Community and population-based interventions to reduce stigma associated with depression, anxiety and suicide: a rapid review

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EXECUTIVE SUMMARY

Introduction

The 2007 Australian National Survey of Mental Health and Wellbeing (NSMHWB) estimated the 12-month prevalence rate for anxiety disorders to be 14.4% (10.8% in males and 17.9% in females), while the rate for affective disorders (depression, dysthymia, bipolar affective disorder) was estimated to be 6.2% (5.3% in males and 7.1% in females). In Australia in 2011, there were 2,273 deaths from suicide. People with depression and anxiety disorders must cope with their symptoms and also with stigma and discrimination. Stigma is complex, has many components and varies according to disorder. The 2011 National Survey of Mental Health Literacy and Stigma assessed attitudes to a range of mental disorders including depression, social phobia and post-traumatic stress disorder (PTSD). Results revealed that stigma perceived in others (perceived stigma) was greater than personally-held attitudes (personal stigma). Desire for social distance was most common for the items relating to working closely with a person with depression or an anxiety disorder (PTSD or social phobia) or having the person marry into one's family. The aim of this review is to examine the evidence of effectiveness of community and population-based interventions to reduce stigma associated with depression, anxiety and suicide.

Methods

Interventions to review were identified by searching PubMed, PsycInfo, the Cochrane Database of Systematic Reviews and grey literature. The interventions reviewed were limited to those which specifically targeted depression and anxiety disorders, or which targeted mental illness more broadly but included an assessment of changes in stigmatising attitudes towards depression, anxiety disorders or suicide. Resulting interventions were divided into subcategories according to the target population (national or regional community campaigns or individuals within particular population groups, such as culturally and linguistically diverse (CALD) communities), the mode of delivery (in-person or web-based) and the intervention setting (workplaces, schools, tertiary education institutions). Evidence for gender-based differences was also considered.

Evidence of effectiveness of interventions

In grading the evidence, the following classifications were used: (1) **Sufficient evidence** from well-designed research, (2) **Limited evidence** from studies of varying quality, (3) **Inconclusive evidence** due to inadequate research or research of insufficient quality, (4) **Likely to be effective** based on low quality studies or parallel evidence and where the results are unlikely to be due to chance (5) **May be effective** based on low quality studies or parallel evidence and where the results are probably not due to chance. The results showed (in order of level of evidence) are given in Table 1 below:

Table 1. Evidence of effectiveness of interventions

Intervention	Components of stigma reduced	Level of evidence
Psycho-education interventions	Stigmatising attitudes towards depression, including blaming the person, beliefs about dangerousness and the desire for social distance	Sufficient
School-based interventions	Stigmatising attitudes towards suicidal peers and suicide prevention	Sufficient
Web-based interventions	Personal stigma to depression	Limited
In-person psycho-education (particularly Mental Health First Aid) and web-based interventions	Stigmatising attitudes towards depression in CALD communities, including personal stigma and desire for social distance	Limited
Interventions targeted to health professionals	Stigma towards depression and suicide (including attitudes to working with people with depression and suicidal ideation or behaviour)	Limited
Workplace anti-stigma interventions (particularly Mental Health First Aid)	Desire for social distance from someone with depression	Limited
National and regional community campaigns	Stigmatising attitudes to depression or anxiety disorders	Inconclusive
School-based interventions	Stigmatising attitudes towards depression and anxiety disorders	Inconclusive
Workplace-based suicide prevention interventions		Inconclusive
Interventions targeting Aboriginal and Torres Strait Islander communities	Suicide stigma	Inconclusive
Regional campaigns targeting suicide stigma	Behaviour change (suicidal acts or help seeking)	May be effective

Gaps in knowledge

There are significant gaps in research on interventions to address stigmatising attitudes towards depression, anxiety disorders and suicide, particularly in the areas of:

- Evaluation and high-quality research designs, including randomised and cluster randomised trials, and long-term follow-up and cost-effectiveness analyses
- Interventions addressing stigmatising attitudes to anxiety disorders
- Studies addressing stigmatising attitudes to those who have previously attempted suicide or those bereaved by suicide
- Evidence of the impact of interventions on discriminatory and supportive behaviours, rather than on attitudes alone
- Refresher training sessions for interventions that have evidence of short-term effectiveness
- Studies targeting Aboriginal and Torres Strait Islander communities
- Studies specifically addressing how best to recruit males (who are less likely to volunteer to participate in mental health interventions).

Directions for future research

Successfully addressing stigmatising attitudes to depression, anxiety disorders and suicide is likely to involve a multifaceted approach, with different types of interventions targeted to different groups. National or regional community campaigns are likely to play a key role in changing the broad cultural context surrounding people with depression, anxiety disorders and suicidal ideation. However, psycho-education interventions (in-person or web-based) targeted towards people who are most likely to be in contact with people with these disorders or who are at high risk themselves are likely to have greater effects at the individual level.

Successfully addressing stigma requires:

- **Taking action in multiple settings.** These include communities, health services, workplaces, schools and tertiary education institutions. However, further work is needed to explore the factors that motivate people to participate in opt-in interventions. Engaging decision makers is essential to implementation of anti-stigma programs in these settings
- **Targeting key groups, such as those who have the power to make decisions that impact on the lives of people with depression and anxiety disorders.** For example, an employer may decide whether to employ a person with a history of depression, or a landlord may decide whether to rent a property to that person
- **Exploring issues around male participation in 'opt-in' mental health interventions and what might motivate them to participate.** An advantage of school, tertiary education institutions and workplace-based interventions (particularly those in male-dominated workplaces) is that they are more likely to reach males
- **Developing culturally appropriate interventions to address stigma in Aboriginal and Torres Strait Islander populations.** This is in the context of the relatively high rates of psychological distress and suicide in Aboriginal and Torres Strait Islander communities
- **Addressing stigma and discrimination to specific mental illnesses.** Stigma varies according to disorder, with, for example, people with schizophrenia seen as 'more dangerous' than those with social phobia. There is evidence that the general public is likely to associate the term 'mental illness' with more severe disorders such as schizophrenia and bipolar disorder.

Preparatory work for anti-stigma interventions should:

- **Involve a population study of discrimination.** The study should have a representative sample, cover the broad range of supportive and discrimination experiences and their impacts on people with depression, anxiety disorders, suicidal ideation and those impacted by suicide. Evidence from such a study could provide much-needed input into the design of anti-stigma interventions, including information on which key groups to target and how best to do this (including using positive messages about supportive actions).

Future research and evaluation should involve:

- **High-quality research designs and evaluation of those interventions that are implemented**. These include randomised and cluster randomised controlled trials that include measures of behaviour change and long-term follow-up. Interventions to address suicide stigma should include an assessment of the impact on help seeking behaviours and suicide attempts. Evaluation should also incorporate cost-effectiveness analyses where appropriate
- **Ongoing periodic assessments of experiences of discrimination at a population level.** This is necessary to address gaps in evidence and evaluate national or regional community campaigns that aim to target stigmatising attitudes towards depression, anxiety and suicide

- **An assessment of the issues around sustainability**. A consistent limitation in the identified studies is that there is rarely adequate funding to support anti-stigma interventions in an on-ongoing way
- **Exploration of the impact of interventions involving contact with people with depression and anxiety disorders and those who have previously attempted suicide.** While there is evidence that such interventions are effective in the case of severe mental illness (e.g. schizophrenia), it is not known whether such interventions are effective in reducing stigma towards depression, anxiety disorders and suicide
- **Further exploration of the impact of education that emphasises depression and anxiety disorders as 'real illnesses' that are no different from other types of diseases.** There is some evidence that this approach may increase some aspects of stigma (e.g. belief in dangerousness).

1 Introduction

1.1 Prevalence of depression, anxiety disorders and suicide in Australia

The 2007 Australian National Survey of Mental Health and Wellbeing estimated that affective, anxiety and substance use disorders affect 20% of Australians (17.6% of males and 22.3% of females) aged 16–85 in any 12-month period.[1] The 12-month prevalence rate for anxiety disorders was estimated to be 14.4% (10.8% in males and 17.9% in females), while the rate for affective disorders was 6.2% (5.3% in males and 7.1% in females). The lifetime prevalence rate for all disorders was estimated to be 45.5 per cent.

In Australia in 2011, there were 2273 deaths from suicide, with 76% of these males.[2] In 2011, the age standardised male suicide rate (which is subject to revision) was 15.3 deaths per 100,000, while the female rate was 4.8 deaths per 100,000. For Aboriginal and Torres Strait Islander males, the age standardised suicide rate was 2.5 times that of the non-Aboriginal and Torres Strait Islander population, while for females the rate was 3.4 times higher.

Mental illnesses are the main source of disability burden worldwide and their impact begins early in life.[3] In Australia in 2003, depression and anxiety disorders accounted for 10% of the total burden of disease in women and 4.8% in men. In women, depression and anxiety disorders were the leading causes of burden of disease.[4] In men, depression and anxiety disorders were the third largest causes of burden of disease after ischaemic heart disease and diabetes.

1.2 Stigma and discrimination associated with depression, anxiety disorders and suicide

Many people with depression and anxiety disorders experience social and economic hardship as a direct result of their illness. They must cope with their symptoms and also with stigma and discrimination that result from misconceptions about these illnesses. These issues are a key concern of people with depression and anxiety disorders.[5,6] Many people suffering from high levels of symptoms may not seek help due to embarrassment or the belief that others will think badly of them.[7,8] Stigma may also compound the experience of psychological distress and may adversely affect personal relationships and the ability to achieve educational and vocational goals.[9–11]

1.2.1 Stigmatising attitudes

Stigmatising attitudes towards mental disorders have been conceptualised and measured in a variety of ways. Although stigma is often discussed as a single concept, cumulative evidence clearly indicates that it is complex and multidimensional.[12–14] A number of components of stigma have been identified, including personal stigma, stigma perceived in others, internalised self-stigma, perception that mental disorders are due to weakness, reluctance to disclose to others, perceived dangerousness, desire for social control, goodwill and desire for social distance.[15] Several scales assess stigma although many of these refer to 'mental illness' in their questions, such as the Mental Illness: Clinicians Attitudes Scale (MICA:[16]) or the Stigma Scale.[17] One of the more common measures is the Social Distance Scale (SDS:[18]), which assesses the desire to avoid contact with a particular group of people. Other measures that may be used to assess stigma towards depression and anxiety disorders include the Depression Stigma Scale (DSS:[12]), the Generalised Anxiety Stigma Scale (GASS:[19]) and the

Self-Stigma of Depression Scale (SSDS:[20]). More recent work in this area has involved the measurement of experiences of discrimination[21] and suicide stigma.[22]

The DSS is commonly used in Australia. It incorporates measures of personally held beliefs and beliefs perceived in others. The personal stigma items are:

1: People with a problem like (John/Jenny)'s could snap out of it if they wanted

2: A problem like (John/Jenny)'s is a sign of personal weakness

3: (John/Jenny)'s problem is not a real medical illness

4: People with a problem like (John/Jenny)'s are dangerous

5: It is best to avoid people with a problem like (John/Jenny)'s so that you don't develop this problem

6: People with a problem like (John/Jenny)'s are unpredictable

7: If I had a problem like (John/Jenny)'s I would not tell anyone

8: I would not employ someone if I knew they had a problem like (John/Jenny)'s

9: I would not vote for a politician if I knew they had suffered a problem like (John/Jenny)'s.

