemployment and suicide: a systematic review and meta-analysis. *PloS One*, *8*(1), e51333-e51333. https://doi.org/10.1371/journal.pone.0051333

Milner, A., Page, A., & LaMontagne, A. D. (2014a). Cause and effect in studies on unemployment, mental health and suicide: a meta-analytic and conceptual review. *Psychological Medicine*, *44*(5), 909-917. https://doi.org/10.1017/S0033291713001621

Milner, A. J., Shields, M., Currier, D., & King, T. L. (2020). Male-Dominated Occupations, Employment Status, and Suicidal Behaviors Among Australian Men: A Follow-Up Study Using Two Waves of Data From the Ten to Men Cohort. *Crisis*, *41*(1), 54-63. https://doi.org/10.1027/0227-5910/a000610

Moore, T. H. M., Kapur, N., Hawton, K., Richards, A., Metcalfe, C., & Gunnell, D. (2017). Interventions to reduce the impact of unemployment and economic hardship on mental health in the general population: a systematic review. *Psychological Medicine*, *47*(6), 1062-1084. https://doi.org/10.1017/S0033291716002944

Nordt, C., Warnke, I., Seifritz, E., & Kawohl, W. (2015). Modelling suicide and unemployment: a longitudinal analysis covering 63 countries, 2000–11. *The Lancet Psychiatry*, *2*(3), 239-245.

Norstrom, T., & Gronqvist, H. (2015). The Great Recession, unemployment and suicide. *Journal of Epidemiology and Community Health*, *69*(2), 110-116. https://doi.org/10.1136/jech-2014-204602

Organisation for Economic Co-operation and Development. (2002). *Glossary of Statistical Terms: Active Labour Market Programmes*. Retrieved 26th February from https://stats.oecd.org/glossary/detail.asp?ID=28

Oxford Centre for Evidence-Based Medicine. (2009). *Levels of Evidence*. Retrieved 23rd February from https://www.cebm.ox.ac.uk/resources/levels-of-evidence/oxford-centre-for-evidence-based-medicine-levels-of-evidence-march-2009

Oyesanya, M., Lopez-Morinigo, J., & Dutta, R. (2015). Systematic review of suicide in economic recession. *World Journal of Psychiatry*, *5*(2), 243-254. https://doi.org/10.5498/wjp.v5.i2.243

Page, A., Milner, A., Morrell, S., & Taylor, R. (2013). The role of under-employment and unemployment in recent birth cohort effects in Australian suicide. *Social Science & Medicine (1982)*, *93*, 155-162. https://doi.org/10.1016/j.socscimed.2013.03.039

Pirkis, J., John, A., Shin, S., DelPozo-Banos, M., Arya, V., Analuisa-Aguilar, P., Appleby, L., Arensman, E., Bantjes, J., Baran, A., Bertolote, J. M., Borges, G., Brečić, P., Caine, E., Castelpietra, G., Chang, S.-S., Colchester, D., Crompton, D., Curkovic, M., . . . Spittal, M. J. (2021). Suicide trends in the early months of the COVID-19 pandemic: an interrupted time-series analysis of preliminary data from 21 countries. *The Lancet Psychiatry*, *8*(7), 579-588. https://doi.org/10.1016/S2215-0366(21)00091-2

Pleasence, P., & Balmer, N. J. (2007). Changing Fortunes: Results from a Randomized Trial of the Offer of Debt Advice in England and Wales. *Journal of Empirical Legal Studies*, *4*(3), 651-673. https://doi.org/10.1111/j.1740-1461.2007.00102.x

Pollard, C. M., Booth, S., Louth, J., Mackenzie, C., & Goodwin-Smith, I. (2020). "I'd be sleeping in the park, I reckon": Lived Experience of Using Financial Counselling Services in South Australia. *Economic papers (Economic Society of Australia)*, *39*(4), 353-366. https://doi.org/10.1111/1759-3441.12298

Puig-Barrachina, V., Giró, P., Artazcoz, L., Bartoll, X., Cortés-Franch, I., Fernández, A., González-Marín, P., & Borrell, C. (2020). The impact of Active Labour Market Policies on health outcomes: a Scoping review. *European Journal of Public Health*, *30*(1), 36-42. https://doi.org/10.1093/eurpub/ckz026

Reeves, A., McKee, M., Gunnell, D., Chang, S.-S., Basu, S., Barr, B., & Stuckler, D. (2015). Economic shocks, resilience, and male suicides in the Great Recession: cross-national analysis of 20 EU countries. *European Journal of Public Health*, *25*(3), 404-409. https://doi.org/10.1093/eurpub/cku168