The perceived stigma items covered the same statements but started with "Most other people believe that..."

Providing further support for the need to explore and address the multi-dimensional nature of stigma, recent work using Exploratory Structural Equation Modelling has shown that personal and perceived stigma each comprise two components: a 'Weak not sick' component and a 'Dangerous/unpredictable' component.[23]

The 2011 National Survey of Mental Health Literacy and Stigma examined stigmatising attitudes to people with depression and anxiety disorders.[24] In this telephone survey, more than 6000 randomly-selected members of the general community were read a vignette describing a person with one of the following illnesses: depression, depression with suicidal thoughts, early schizophrenia, chronic schizophrenia, social phobia and post-traumatic stress disorder (PTSD). After being presented with the vignette, respondents were presented with the DSS and SDS. The results showed that:

- Perceived stigma was higher than personal stigma for depression and anxiety disorders
- Perceptions of discrimination, dangerousness and unpredictability were generally highest for chronic schizophrenia, while beliefs in the problem as a sign of personal weakness or 'not a real medical illness' were generally higher for social phobia than for other illnesses
- For both personal and perceived stigma, across all illnesses, the statements with which respondents were most likely to agree or strongly agree involved a perception of unpredictability, the belief that it is better not disclose the problem, and the belief that it is better not to employ someone with the problem
- Desire for social distance was most common for the items relating to working closely with a person with a mental illness or having the person marry into one's family
- Desire for social distance was highest for chronic schizophrenia and lowest for social phobia and PTSD.

These results provide further support for the importance of addressing stigma and discrimination to specific mental disorders rather than 'mental illness' generally, a term which the public tends to associate with schizophrenia.[25] These different beliefs may be more, or less, entrenched in the population and may result in different patterns and severity of discrimination.

The issue of stigma and suicide is complex. As with other mental illnesses, such as depression and anxiety disorders, stigmatising attitudes, either personal or perceived, may lead an individual to hide how they are feeling and to avoid seeking help.[26] Stigma may also add to the burden of someone who has attempted suicide, as well as those bereaved by suicide. Studies of suicide-related stigma may address one or more of these aspects.[22,27] While many interventions that aim to reduce stigma related to depression and anxiety disorders focus on changing attitudes about the negative attributes of the person with the disorder (or a desire to shun the person with the disorder), many suicide prevention programs aim to stigmatise the act of suicide itself, while de-stigmatising help seeking for suicidal ideation. [28]

As a result of stigmatising attitudes, many people with depression and anxiety disorders struggle to access services, including health, housing, welfare and legal services, and face barriers to participation in work, higher education and social relationships.[11,29–31] People with mental illness, including those with depression and anxiety disorders, commonly report discrimination from health professionals that may adversely impact on their recovery.[32]

1.2.2 Population-level changes in stigmatising attitudes

Stigmatising attitudes to depression and depression with suicidal thoughts were assessed in both the 2003–2004 and 2011 National Surveys of Mental Health Literacy and Stigma, allowing for an assessment of changes over an eight-year period. The results showed decreases in social distance scores for depression and depression with suicidal thoughts and increases in beliefs about dangerousness and unpredictability.[33] A recent review of studies of changes in attitudes to mental illness in the general population in a number of countries found that these have not changed or, in some cases, have appeared to increase.[34]

1.3 Aim of the review

The aim of this review was to examine the evidence of effectiveness of community and population-based interventions to reduce stigma associated with depression, anxiety and suicide.

2 Methods

Interventions to review were identified by searching PubMed, PsycInfo, the Cochrane Database of Systematic Reviews and grey literature.

An initial search of Pub Med was conducted using the following search terms: (mental disorder OR mental illness OR depression OR anxiety OR suicide[Title/Abstract]) AND (stigma* OR anti-stigma OR anti stigma OR attitudes[Title/Abstract]), with search results limited to reviews published in the past five years. This search returned 499 results. Of these, 39 studies were identified for further checking of abstracts and full-text articles. A search of PsycInfo using the following terms: ab(mental disorder OR mental illness OR depression OR anxiety OR suicide) AND ab(stigma* OR anti-stigma OR anti stigma OR attitudes) AND review identified an additional nine references (once duplicates were removed) for checking.

The broader search terms 'mental illness' and 'mental disorders' were used in the initial searches, as most reviews combine studies of interventions to target a range of mental illnesses.

A follow-up search was conducted to identify studies not likely to be included in recent reviews. The search terms were: (depression OR anxiety OR suicide[Title/Abstract]) AND (stigma* OR anti-stigma OR anti stigma OR attitudes[Title/Abstract]) AND (intervention OR program OR campaign). The search was limited to studies conducted since 1 January 2009. Overall, 224 search results were returned and 21 abstracts identified. These were checked against the reference lists of included reviews. A search of PsycInfo using the following terms: ab(depression OR anxiety OR suicide) AND ab(stigma* OR anti-stigma OR anti stigma OR attitudes) AND ab(intervention OR program OR campaign) identified an additional seven references (once duplicates were removed) for checking. Subsequently, searches with no date limit for literature relating to specific population groups or intervention settings used additional specific terms: (multicultural OR aboriginal OR indigenous), (work OR workplace OR employ*), (school OR university OR college). These searches identified a further eight abstracts.

Grey literature was searched through Google searches of www.google.com, www.google.com.au, www.google.ca, www.google.co.nz and www.google.co.uk, using the terms (depression OR anxiety OR suicide) AND (stigma* OR anti-stigma OR anti stigma OR attitudes) AND (campaign OR intervention OR program). The top 50 websites produced by this search were scrutinised for information relevant to the review. The titles of interventions reported in these top 50 websites were entered into Google to identify any additional relevant references to these interventions, and to find any evaluations of these interventions. Links to websites in the top 50 websites produced by the search judged to be potentially relevant were also examined for content pertinent to the review. This search identified two additional studies. Reference lists and citations of included reviews and studies were also checked. In addition, trial registers were searched to identify studies that are ongoing or completed but unpublished (including the ANZ Clinical Trials Register and the US clinicaltrials.gov). No further studies were identified via these searches.

The interventions reviewed were limited to those that specifically targeted depression and anxiety disorders, or that targeted mental illness more broadly but which also included an assessment of changes in stigmatising attitudes towards depression, anxiety disorders or suicide. For the purposes of this review, for the studies relating to depression and anxiety disorders, stigmatising attitudes were defined as those relating to negative attributes of the person with the disorder, or a desire to shun the person with the disorder. They also covered measures of stigma relating to seeking professional treatment, but not attitudes to treatments per se.

Interventions relating to the attitudes of specific populations other than adults, adolescents, older people, CALD and socially disadvantaged populations were not included. This includes combat

veterans. Interventions were included if participants had high symptom levels, but interventions in those with diagnosed disorders and those accessed via clinical services were not included.

In compiling the review, preference was given to reviewing recent meta-analyses or systematic reviews where available.

3 Results

3.1 Effectiveness outcomes and measurement

This section of the review aims to answer the following questions:

Which interventions have been shown to be effective in a population or community-level setting, for reducing stigma associated with:

- Depression, and/or
- Anxiety , and /or
- Suicide.

For identified interventions, the outcome measure and criteria for defining effectiveness and an evidence for gender-based differences were indicated. Factors that may be potential barriers and enablers for outcomes of interest were also included.

Anti-stigma initiatives typically take three main approaches: education to challenge inaccurate stereotypes; interpersonal contact with a person with a mental illness; and social activism or protest.[35] Interventions were divided into subcategories according to: the target population (national or regional community campaigns or individuals within particular population groups, such as CALD communities); the mode of delivery (in-person or web-based) and the intervention setting (workplaces, schools, tertiary education institutions).

Strength of evidence was assessed according to the framework outlined by Mihalopoulos and colleagues[36], which is summarised below. For more detail, see Figure 1. See Appendix A for summary table.

Table 2. Classifying the strength of evidence of intervention studies*

ACE Prevention study evidence classification	NHMRC evidence classification
Sufficient evidence	Well designed research: One level I study† Several level II studies Several level III-1 or III-2
Limited evidence	Studies of varying quality One level II study One level III-1 or III-2 of high quality Several level III-1 or III-2 studies Many level III-3 studies
Inconclusive	Studies of insufficient quality No evidence from level I studies No evidence from level II studies Some Level 111 studies available but poor quality
Likely to be effective	Low-quality studies and parallel evidence Level IV studies
May be effective	Lower-quality studies and parallel evidence Level IV studies
No evidence	No position could be reached

**See Figure 1 for more detail.*

†NHMRC levels of evidence:

I: Evidence obtained from a systematic review of all relevant randomised controlled trials
II: Evidence obtained from at least one properly designed randomised controlled trial
III-1; Evidence obtained from well designed pseudo-randomised controlled trials (alternate allocation or some other method)
III-2: Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group
IV: Evidence obtained from either pre-test or post-test case series
Source: Table is based on Haby et al. (2006)

Figure 1. Classifying the strength of evidence of intervention studies

Table 2 Classifying the strength of the evidence: approach adopted in ACE-Prevention

Conventional approach based on epidemiological study design: evidence from Level I–III study designs	Additional categories utilized in the ACE-Prevention study: evidence from Level IV studies, indirect[1] or parallel evidence[2], and/or from epidemiological modeling using a mixture of study designs
"Sufficient evidence of effectiveness" Effectiveness is demonstrated by sufficient evidence from well-designed research: (*a*) The effect is unlikely to be due to chance (e.g., $p < 0.05$), and (*b*) the effect is unlikely to be due to bias, e.g., evidence from[3]: –a level I study design; –several good-quality level II studies; or –several high-quality level III-1 or III-2 studies from which effects of bias and confounding can be reasonably excluded on the basis of the design and analysis.	"Likely to be effective" Effectiveness results are based on: (*a*) Sound theoretical rationale and program logic; and (*b*) Level IV studies, indirect evidence[1] or parallel evidence[2] for outcomes; or (*c*) epidemiological modeling to the desired outcome using a mix of evidence types or levels. The effect is unlikely to be due to chance (the final uncertainty interval does not include zero and there is no evidence of systematic bias in the supporting studies). Implementation of this intervention should be accompanied by an appropriate evaluation budget.
"Limited evidence of effectiveness" Effectiveness is demonstrated by limited evidence from studies of varying quality: (*a*) The effect is probably not due to chance, e.g., $p < 0.10$, but bias—although not certainly an explanation for the effect—cannot be excluded as a possible explanation; e.g., evidence from[3]: –one level II study of uncertain or indifferent quality; –evidence from one level III-1 or III-2 study of high quality; –evidence from several level III-1 or III-2 studies of insufficiently high quality to rule out bias as a possible explanation; or –evidence from a sizeable number of level III-3 studies that are of good quality and consistent in suggesting an effect.	"May be effective" Effectiveness results are based on: (*a*) Sound theoretical rationale and program logic; or (*b*) Level IV studies, indirect[1] or parallel evidence[2] for outcomes; or (*c*) epidemiological modeling to the desired outcome using a mix of evidence types or levels. The effect is probably not due to chance, but bias—although not certainly an explanation for the effect—cannot be excluded as a possible explanation. The intervention would benefit from further research and/or pilot studies before implementation.
"Inconclusive evidence of effectiveness" Inadequate evidence due to insufficient research or research of inadequate quality. No position could be reached on the presence or absence of an effect of the intervention (e.g., no evidence from level I or level II studies; level III studies are available, but they are few and of poor quality).	"No evidence of effectiveness" No position could be reached on the likely credentials of this intervention. Further research may be warranted.

[1]Indirect evidence: information that strongly suggests that the evidence exists (e.g., a high and continued investment in food advertising is indirect evidence that there is positive (but proprietary) evidence that food advertisement increases sales of those products (Swinburn et al. 2005).
[2]Parallel evidence: evidence of intervention effectiveness for another public health issue using similar strategies (e.g., the role of social marketing, regulation, or behavioral change initiatives in tobacco control, sun exposure, speeding, etc.) (Swinburn et al. 2005).
[3]The evidence classifications below are based on those of the Natl. Health Med. Res. Counc. (2000).
I: evidence obtained from a systematic review of all relevant randomized controlled trials.
II: evidence obtained from at least one properly designed randomized controlled trial.
III-1: evidence obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method).
III-2: evidence obtained from comparative studies with concurrent controls and allocation not randomized (cohort studies), case-control studies, or interrupted time series with a control group.
III-3: evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group.
IV: evidence obtained from either pretest or posttest case series.
Source: Table is based on Haby et al. (2006).

3.1.1 National community campaigns

National community campaigns involve activities carried out at a national level, including mass media campaigns, educating journalists, enlisting prominent people to speak about mental illness, sponsoring artistic and sporting events, and free information through printed materials, telephone services and the internet.

UK Defeat Depression Campaign

This campaign primarily involved newspaper and magazine articles, radio and television programs and other media activities.[37] Evaluation involved repeated cross-sectional population surveys.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Outcome measures were largely confined to the assessment of changes in mental health literacy but also assessed agreement with statements about attitudes to depression. The campaign led to an increase in the percentage of people believing that depression is a medical condition like other illnesses.

Gender-based differences: Gender-based differences were not reported.

UK Changing Minds campaign

This campaign primarily involved newspaper and magazine articles, radio and television programs and other media activities.[38] Evaluation involved repeated cross-sectional population surveys.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Outcome measures included an assessment of agreement with statements about attitudes to a range of disorders including depression, panic attacks and phobias. The campaign led to reductions in the beliefs that people with severe depression were 'dangerous to others', 'hard to talk to' and 'feel different to us'. Similar changes were seen for those with panic attacks. The percentage of overall positive opinions increased slightly for severe depression (21%–28%) and panic attacks (31%–36%).

Gender-based differences: Gender-based differences were not reported.

Summary: National community campaigns

Overall strength of evidence: Inconclusive evidence of effectiveness.

Conclusion: There is inadequate research of sufficient quality to indicate whether national community campaigns to reduce stigmatising attitudes to depression or anxiety disorders are effective. This is due to the lack of comparison groups in the identified studies.

Potential barriers and enablers: Barriers to effectiveness include the significant cost of national campaigns and the difficulty in targeting hard-to-reach groups and ensuring that community members get an adequate 'dose' to meaningfully impact on attitudes and behaviours. There are also difficulties involved in evaluation, which is difficult to do in a rigorous way (no available control groups), may be costly and also involves the need for long-term follow-up to assess whether changes in attitudes and behaviours are sustained.

3.1.2 Regional community campaigns

Regional community campaigns involve activities carried out at a regional level, including mass media campaigns and free information through printed materials, telephone services and the internet.

Nuremberg Alliance Against Depression

The Nuremberg Alliance Against Depression, a community campaign conducted from 2001–2002 in the German city of Nuremberg, involved interventions with community providers (e.g. police, clergy, teachers), consumers and their relatives, and a public information campaign.[39] Evaluation involved a comparison with the nearby city of Wurzburg, which served as a control.

Level of evidence: III-2

Outcome measures and criteria for defining effectiveness: After the campaign, residents of Nuremberg were less likely to believe that depression was due to a lack of self-discipline or that the person should 'pull themselves together.[40] In addition, there was a greater reduction in suicidal acts in Nuremberg than in Wurzburg.[41] These effects persisted a year after the intervention had ended.

Gender-based differences: Although females were more aware of the campaign, there were no gender-based differences in stigmatising attitudes.

Suicide Prevention Weeks study

In a Canadian study, Daigle and colleagues[42] investigated the impact of Suicide Prevention Weeks held in some regions of Quebec, Canada in 1999, 2000, and 2001. Evaluation involved a telephone survey of 1020 men and a comparison of exposed and non-exposed regions.

Level of evidence: III-2

Outcome measures and criteria for defining effectiveness: Evaluation showed a slight, but non-significant effect on the number of calls to a helpline and on the number of admissions during Suicide Prevention Week, but no effect on attitudes (relating to the forbidden nature of suicide, expressing pain and help seeking).

Gender-based differences: This study only involved men.

Summary: Regional community campaigns

Overall strength of evidence: Inconclusive evidence of effectiveness.

Conclusion: There is inadequate research of sufficient quality to indicate whether regional community campaigns to reduce stigmatising attitudes to depression or anxiety disorders are effective. Campaigns targeting suicide stigma may be effective as there is some evidence from the identified studies (which involved comparison populations from unexposed regions) that they may impact on behaviour change.

Potential barriers and enablers: Barriers to effectiveness include the difficulty in targeting hard-to-reach groups and in ensuring that community members get an adequate 'dose' to meaningfully impact on attitudes and behaviours. There are also difficulties involved in evaluation, which is difficult to do in a rigorous way, may be costly and also involves the need for long-term follow-up to assess whether changes in attitudes and behaviours are sustained. However, regional community campaigns have greater potential than national campaigns for use of comparison communities in evaluation studies, and they may be a useful testing ground for national campaigns.

3.1.3 In-person psycho-education

In-person psycho-education interventions provide education about mental illness. They are typically delivered by trained individuals and may incorporate videos, seminars and written material. They typically cover information on signs and symptoms of mental illness, treatments, self-help behaviours and where to seek help, as well as how to assist someone with a mental illness. These interventions may incorporate a presentation by, or interaction with, a person with a history of mental illness. This may be in-person or, more commonly, by video.

Mental Health First Aid

Mental Health First Aid (www.mhfa.com.au), which was developed in Australia in 2001, is a 12-hour course that teaches adults (18 years and over) how to provide initial support to adults who are developing a mental illness or experiencing a mental health crisis.[43] There is also a 14-hour youth course for adults working or living with adolescents. Mental Health First Aid has been subject to a number of trials, which have included an assessment of changes in stigmatising attitudes to depression. Three of these trials involved an assessment of changes in the desire for social distance from a person with depression. A fourth trial assessing the impact of Mental Health First Aid on stigmatising attitudes to depression has also been conducted in teachers in South Australian high schools.[44] Teachers at seven schools received training and those at another seven were wait-listed for future training. The effects of the training on teachers were evaluated using questionnaires pre- and post-training and at six months follow-up.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: A review of three Australian intervention studies (one uncontrolled with members of the public in a city, one randomised controlled efficacy trial in a workplace setting and one cluster randomised effectiveness trial with the public in a rural area) found decreased desire for social distance from people with depression.[45]

In high school teachers, Mental Health First Aid training reduced some aspects of personally held stigmatising attitudes to depression in high-school students, namely those relating to depression as a sign of personal weakness (a result that was not maintained at follow-up) and a reluctance to disclose depression to others (a result that was maintained at follow-up). Trained teachers were also more likely to believe that other people see depression as due to personal weakness (maintained at follow-up) and more likely to see other people as reluctant to disclose (not maintained at follow-up).

Gender-based differences: Gender-based differences were not reported.

Study in Taiwanese college students

In a Taiwanese study, Han and colleagues[46] randomly assigned 299 college students to educational intervention groups: one focusing on the biological aspects of depression; one with a de-stigmatisation focus; another combining the two approaches and a control group.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Results showed that biological education increased willingness to seek help, but de-stigmatisation education did not. However, the latter was linked to a reduction in blaming people with depression for their illness.

Gender-based differences: Gender-based differences were not reported.

Study in US psychology students

In a US study, Rusch and colleagues[47] compared the effects of different types of depression stigma reduction programs. Seventy-four undergraduate psychology students were randomised to three programs: one that emphasised the role of contextual factors (such as unemployment, poverty and trauma) in the development of depression; one that emphasised biomedical factors (depression as a

'brain disease'); and an information intervention that did not explicitly address contextual or biomedical factors. An additional group of 12 students served as a no-program control.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Stigmatising attitudes were assessed with the 27-item Depression Attribution Questionnaire (DAQ-27), which assessed a number of aspects of depression stigma, including blame, pity, beliefs about dangerousness and a desire to avoid the person. Results showed that the contextual and control programs reduced stigma significantly compared with the no-program control, whereas the biomedical program did not. Beliefs about the causes of depression were also assessed and further analysis was conducted to assess whether a match between participants' beliefs about depression and the model of depression presented in the stigma programs influenced stigma reduction. Results showed mismatched individuals in the biomedical condition exhibited higher levels of stigma than those in the other conditions. The researchers concluded that education based on a biomedical model may be inappropriate for those who disagree with the model.

Gender-based differences: Gender-based differences were not reported.

Study in members of an African American community

A similar study to that described in Section 3.3.3 involved comparison of education based around a biomedical model with that based around a contextual model, involving 115 African American community members.[48]

Level of evidence: III-2

Outcome measures and criteria for defining effectiveness: Neither program had a long-term impact on stigmatising attitudes as measured by the Depression Self Stigma Scale.[49]

Gender-based differences: Gender-based differences were not reported.