Reserve Bank of Australia. (2022). *Recession Explainer*. Retrieved 23rd of February 2022 from: https://www.rba.gov.au/education/resources/explainers/recession.html

Richardson, T., Elliott, P., & Roberts, R. (2013). The relationship between personal unsecured debt and mental and physical health: A systematic review and meta-analysis. *Clinical Psychology Review*, *33*(8), 1148-1162. https://doi.org/10.1016/j.cpr.2013.08.009

Ross, V., Kõlves, K., & De Leo, D. (2017). Beyond psychopathology: A case–control psychological autopsy study of young adult males. *International Journal of Social Psychiatry*, *63*(2), 151-160. https://doi.org/10.1177/0020764016688041

Shand, F., Duffy, L., & Torok, M. (2021). Can Government Responses to Unemployment Reduce the Impact of Unemployment on Suicide?: A Systematic Review. *Crisis*, *43*(1), 1-8. https://doi.org/10.1027/0227-5910/a000750

Sinyor, M., Knipe, D., Borges, G., Ueda, M., Pirkis, J., Phillips, M. R., Gunnell, D., & the International, COVID-19 Suicide Prevention Research Collaboration (2021). Suicide Risk and Prevention During the COVID-19 Pandemic: One Year On. *Archives of Suicide Research*. https://doi.org/10.1080/13811118.2021.1955784

Stevenson, C., & Wakefield, J. R. H. (2021). Financial distress and suicidal behaviour during COVID-19: Family identification attenuates the negative relationship between COVID-related financial distress and mental Ill-health. *Journal of Health Psychology*, *26*(14), 2665-2675. https://doi.org/10.1177/13591053211014597

Stuckler, D. P., Basu, S. P., Suhrcke, M. P., Coutts, A. P., & McKee, M. P. (2009). The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. *The Lancet*, *374*(9686), 315-323. https://doi.org/10.1016/S0140-6736(09)61124-7

Suicide Prevention Australia (2022). *Stats & Facts.* Retrieved 21st March 2022 from: https://www.suicidepreventionaust.org/news/statsandfacts

Sylvan, L. (2019). *The Countervailing Power: Review of the coordination and funding for financial counselling services across Australia*. Department of Social Services. https://www.dss.gov.au/sites/default/files/documents/10_2019/report-review-financial-counselling-services.pdf

Tanaka, T., & Okamoto, S. (2021). Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. *Nature Human Behaviour*, *5*(2), 229-238. https://doi.org/10.1038/s41562-020-01042-z

Turecki, G., Brent, D. A., Gunnell, D., O'Connor, R. C., Oquendo, M. A., Pirkis, J., & Stanley, B. H. (2019). Suicide and suicide risk. *Nature Reviews. Disease Primers*, *5*(1), 74-74. https://doi.org/10.1038/s41572-019-0121-0

Turunen, E., & Hiilamo, H. (2014). Health effects of indebtedness: a systematic review. *BMC Public Health*, *14*(1), 489-489. https://doi.org/10.1186/1471-2458-14-489

Voßemer, J., Gebel, M., Täht, K., Unt, M., Högberg, B., Strandh, M. (2017). The Effects of Unemployment and Insecure Jobs on Well-Being and Health: The Moderating Role of Labor Market Policies. *Social Indicators Research*, *138*(3), 1229-1257. https://doi.org/10.1007/s11205-017-1697-y

Wang, S., Coutts, A., Burchell, B., Kamerāde, D., & Balderson, U. (2021). Can Active Labour Market Programmes Emulate the Mental Health Benefits of Regular Paid Employment? Longitudinal Evidence from the United Kingdom. *Work, Employment and Society*, *35*(3), 545-565. https://doi.org/10.1177/0950017020946664

Wasserman, D., Iosue, M., Wuestefeld, A., & Carli, V. (2020). Adaptation of evidence-based suicide prevention strategies during and after the COVID-19 pandemic. *World Psychiatry*, *19*(3), 294-306. https://doi.org/10.1002/wps.20801

Webb, R. T., & Kapur, N. (2015). Suicide, unemployment, and the effect of economic recession. *The Lancet. Psychiatry*, *2*(3), 196-197. https://doi.org/10.1016/S2215-0366(14)00129-1

World Health Organization. (2016). *Practice Manual for Establishing and Maintaining Surveillance Systems for Suicide Attempts and Self-Harm*. https://www.who.int/publications/i/item/practice-manual-for-establishing-and-maintaining-surveillance-systems-for-suicide-attempts-and-self-harm