Gatekeeper training for suicide prevention

Gatekeeper training (training targeted to those in contact with suicidal people) is a relatively common intervention for suicide prevention. In a systematic review of studies of gatekeeper training interventions in a range of populations, Isaac and colleagues[50] identified seven studies, all of which positively affected knowledge, skills and attitudes to intervening with a suicidal person.

Other more recent studies have also found beneficial changes in attitudes, including a Japanese study of gatekeeper training in local government workers, which found greater sympathetic attitudes to people with suicidal ideation and more positive attitudes to suicide prevention.[51]

Bean and Baber[52] evaluated Connect, a community-based youth suicide prevention program that the National Alliance on Mental Illness program – New Hampshire developed. The program was based around gatekeeper training of adults and peers. The evaluation, which involved analysis of pre- and post-training questionnaires from 648 adults and 204 high school students, revealed significant changes on a five-item scale assessing stigma related to youth suicide prevention and seeking mental health care. Adults' preparedness to help also increased significantly, as did the likelihood that youth participants would seek adult assistance if they were concerned about a peer. Other more recent reviews support the conclusion that gatekeeper training is a best-practice intervention for suicide prevention.[39,53]

Level of evidence: I

Outcome measures and criteria for defining effectiveness: While measures vary, assessment of the impact of gatekeeper training on stigmatising attitudes to suicide prevention typically involves an assessment of attitudes to professional help seeking, dealing with the problem alone or asking the person about suicidal ideation. Fewer studies measured changes in rates of suicide or suicidal behaviour, although some reported significant improvements.[50]

Gender-based differences: In one of the studies that Isaac and colleagues (50) reviewed, GP education reduced the suicide rate in females only.[54]

Summary: In-person psycho-education

Overall strength of evidence: Sufficient evidence of effectiveness.

Conclusion: There is sufficient evidence to suggest that psycho-education interventions reduce stigmatising attitudes to depression, including blaming the person, beliefs about dangerousness and the desire for social distance. There is sufficient evidence that gatekeeper training improves attitudes to intervening with a suicidal person.

Potential barriers and enablers: While there is sufficient evidence that psycho-education interventions can reduce stigmatising attitudes to depression and suicide, due to their relatively time-consuming nature, the number of people that can be targeted remains relatively limited. Lack of funding is also a major barrier to sustainability as there is rarely adequate funding to support anti-stigma interventions in an ongoing way.

3.1.4 Web-based interventions

Description: Web-based interventions delivered via the internet (or on CD) provide education about mental illness. They may also incorporate skills training and education to challenge inaccurate stereotypes about mental illness.

MoodGYM and BluePages

A number of web-based anti-stigma interventions have been conducted in Australia, two of which involved the depression information website, BluePages and the cognitive-behavioural skills training website, MoodGYM.

Comparison of MoodGYM and BluePages

In the first study, 525 people with elevated scores on a depression assessment scale were randomly allocated to BluePages, MoodGYM or an attention-control condition.[12]

Level of evidence: II

Outcome measures and criteria for defining effectiveness: The effects on personal and perceived stigma (as measured by the DSS) were assessed before and after the intervention. The results showed that both BluePages and MoodGYM significantly reduced personal stigma, although the effects were small. BluePages had no effect on perceived stigma and MoodGYM was associated with an increase in perceived stigma relative to the control.

Gender-based differences: Gender-based differences were not reported.

Web-based intervention and telephone tracking

In a more recent Australian study, 155 callers to Lifeline who met the criteria for moderate to high psychological distress were randomly assigned to one of four conditions:

1: Web Cognitive Behavioural Therapy (CBT) (MoodGYM and BluePages) plus weekly telephone tracking

2: Web CBT only

3: Weekly telephone tracking only

4: Neither Web CBT nor telephone tracking.

Participants were assessed at pre-intervention, post-intervention, and six- and 12-months post-intervention (55).

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Results showed that those in the Web-only and Web-plus-tracking conditions had significantly lower levels of personal stigma (as measured by the DSS) than participants in the control condition at post-intervention. This was true for participants in the Web-only and Web-plus-tracking conditions at six months. However, no significant differences were found in stigmatising attitudes between conditions at 12 months.

Gender-based differences: Gender-based differences were not reported.

Mental Health First Aid e-learning

The effects of Mental Health First Aid training delivered by e-learning have also been assessed in a randomised controlled trial involving 262 members of the Australian public.[56] Participants were randomly assigned to complete an e-learning CD, to read a Mental Health First Aid manual or to be in a waiting list control group. The effects of the interventions were evaluated using online questionnaires pre- and post-training and at six months follow-up.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Both e-learning and the printed manual interventions reduced personal stigma. The printed manual reduced the desire for social distance from those with depression post training.

Gender-based differences: Gender-based differences were not reported.

Web-based intervention in elite athletes

In another recent study, Gulliver and colleagues[57] conducted a randomised controlled trial of three brief fully automated Internet-based mental health interventions with 59 young elite athletes. The interventions consisted of a mental health literacy and anti-stigma condition (specifically targeting depression and anxiety disorders), a feedback condition providing depression and anxiety disorder symptom levels, and a minimal content condition comprising a list of help seeking resources, compared with a control condition (no intervention).

Level of evidence: II

Outcome measures and criteria for defining effectiveness: The results showed that the mental health literacy and anti-stigma intervention was associated with a reduction in personal stigma towards depression relative to control at post-intervention and in personal stigma to anxiety disorders at three-month follow-up. The feedback and help seeking list interventions did not decrease personal stigma. However, the study was underpowered, limiting the ability to draw conclusions.

Gender-based differences: Gender-based differences were not reported.

Summary: Web-based interventions

Strength of evidence: Limited evidence of effectiveness.

Conclusion: There is limited evidence to suggest that studies of web-based, anti-stigma interventions are effective in reducing personal stigma towards depression (as measured by the DSS).

Potential barriers and enablers: Due to their potential for widespread dissemination, web-based interventions may have a valuable role in reducing stigma. However, other than the Mental Health First Aid e-learning trial, the studies described above aimed to alleviate symptoms and promote help seeking in people with symptoms of psychological distress. Reducing stigma to people with mental illness were secondary aims. It is not known if these interventions would be effective in reaching and impacting on the general population who would not be searching for mental health information on the web. Future research may need to explore offering other motives for people to use such websites.

3.1.5 School-based interventions

Description: Interventions delivered in schools that provide education about mental illness. They may incorporate videos, seminars and written material and typically cover information on signs and symptoms of mental illness, treatments, self-help behaviours and where to seek help. They may also incorporate education to challenge inaccurate stereotypes about mental illness.

Mental Illness Education ACT program

In an Australian study, Rickwood and colleagues[58] evaluated a school-based program that aimed to decrease stigmatising attitudes to depression and schizophrenia through presentations given by volunteers who had either lived with, or cared for, someone with these disorders. Participants were 457 high school students.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: The results of the pre-post evaluation showed reduced desire for social distance to depression and schizophrenia after the intervention.

Gender-based differences: There were no gender-based differences in outcomes.

Suicide prevention interventions

A number of school-based interventions designed to prevent suicide have been designed and implemented, some with the stated aim of addressing stigmatising attitudes to suicide.[28,59]

Outcome measures and criteria for defining effectiveness: In a recent review, Robinson and colleagues[59] examined 11 universal interventions (targeted to the whole school community) that measured attitudes to suicide. Seven studies found a significant improvement in positive attitudes to suicidal peers and suicide prevention post-test; two studies observed significant changes in attitude in females only; and two studies did not find any improvement in attitude. Moreover, no changes in help seeking behaviour were seen in these studies. Their review also assessed the impact of gatekeeper training interventions, identifying five studies that assessed attitudes to suicide, two of which reported improvements in attitudes to suicidal peers and suicide prevention.

Level of evidence: I

Gender-based differences: There is some evidence that school-based interventions are more effective in females.

Summary: School-based interventions

Strength of evidence: Inconclusive evidence of effectiveness for interventions targeting depression and anxiety stigma. Sufficient evidence of effectiveness for interventions targeting attitudes to suicide.

Conclusion: Studies of school-based interventions to combat stigmatising attitudes to depression and anxiety disorders are of insufficient quality and quantity to draw conclusions about effectiveness. There is sufficient evidence that school-based interventions can reduce stigmatising attitudes to suicidal peers and suicide prevention.

Potential barriers and enablers: Given the high prevalence of mental health problems in adolescents and the fact that adolescents' beliefs may not be as firmly developed as adults' beliefs, school-based anti-stigma interventions may have a valuable role. If all students are required to participate in such interventions, they may be help to address issues relating to the lack of participation of males in interventions. Engagement with education departments and schools is critical to developing appropriate interventions and to support implementation. Lack of funding is a major barrier to sustainability as stigma reduction is not a core function of schools and there is rarely adequate funding to support anti-stigma interventions in an ongoing way.

3.1.6 Workplace-based interventions

Description: Interventions delivered in workplaces that provide education about mental illness. They may incorporate videos, seminars and written material and typically cover information on signs and symptoms of mental illness, treatments, self-help behaviours and where to seek help. They may also incorporate education to challenge inaccurate stereotypes about mental illness.

A recent scoping study of workplace anti-stigma initiatives identified 22 programs, only one of which specifically targeted depression (*beyondblue*'s National Workplace Program).[60] The other programs targeted the topic of mental illness more broadly and, of these, only 10 had conducted evaluations (six of which targeted armed forces and law enforcement).

Mental Health First Aid in workplace settings

Two randomised controlled trials of Mental Health First Aid have been conducted in workplace settings in Australia, one in high school staff (see Section 3.3.1) and one in public servants.[44,61]

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Both showed reductions in the desire for social distance.

Gender-based differences: Gender-based differences were not reported.

Crisis intervention team training in US police

A US study assessed the effects of crisis intervention team training on stigmatising attitudes to mental disorders, including depression, in police.[62]

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: The results showed a reduction in the desire for social distance from a person with depression.

Gender-based differences: There were no gender-based differences in outcomes.

MindWise mental health literacy intervention

Reavley and colleagues[63,64] conducted a cluster randomised trial to assess the effects of MindWise, a multifaceted mental health literacy intervention, on staff and students of a multi-campus university in Melbourne, Victoria. The intervention was designed to be whole-of-campus and to run over two academic years, with effectiveness assessed through a monitoring sample of students from each campus. Interventions included emails, posters, campus events, factsheets/booklets and Mental Health First Aid training courses. Participants had a 20-minute computer-assisted telephone interview at baseline, at the end of academic year 1 and at the end of year 2.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: The interview assessed personal stigma towards depression (as measured by the DSS) and the desire for social distance. There were no significant differences between intervention and control campuses.

Gender-based differences: Gender-based differences were not reported.

MATES in Construction

In a recent Australian study, a large-scale workplace-based suicide prevention and early intervention program was delivered to more than 9000 construction workers on building sites across Queensland.[65] Intervention components included universal General Awareness Training; general mental health training with a focus on suicide prevention); gatekeeper training provided to construction worker volunteer 'Connectors'; Suicide First Aid training offered to key workers; outreach support provided by trained and supervised staff; state-wide suicide prevention hotline; case management service; and postvention support provided in the event of a suicide.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Evaluation showed that the program improved attitudes to suicide prevention and knowledge in both GAT and gatekeeper training participants. The researchers also reported that workers used the after-hours crisis support phone line and case management service.

Gender-based differences: The intervention was targeted to men.

Summary: Workplace-based interventions

Strength of evidence: Limited evidence of effectiveness in relation to the workplace as an intervention setting.

Conclusion: There is limited evidence for the effectiveness of workplace anti-stigma interventions in reducing desire for social distance from someone with depression, particularly in the case of Mental Health First Aid. However, none of the studies has used work-related outcome measures. There is inadequate research of sufficient quality to indicate whether workplace-based suicide prevention interventions are effective.

Potential barriers and enablers: Other than through national or regional community campaigns, workplaces represent one of the few ways to target the adult population. As a number of workplaces are implementing mental health promotion programs, improved evaluation of these activities and dissemination of findings may assist widespread implementation of workplace initiatives. Engaging managers and business owners to obtain a commitment to addressing stigma is essential to implementing anti-stigma programs in workplaces. Clear productivity benefits, legislative requirements or fear of litigation are likely to be significant drivers of engagement. As with other interventions, lack of funding is also a major barrier to sustainability.

3.1.7 Interventions targeted to Aboriginal and Torres Strait Islander populations

Suicide prevention in Aboriginal and Torres Strait Islander communities

Gatekeeper training

Culturally appropriate community gatekeeper training for suicide prevention has been trialled in 44 members of an Aboriginal and Torres Strait Islander community on the south coast of NSW.[66]

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Evaluation of the workshops, using a pre-post design, demonstrated an increase in participants' knowledge about suicide, greater confidence in identification of people who were suicidal, and high levels of intentions to provide help.

Gender-based differences: Gender-based differences were not reported.

Community forums

Westerman[67] reported on the impact of culturally appropriate forums delivered to service providers, community members (including parents, and elders) and Aboriginal and Torres Strait Islander youth (aged 15–25 years) in Aboriginal and Torres Strait Islander communities in Western Australia.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: The investigators reported improvements in attitudes, skills and knowledge (not further defined) in the area of suicide prevention.

Gender-based differences: Gender-based differences were not reported.

Summary: Interventions targeted to Aboriginal and Torres Strait Islander populations

Strength of evidence: Inconclusive evidence of effectiveness.

Conclusion: There is inconclusive evidence for interventions targeting suicide stigma in Aboriginal and Torres Strait Islander populations.

Potential barriers and enablers: The lack of culturally appropriate interventions is a barrier to implementation in Aboriginal and Torres Strait Islander communities. Engaging with communities to develop programs would increase acceptability and assist in implementation. There is a need for further research to explore what might motivate communities to participate in such interventions. Lack of funding is also a major barrier to sustainability.

3.1.8 Interventions targeted to CALD populations

Description: Interventions targeted to specific culturally and linguistically diverse (CALD) communities that provide education about mental illness. They may incorporate videos, seminars and written material delivered in a culturally appropriate way. They typically cover information on signs and symptoms of mental illness, treatments, self-help behaviours and where to seek help, as well as how to assist someone with a mental illness. They may also incorporate education to challenge inaccurate stereotypes about mental illness.

Mental Health First Aid

Mental Health First Aid in multicultural organisations

A number of studies have assessed the impact of Mental Health First Aid on stigmatising attitudes to depression in CALD groups in Australia. A study carried out in Brisbane involved 458 participants

recruited from multicultural organisations who participated in a series of Mental Health First Aid training courses.[68] Participants completed questionnaires before and after the training course, and six-month follow-up interviews were conducted with a subsample of participants.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Results showed that the course led to a reduction in personal stigma (as measured by the DSS) and desire for social distance from a person with depression.

Gender-based differences: Gender-based differences were not reported.

Mental Health First Aid in the Vietnamese community in Melbourne

In another pre-post study, Minas and colleagues[69] assessed the impact of Mental Health First Aid in 114 members of the Vietnamese community in Melbourne.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Mental Health First Aid decreased beliefs that depression is a sign of personal weakness or not a real illness, decreased beliefs about dangerousness and unpredictability, and increased intention to disclose.

Gender-based differences: Gender-based differences were not reported.

Mental Health First Aid in the Chinese community in Melbourne

Lam and colleagues[70] assessed the impact of Mental Health First Aid in 108 members of the Chinese community in Melbourne.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Mental Health First Aid reduced desire for social distance from a person with depression.

Gender-based differences: Gender-based differences were not reported.

MIDonline

Online interventions may also have a role in reducing depression stigma in CALD communities. The impact of MIDonline, a multilingual information website on depression-related stigma, was assessed in a recent study involving 202 Greek- and Italian-born immigrants aged 48–88 years.[71] Participants were randomly allocated to an online depression information intervention or a depression interview control group. Participants allocated to the information intervention only had access to the website during the 1–1.5-hour intervention session.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: The results showed a significant difference between the MIDonline group and the control group, with those in the MIDonline group displaying significantly greater decreases in personal stigma. There were no changes in perceived stigma.

Gender-based differences: Gender-based differences were not reported.

Summary: Interventions targeted to culturally and linguistically diverse (CALD) populations

Strength of evidence: Limited evidence of effectiveness.

Conclusion: There is limited evidence that in-person psycho-education (particularly Mental Health First Aid) and web-based interventions can reduce stigmatising attitudes to depression in CALD communities, including personal stigma and desire for social distance.

Potential barriers and enablers: The lack of culturally appropriate interventions is a barrier to implementation in CALD communities. Engaging with CALD communities to develop programs would increase appropriateness and assist in implementation. However, there is a need for further research to explore what might motivate CALD communities to participate in such interventions. Lack of funding is

3.1.9 Interventions targeted to health professionals

Description: Interventions targeted to health professionals that provide education about mental illness. They may incorporate videos, seminars and written material and typically cover information on signs and symptoms of mental illness, treatments, self-help behaviours and where to seek help, as well as how to assist someone with a mental illness. They may also incorporate education to challenge inaccurate stereotypes about mental illness.

Anti-stigma interventions targeted to a range of health professionals have been carried out in a number of countries. However, these typically target schizophrenia or mental illness more broadly.

Intervention in Chinese medical students

Rong and colleagues[72] assessed effectiveness of an educational intervention in reducing stigmatising attitudes to depression in Chinese medical students. In this study, 205 medical students were allocated to one of two groups: didactic teaching (DT) group or a combined didactic teaching and self-directed learning (DT/SDL) group. The DT/SDL group continued having a series of learning activities after both groups had a lecture on depression together.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: Stigmatising attitudes were assessed using the Mental Illness: Clinicians' Attitudes (MICA) scale. This scale, which was specially designed to assess the level of stigmatising attitudes to people with mental illness among medical students, includes items that measure views of the health/social care field and mental illness; knowledge of mental illness; distinguishing mental and physical health; and patient care for people with mental illness.[73] The results showed that stigmatising attitudes remained unchanged in the DT group, while in the DT/SDL group, the MICA scores decreased post- intervention and remained lower at one- and six-month follow-up.

Gender-based differences: Gender-based differences were not reported.

Web-based program in special education students

In a pre-post study, Finkelstein and Lapshin[74] assessed the effects of a web-based program on personal stigma and the desire for social distance from a person with depression in 91 Russian students studying special education.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: The results showed reduced desire for social distance after the intervention.

Gender-based differences: Gender-based differences were not reported.

beyondblue depression training program

Mellor and colleagues[75] used a pre-test, post-test design to evaluate the efficacy of the *beyondblue* Depression Training Program in 148 aged-care staff and compared the outcomes with 96 control staff.

Level of evidence: III-2

Outcome measures and criteria for defining effectiveness: The results showed that training improved carers' knowledge about depression, their self-efficacy in responding to signs of depression, and their attitudes to working with depressed aged care recipients.

Gender-based differences: Gender-based differences were not reported.

Suicide prevention

Training general practitioners (GPs) to recognise and treat depression and suicidality has been identified as a best-practice intervention in suicide prevention.[53] However, the majority of studies assess recognition and treatment of underlying mental disorders rather than attitudes. A small number of studies have assessed stigmatising attitudes to suicide and have generally shown improvement.

Hospital staff in Brazil

In a pre-post evaluation, Berlim and colleagues[76] evaluated a three-hour training program on suicide prevention for 142 front-line general hospital personnel in Brazil.

Level of evidence: IV

Outcome measures and criteria for defining effectiveness: Participants were evaluated using the Suicide Behaviour Attitude Questionnaire. The results showed that attitudes to suicidal people and suicide prevention were significantly improved after training in the majority of questionnaire items.

Gender-based differences: Gender-based differences were not reported.

US social work students

Gatekeeper training for suicide prevention has also been assessed in master of social work students.[77] Seventy students were randomly assigned to either a gatekeeper training group or a control group.

Level of evidence: II

Outcome measures and criteria for defining effectiveness: The results showed improvement among the intervention group with regard to knowledge, efficacy to perform the gatekeeper role, and skills. No changes were reported in attitudes to suicidal people and suicide prevention.

Gender-based differences: Gender-based differences were not reported.

Summary: Interventions targeted to health professionals

Strength of evidence: Limited evidence of effectiveness.

Conclusion: There is limited evidence of effectiveness for interventions targeted to health professionals that reduce stigma to depression and suicide (including attitudes to working with people with depression and suicidal ideation or behaviour).

Potential barriers and enablers: Training courses and professional bodies offer opportunities to target health professionals. Targeting younger students whose beliefs are not as firmly developed as older practitioners is likely to be beneficial. However, further research is needed to explore this.

3.1.10 Overall summary

A review of the literature of community and population-based interventions to reduce stigmatising attitudes to depression, anxiety disorders and suicide was conducted. In grading the evidence, the following classifications were used:

- **Sufficient evidence** from well-designed research
- **Limited evidence** from studies of varying quality
- **Inconclusive evidence** due to inadequate research or research of insufficient quality
- **Likely to be effective** based on low quality studies or parallel evidence and where the results are unlikely to be due to chance
- **May be effective** based on low quality studies or parallel evidence and where the results are probably not due to chance.

Stigmatising attitudes to depression and anxiety disorders

Psycho-education interventions

The results (given in order of level of evidence) showed that there is sufficient evidence to suggest that in-person psycho-education interventions reduce stigmatising attitudes to depression, including blaming the person, beliefs about dangerousness and the desire for social distance. These interventions have been used in adult community members, public servants, high school teachers and college students. However, while there is sufficient evidence that psycho-education interventions can reduce stigmatising attitudes to depression and suicide, due to their relatively time-consuming nature, the number of people that can be targeted remains relatively limited. Lack of funding is also a major barrier to sustainability as there is rarely adequate funding to maintain such interventions in an ongoing way.

No interventions targeting stigmatising attitudes to depression and anxiety disorders in Aboriginal and Torres Strait Islander communities were identified. The lack of culturally appropriate interventions is a barrier to implementation in these communities. Engaging with Aboriginal and Torres Strait Islander communities to develop programs is necessary to ensure acceptability and assist in implementation. Lack of funding is also a major barrier to sustainability.

There is limited evidence that in-person psycho-education is effective in reducing stigmatising attitudes to depression in culturally and linguistically diverse (CALD) communities (including personal stigma and desire for social distance). These interventions have been conducted in multicultural populations and in Chinese and Vietnamese communities. However, the lack of culturally appropriate interventions is a barrier to implementation in CALD communities. Engaging with CALD communities to develop programs would assist in implementation. There is a need for further research to explore what might motivate CALD communities in the general population to participate in such interventions. Lack of funding is also a major barrier to sustainability.

There is limited evidence that in-person psycho-education is effective in reducing stigmatising attitudes in health professionals (including attitudes to working with people with depression and suicidal ideation or behaviour). These interventions have been trialled in Chinese medical students and aged care staff. Training courses and professional bodies offer opportunities to target health professionals. Targeting younger students whose beliefs are not as firmly developed as older practitioners is likely to be beneficial. Further research is needed to explore this.

Web-based interventions

There is limited evidence to suggest that studies of web-based, anti-stigma interventions are effective in reducing personal stigma towards depression. Studies have assessed the impact of BluePages and MoodGYM, Mental Health First Aid by e-learning and an intervention in elite athletes. Due to their potential for widespread dissemination, web-based interventions may have a valuable role in

reducing stigma. However, other than the Mental Health First Aid e-learning trial, the studies described above aimed to alleviate symptoms and promote help seeking in people with symptoms of psychological distress. Reducing stigma to people with mental illness were secondary aims and it is not known if these interventions would be effective at reaching and impacting on the general population who would not be searching for mental health information on the web. Future research may need to explore offering other motives for people to use such websites. There is also limited evidence for web-based interventions targeting depression stigma in CALD communities and health professionals.

Workplace interventions

There is limited evidence for the effectiveness of workplace anti-stigma interventions in reducing desire for social distance from someone with depression. Workplace-based interventions include two randomised controlled trials of Mental Health First Aid, crisis intervention team training in police, and a mental health literacy intervention in university employees. Other than through whole-of-community campaigns, workplaces are one of the few ways to reach the adult population. As a number of workplaces are implementing mental health promotion programs, improved evaluation of these activities and dissemination of findings may assist more widespread implementation of workplace initiatives. The engagement of managers and business owners is essential to implementing anti-stigma programs in workplaces. Clear productivity benefits, legislative requirements or fear of litigation are likely to be significant drivers of engagement. As with other interventions, lack of funding is also a major barrier to sustainability.

National and regional campaigns

There is inadequate research of sufficient quality to indicate whether national or regional whole-of-community campaigns to reduce stigmatising attitudes to depression or anxiety disorders are effective. This is due to the lack of comparison groups in the identified studies. Barriers to effectiveness include the significant costs involved in implementing national and regional campaigns, the difficulty in targeting hard-to-reach groups and in ensuring that community members get an adequate 'dose' to meaningfully impact on attitudes and behaviours. There are also difficulties involved in evaluation, which is difficult to do in a rigorous way, may be costly and also involves the need for long-term follow-up to assess whether changes in attitudes and behaviours are sustained.

School-based interventions

There is inconclusive evidence of effectiveness for school-based interventions targeting stigmatising attitudes to depression and anxiety disorders. Engagement with schools, education departments and issues of ongoing funding would need to be addressed for further research to occur.

Stigmatising attitudes to suicide

School-based interventions

There is sufficient evidence that school-based interventions can reduce stigmatising attitudes to suicidal peers and suicide prevention. Given the high prevalence of mental health problems in adolescents and the fact that adolescents' beliefs may not be as firmly developed as adults' beliefs, school-based anti-stigma interventions may have a valuable role to play. If all students are required to participate in such interventions, they may be particularly useful in addressing issues relating to the lack of participation of males in interventions. Engagement with education departments and schools is critical to implementation. Lack of funding is also a major barrier to sustainability as stigma reduction is not a core function of schools and there is rarely adequate funding to maintain anti-stigma interventions in an ongoing way.

Regional campaigns

Regional community campaigns targeting suicide stigma may be effective as there is some evidence from the identified studies (which involved comparison populations from unexposed regions) that they may impact on behaviour change. However, barriers are similar to those described for whole-of-community campaigns targeting stigmatising attitudes to depression and anxiety disorders.

Interventions targeted health professionals

There is limited evidence of effectiveness for interventions targeted to health professionals. Studies have been conducted in hospital staff and Brazil and US social work students. As with interventions to combat stigmatising attitudes to depression and anxiety disorders, engagement with professional bodies and training institutions is likely to be critical to implementation of interventions.

3.2 Gaps in knowledge

The relatively low number of studies specifically addressing stigmatising attitudes to depression, anxiety disorders and suicide is a concern given the extent of morbidity associated with depression at a population level. There are significant gaps in research on interventions to address stigmatising attitudes to depression, anxiety disorders and suicide. These are in the areas of:

3.2.1 Evaluation and high-quality research designs

While a number of whole-of-community campaigns to target stigma relating to depression and suicide have been conducted, with the exception of the Nuremberg Alliance Against Depression[40], evidence of effectiveness of these campaigns is weakened by lack of evaluation or by poor-quality evaluation, including the lack of comparison groups. The review was unable to identify evaluation studies of grassroots contact-based interventions that included an assessment of attitudes to depression, anxiety disorders or suicide (rather than mental illness more broadly). Overall, the methodological quality of evaluations of interventions was variable. Many of the studies used pre-post intervention designs. The lack of control groups limits conclusions about the effectiveness. Other problems included highly variable consent and follow-up rates, and the absence of economic or cost analyses.

3.2.2 Interventions targeting anxiety disorders

A notable gap is the lack of interventions targeting anxiety disorders. Only two studies assessed changes in attitudes to anxiety disorders, including the UK Changing Minds campaign and a web-based intervention for elite athletes. While Changing Minds had a beneficial effect on attitudes to panic disorder[38], the study did not have a comparison group, limiting the conclusions that may be drawn from the study.

3.2.3 Evidence for impact on discrimination outcomes

The majority of studies identified in the review assessed stigmatising attitudes to people with depression and anxiety disorders, but few of the identified studies assessed the impact of interventions on behaviour change, including on the discrimination experiences of people with these disorders. There is also very little evidence from intervention studies of the impact on supportive experiences of people with these disorders.

3.2.4 Long-term follow-up

While there is evidence for the effectiveness of psycho-education and web-based interventions in reducing stigmatising attitudes to depression in various populations, including CALD communities and health professionals, few studies have assessed longer-term effects. The benefits of Mental Health First Aid have been shown to be maintained at six-month follow-up, but other studies have either not assessed or not shown longer-term benefits. There is also a lack of studies on the impact of booster or refresher training following on from interventions that have demonstrated effectiveness.

3.2.5 Studies targeting Aboriginal and Torres Strait Islander communities

No studies targeting the stigma of depression or anxiety disorders in Aboriginal and Torres Strait Islander communities were identified. Only two pre-post studies assessed changes in knowledge and

attitudes relating to suicide prevention. This is a concern given the relatively high rates of psychological distress and suicide in Aboriginal and Torres Strait Islander communities.[2,78] There is a clear need for interventions to address stigma to depression and anxiety disorders in Aboriginal and Torres Strait Islander populations.

3.2.6 Studies addressing suicide stigma

In relation to suicide stigma, there was sufficient evidence that school-based interventions can reduce stigmatising attitudes to suicidal peers and suicide prevention. There is some evidence that regional campaigns targeting suicide stigma may have an impact on behaviour change. However, no studies of interventions to reduce stigmatising attitudes in the general community to people who have previously attempted suicide or their bereaved families were identified. The most common type of intervention targeting the stigma of suicide was gatekeeper training. Many of these studies assessed changes in attitudes to suicide. While the measures varied, they typically assessed attitudes to professional help seeking, dealing with the problem alone or asking the person about suicidal ideation. Fewer studies measured changes in rates of suicide or suicidal behaviour, although some reported significant improvements.

3.2.7 Gender-based sensitivity or priority

Two of the identified studies addressed suicide stigma in males only.[42,65] For all other depression and anxiety disorder-related stigma identified studies, gender differences were either not reported or did not reach statistical significance. However, in most of the identified studies, the majority of participants were female. Even if interventions work equally well for males, they will have limited impact due to lack of engagement. Further work should explore the need to consider issues of gender in the design of anti-stigma interventions, particularly in relation to targeting and engagement. In relation to suicide stigma, there is some evidence that interventions are more likely to be effective in females.[59]

3.3 Directions for future research

Within the area of anti-stigma interventions, a relatively small number of interventions specifically target depression, anxiety disorders or suicide. A greater number provide education or raise awareness of a range of mental disorders but evaluate the impact on attitudes to mental illness more broadly. Others target mental illness without focusing on specific disorders. While there is evidence that stigmatising attitudes vary according to the type of mental illness[24,25], the literature covering interventions targeting mental illness more broadly may offer useful information to inform future research directions, but were out of scope for this review.[35,79] The sections below present the recommendations arising from the review and their rationale and, where possible, highlight the design types and outcomes measures required.

3.3.1 National and regional community campaigns

1: Successfully addressing stigmatising attitudes to depression, anxiety disorders and suicide is likely to involve a multifaceted approach, with different types of interventions targeted to different groups. National or regional community campaigns are likely to play a key role in changing the broad cultural context surrounding people with depression, anxiety disorders and suicidal ideation.

A 2013 Cochrane review concluded that there is justification for continuing to use mass media to counter the stigma associated with mental illness.[80] Examination of the impact of England's Time to Change campaign (http://www.time-to-change.org.uk/) may also be useful in guiding future research. The campaign focused on stigma and mental illness, rather than on depression and anxiety specifically.

Time to Change involved a mass media strategy, events designed to facilitate social contact with people with a mental illness, and sports-related programs. It was aimed both at the general population and at specific target groups (including employers, teachers, medical students and social inclusion officers), as well as at people with mental health problems. Changes in public attitudes were measured every year from 2008–2012 using the Department of Health's national Attitudes to Mental Illness general population survey in England.[81] Unlike anti-stigma programs in many countries, the Time to Change campaign was funded to the tune of approximately £21 million ($AU 34.8 million) for the four years to 2011. The campaign was led by major mental health charities, had clear objectives, and was subject to relatively rigorous and comprehensive evaluation.[81]

However, despite the emphasis on best practice, the results of the Time to Change campaign were mixed.[82] There were improvements in intended behaviour and a non-significant trend for improvement in attitudes, as well as a significant overall reduction in the levels of experienced discrimination reported by people using mental health services. However, there were no significant improvements in knowledge or reported behaviour, or in user reports of discrimination by mental health professionals. The limited impacts of Time to Change underline the enormous challenges involved in this area.

In considering the 'best bet' for the Australian context, it is worth noting that, as mass media interventions have the potential to reach large numbers of people, even small benefits may have important effects at the population level.

3.3.2 Psycho-education and web-based interventions

2: Psycho-education and web-based interventions are likely to have a useful role to play in combating stigma.

Recent reviews of anti-stigma interventions targeting a range of mental illnesses concluded that there is sufficient evidence that psycho-education interventions reduce stigmatising attitudes, with face-to-face contact more effective than contact by video.[35,79] Of all the studies identified in the current review, the strongest evidence was for the impact of psycho-education interventions on personal stigma and the desire for social distance.

3.3.3 Anti-stigma interventions in health services, schools, tertiary education institutions and workplaces

3: Successfully addressing stigmatising attitudes necessitates taking action in multiple settings. These include health services, workplaces, schools and tertiary education institutions.

Psycho-education and web-based interventions have a valuable role in addressing stigma in health professionals, an area of significant concern for consumers. Future research should assess the impact of these interventions using high-quality designs (including randomised controlled trials) and should incorporate longer-term follow-up to explore how often retraining may be needed. There is also some evidence that web-based interventions may be useful in addressing stigma in health professionals, an area that further research might usefully explore.

There have been a number of school-based interventions targeting stigmatising attitudes to mental illness.[83,84] However, the majority of these have targeted mental illness generally or have not measured the impact on stigmatising attitudes to depression and anxiety disorders.

Such research should also focus on the outcomes specific to these settings, including experiences of discrimination related to depression, anxiety disorders and suicide, for example treatment at work

after disclosure of depression. An advantage of these types of targeted interventions is that they may be tailored to a particular context – for example, an intervention targeted to a large male-dominated workplace would be different to one targeted to medical students. Interventions can also focus on the involvement of particular individuals within a community to facilitate broader cultural change, such as senior managers in a workplace. Engaging decision makers and obtaining their commitment to addressing stigma is essential to implementing anti-stigma programs in these settings.

3.3.4 Interventions to target key groups

4: Stigma reduction interventions should target key groups, typically those who have the power to make decisions that impact on the lives of people with depression and anxiety disorders, (e.g. an employer who may decide whether to employ a person with a history of depression or a landlord who may decide whether to rent a property to that person).

The eminent US stigma researcher, Patrick Corrigan, has noted the need for stigma reduction interventions to target key groups, typically those who have the power to make decisions that impact on the lives of people with depression and anxiety disorders.[85] Encouragingly, in their evaluation of Time to Change, Henderson and colleagues[86] found greater realism in employers' views about mental illness, greater appreciation of employees' struggles and improved tendencies to grant reasonable accommodations, pointing to the potential of workplace-based programs to target stigma. Further exploration of discrimination experiences would help to identify key target groups.

3.3.5 Gender-based sensitivity or priority

5: Further research should explore issues around male participation in 'opt-in' mental health interventions and what might motivate them to participate. An advantage of school/tertiary education institution and workplace-based interventions (particularly those in male-dominated workplaces) is that they are more likely to reach males.

While most of the interventions identified in this review do not report gender differences in outcomes, in most of the studies, participants were predominantly female as women are more motivated to participate. Thus, even if an intervention works as well for males, it may have limited reach if they do not participate.

In a systematic review of suicide prevention studies that assessed help seeking outcomes including prevention efforts using psycho-educational, gatekeeper training and public service messaging directed at young people, Klimes-Dougan and colleagues[87] concluded that while there was some evidence that suicide-prevention programs had a positive impact on students' help seeking attitudes, the impact on help seeking behaviour was limited. The authors concluded that program effects on students help seeking differed between males and females, and noted the need for future prevention efforts to closely evaluate program effects according to gender.

3.3.6 Interventions that target specific mental illnesses

6: Stigma and discrimination initiatives should be taught to specific mental illnesses.

As noted in Section 1.2.1, although stigma is often discussed as a single concept, cumulative evidence clearly indicates that it is complex and multidimensional, and may vary according to disorder. For example, a person with social phobia is more likely to be seen as weak rather than sick and a person with depression with suicidal thoughts is more likely to be seen as dangerous.[23] Such

findings support the importance of addressing stigma and discrimination to specific mental disorders. Moreover, there is evidence that the general public associates the term 'mental illness' with more severe disorders such as schizophrenia and bipolar disorder.[25]

3.3.7 A population survey of behaviours towards people with depression, anxiety disorders and those impacted by suicide

7: Preparatory research for a national or regional campaign should involve a population study of behaviours towards people with depression and anxiety disorders with a representative sample, covering the broad range of supportive behaviours and discrimination experiences and their impacts on people with depression and anxiety disorders. The study could also assess attitudes to those with suicidal ideation, those who have attempted suicide and those bereaved by suicide.

In a commentary on the Time to Change campaign, Smith[88] called for a rethink of the way anti-stigma campaigns are conducted, noting the need to avoid the presumption that "more of the same might work in future". Smith pointed to the need to better understand the nature of the events that are reported as discriminatory, as well as those that are supportive and to hear from both sides of the complex relationships in which stigma arises. There is a need for quantitative and qualitative research to explore this.

A population survey could explore a number of factors, such as the:

- Incidence of supportive behaviours and discrimination
- Impact of the disorder type and severity
- Differences in the experiences of those who are in treatment and those who are not
- Association between anticipated discrimination and delayed help seeking
- Extent to which the diagnosis or the degree of disability impacts on discrimination
- Impact of negative cognitions on reporting of actual and anticipated discrimination
- Population subgroups (including gender-based) that are more likely to receive discrimination.

Evidence from such a study could provide much-needed input into the design of anti-stigma interventions, for example, the incorporation into treatments such as CBT of techniques to address anticipated discrimination; education for families and carers about the impact of discrimination on the person with depression or anxiety; and public education to help overcome stigma-related barriers to help seeking. A common weakness of many anti-stigma interventions is that they focus on things people should not do rather than on positive, supportive actions. A better understanding of supportive behaviours would help to outline positive messages that could inform such interventions. Such a survey could also provide baseline data to help evaluate future anti-stigma campaigns.

3.3.8 Exploration of the impact of interventions that involve contact with people with depression or anxiety disorders

8: Further research should explore the impact of contact with people with depression, anxiety disorders and people impacted by suicide, as their impacts may be different to those that involve contact with people with severe mental illness.

Patrick Corrigan has noted the need for stigma reduction interventions to involve contact with people with a mental illness, who are credible to the target audience, and to ensure that contact is ongoing, as one-off interventions are less likely to be effective.[85] A relatively small number of the psycho-

education interventions reviewed here involved contact with a person with depression or anxiety and none involved contact with a person who had attempted suicide. Further work is needed as the impact of interventions involving contact with people with depression, anxiety disorders and people impacted by suicide may be different to those that involve contact with people with severe mental illness.

3.3.9 Exploration of the focus of anti-stigma education

9: Further research should explore the impact of education that emphasises depression and anxiety disorders as 'real illnesses' that are no different from other types of diseases, as there is some evidence that this may increase some aspects of stigma.

Another issue for consideration is the type of education that may feature in anti-stigma interventions. Many education campaigns have an emphasis on depression and anxiety disorders as 'real' illnesses that are no different to other types of diseases for which effective medical treatment is available.[89] Arguably, this has improved mental health literacy and may have led to increased rates of help seeking.[90,91] However, there is evidence that this biomedical model of mental illness may be associated with increased stigma.[92,93] A recent meta-analysis concluded that, while biogenetic explanations of mental illness are linked to reduced blame, they are also associated with increased belief in dangerousness and a desire for social distance.[94] These associations were stronger for schizophrenia than other disorders. Further research on the impact of the biomedical model of education on stigma to depression and anxiety disorders is warranted.

3.3.10 Evaluation of anti-stigma campaigns at a population level

10: Ongoing periodic assessment of experiences of discrimination at a population level should be incorporated into evaluations of future national or regional community campaigns that aim to target stigmatising attitudes to depression, anxiety and suicide.

In addition to assessing knowledge and attitudes, evaluation of the Time to Change campaign involved an annual assessment of experiences of discrimination in those using mental health services. Other aspects of evaluation that may provide useful input into the study of future interventions include the assessment of attitudes of subgroups that play a key role in reducing the impact of discrimination, including health professionals, employers and landlords. Evaluation should also include cost-effectiveness analyses. To improve evaluation quality, interventions could be implemented in one state and outcomes compared with those in a control state (similar to the early assessment of the impact of *beyondblue* on mental health literacy.[90,95] Where local level activities are undertaken, these need to be evaluated and information shared, in order to understand the 'key success factors' in locally driven stigma reduction efforts.

3.3.11 Evaluations to include high-quality research designs

11: Future research in this area should use high-quality research designs to evaluate those interventions that are implemented.

These designs include randomised and cluster randomised controlled trials that include measures of behaviour change (including discrimination and supportive behaviours) and long-term follow-up. Interventions to address suicide stigma should include an assessment of the impact on help seeking behaviours and suicide attempts. Evaluation should also incorporate cost-effectiveness analyses

where appropriate. We recommend that future research exploring the role of psycho-education in reducing stigma incorporate explore how often retraining may be needed.

3.3.12 Barriers and enablers

Analysis of the influence of the Time to Change social marketing interventions showed that prompted awareness of the campaign was consistently associated with better knowledge, attitudes and intended behaviour. These results point to the potential of adequately funded campaigns run by organisations with a high level of community recognition, of which *beyondblue* is an example (96). However, the considerable cost involved in implementing and evaluating such interventions remains a significant barrier. It is worth noting that, as mass media interventions have the potential to reach large numbers of people, even small benefits may have important effects at the population level.

Potential barriers to participation in psycho-education and web-based interventions, including gatekeeper training for suicide prevention, may also need to be addressed. These include a lack of perceived need for strategies to address stigma in particular environments (e.g. workplaces, CALD communities) and concerns about confidentiality, privacy and trust. Effective engagement with stakeholders, including teachers, education providers, employers and employer groups, is critical to effective implementation of psycho-education or web-based interventions.

12: Issues around sustainability also need to be addressed because there is rarely adequate funding to support anti-stigma interventions in an ongoing way.

Lack of funding is also a major barrier to sustainability as there is rarely adequate funding to support anti-stigma interventions in an ongoing way. There is a need to explore sustainable funding models (of which Mental Health First Aid is an example as it draws on the first-aid model of funding).

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Appendix A

Table 1. Interventions targeting stigma associated depression, anxiety disorders and suicide

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Whole of community campaigns						
Defeat Depression[37]	People with depression	UK population	• Newspaper and magazine articles, radio and television programs and other media activities • No control intervention	• Population surveys (n=1946–2050)	IV	• Increase in the belief that depression is a medical condition like other illnesses ($p<0.001$)
Changing Minds [38]	People with depression and anxiety disorders	UK population	• Newspaper and magazine articles, radio and television programs and other media activities • No control intervention	• Population surveys (n=1725–1737)	IV	• Decreases in the beliefs that people with severe depression were 'dangerous to others', 'hard to talk to' and feel different to us' (all $p<0.005$) • Similar changes seen for those with panic attacks • Positive opinions of people with depression increased from 21% to 28% and panic attacks 31% to 36%

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Nuremberg Alliance Against Depression (NAAD)[40,41]	People with depression	Population in Nuremberg and Wurzburg, Germany	• Interventions with community providers (e.g. police, clergy, teachers), consumers and their relatives, and a public information campaign in Nuremberg • Control site with no intervention in Wurzburg	• Population surveys (approx n=1500) • Measurement of suicidal acts	III-2	• Residents of Nuremberg less likely to believe that depression was due to a lack of self-discipline (p=0.002) • Greater reduction in suicidal acts in Nuremberg (p=0.007)
Suicide Prevention Weeks[42]	People with suicidal ideation	Population of Quebec, Canada	• Mass media campaign in some regions • Control group from unexposed regions	• Population survey (n=1020)	III-2	• Slight, but non-significant effect (p>0.05) on the number of calls to a helpline and on the number of admissions during suicide prevention week • No effect on attitudes to suicide prevention
In-person psycho-education						
Mental Health First Aid[97]	People with depression	Australian adult community members (n=210)	• Mental Health First Aid training course • No control intervention	• Case series with pre-test/post-test outcomes • Questionnaires given before, after and at six-month follow-up	IV	• Significant decrease in desire for social distance (p<0.001)
Mental Health First Aid[61]	People with depression	Australian public servants (n=146 in intervention group, n=155 in control group)	• Mental Health First Aid training course • Wait list control	• RCT • Questionnaire given before and at five-month follow-up	II	• Significant decrease in desire for social distance (p=0.005)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Mental Health First Aid[98]	People with depression	Australian adult community members (n=416 in eight intervention communities, n=337 in eight control communities)	• Mental Health First Aid training course • Wait list control	• Cluster RCT • Questionnaires given before and at four-month follow-up	II	• Significant decrease in desire for social distance (p=0.032)
Mental Health First Aid[44]	High school students with depression	High school teachers in South Australia (n=221 in seven intervention schools, n=106 in seven control schools)	• Mental Health First Aid training course • Wait list control	• Cluster RCT • Questionnaires given before, after and at six-month follow-up	II	• Decreases in personally held beliefs that depression is a sign of personal weakness (p=0.024 at post-test) and reluctance to disclose depression to others (p=0.012 at post-test) • Decreases in perceived beliefs that depression is a sign of personal weakness (p=0.031 at follow-up) and reluctance to disclose depression to others (p=0.041 at post-test)
Educational intervention[46]	People with depression	Taiwanese college students (n=299)	• Educational intervention focusing on biological aspects of depression (n=75) • Education focusing on de-stigmatisation (n=76) • Education focusing on both (n=72) • Control group: no intervention (n=76)	• RCT • Questionnaires given before and after	II	• De-stigmatisation intervention linked to a reduction in blaming people for their illness (p<0.01)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Educational intervention[47]	People with depression	US undergraduate psychology students (n=86)	• Education emphasising the role of contextual factors in the development of depression • Education emphasising the role of biomedical factors • Information intervention • Control: no intervention	• RCT • Questionnaires given before and after	II	• Contextual (p=0.035) and control (p=0.023) programs reduced stigma (as measured by the Depression Attribution Questionnaire (DAQ-27) significantly compared with the no-program control, whereas the biomedical program did not
Educational intervention[48]	People with depression	Members of the African American community (n=115)	• Education emphasising the role of contextual factors in the development of depression (n=59) • Education emphasising the role of biomedical factors (n=56)	• Case series with pre-test/post-test outcomes • Questionnaires given before, after and at two-month follow-up	III-2	• No changes in stigmatising attitudes stigma (as measured by the DSSS)
Gatekeeper training[50]	People with suicidal ideation	Public school staff, military personnel, peer helpers, clinicians	• Gatekeeper training	• Systematic review of seven cohort studies	I	• Three studies showed significant improvements in attitudes to suicide intervention

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Gatekeeper training[51]	People with suicidal ideation	Local government workers (n=183) and healthcare workers (n=432) in Japan	• Gatekeeper training	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Improvements in sympathetic attitudes to people with suicidal ideation (p<0.001) • Increases in positive attitudes to suicide prevention (p<0.001)
Gatekeeper training[52]	People with suicidal ideation	US adults (n=648) and high school students (n=204)	• Gatekeeper training of adults and peers	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Significant changes on a five-item scale assessing stigma related to youth suicide prevention and seeking mental health care (p<0.001)
Web-based interventions						
BluePages and MoodGYM[12]	People with depression	Adults with elevated symptoms of depression (n=525)	• Depression literacy website BluePages (n=165) • CBT skills training website MoodGYM (n=182) • Attention control condition (n=178)	• RCT • Questionnaires given before and after	II	• Decreases in personal stigma (DSS) in BluePages and MoodGYM relative to control (p=0.031) • Increase in perceived stigma with MoodGYM relative to control (p=0.012)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
BluePages and MoodGYM[55]	People with depression	Callers to Lifeline (n=155) in Australia	• Web CBT (MoodGYM and BluePages) plus weekly telephone tracking (n=45) • Web CBT only (n=38) • Weekly telephone tracking only (n=36) • Neither Web CBT nor telephone tracking (n=34)	• RCT • Questionnaires given before, after and at six-month and 12-month follow-up	II	• Decreases in personal stigma (DSS) in web CBT only relative to control (p=0.047) at post intervention • Decreases in personal stigma (DSS) in web CBT (p=0.02) and web with tracking (p=0.046) relative to control after six months • No differences at 12 months
Mental Health First Aid e-learning[56]	People with depression	Australian adult community members (n=262)	• Mental Health First Aid training course by e-learning (n=90) • Mental Health First Aid manual (n=88) • Wait-list control (n=84)	• RCT • Questionnaires given before, after and at six-month follow-up	II	• Decreases in personal stigma (DSS) in the e-learning (p<0.01) and the printed manual (p<0.001) interventions relative to wait list post intervention and at six months • Decreases in desire for social distance in the printed manual intervention (p<0.001) relative to wait list post intervention (p<0.05)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Web-based intervention[57]	Athletes with depression and anxiety disorders	Elite athletes (n=59) in Australia	• Internet-based mental health literacy and anti-stigma condition (n=31) • Feedback condition providing depression and anxiety disorder symptom levels (n=30) • Minimal content condition comprising a list of help seeking resources (n=30) • Control condition (no intervention) (n=29)	• RCT • Questionnaires given before, after and at three-month follow-up	II	• Decreases in personal stigma (DSS) to depression in the mental health literacy and anti-stigma condition (p=0.01) post intervention • Decreases in personal stigma (DSS) to anxiety disorders in the mental health literacy and anti-stigma condition (p=0.02) at three-month follow-up
School-based interventions						
Education intervention[58]	People with depression and schizophrenia	High school students in Canberra (n=457)	• Education and presentation by consumers and carers	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Decreases in desire for social distance (p<0.001)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Suicide prevention programs[59]	High school students with suicidal ideation	High school students	• Universal prevention programs • Gatekeeper training • Screening • Indicated interventions • Postvention programs	• Systematic review of school-based studies aimed at responding, treating and responding to suicide-related behaviour	I	• Of 11 universal interventions that measured attitudes tosuicide, seven found a significant improvement in positive attitudes to suicidal peers and suicide prevention at post-test; two studies observed significant changes in attitude in females only • Of five gatekeeper training interventions that assessed attitudes to suicidal peers and suicide prevention, two reported improvements at post-test
Workplace-based interventions						
Crisis intervention training[62]	People with mental disorders including depression	US police officers (n=58 entered study and n=40 underwent post-test assessment)	• Intervention: 40-hour crisis intervention team training involving: structured lectures and discussions by health professionals and advocacy groups; site visits to local emergency facilities and inpatient psychiatric units; experiential de-escalation training using videos and role plays	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Significant decreases in desire for social distance • Greater change found in those without a family history of psychiatric treatment ($p<0.001$)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
MindWise Mental Health Literacy intervention[63, 64]	People with depression	Higher education staff (n=162 in intervention group, n=255 in control group) Higher education students in Australia (n=426 in intervention group, n=341 in control group)	• Multifaceted intervention involving Mental Health First Aid training, posters, website, booklets, student projects	• Cluster RCT • Telephone questionnaires given at baseline, at the end of academic year 1 and academic year 2	II	• No significant changes in personal stigma (DSS) and desire for social distance

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
MATES in construction[65]	People with suicidal ideation	Construction industry workers on building sites in Queensland (n=7311) Comparison group with no intervention (n=355)	• General Awareness Training (GAT; general mental health with a focus on suicide prevention) • Gatekeeper training provided to construction worker volunteer 'Connectors' • Suicide First Aid (ASIST) training offered to key workers • Outreach support provided by trained and supervised staff • State-wide suicide prevention hotline • Case management service • Postvention support	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Improvement in attitudes to suicide prevention in intervention group ($p<0.001$)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Interventions targeted to Aboriginal and Torres Strait Islander communities						
Gatekeeper training[66]	People with suicidal ideation	Members of an Aboriginal and Torres Strait Islander community on the south coast of NSW (n=44)	• Community gatekeeper training workshops	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Increase in participants' knowledge about suicide ($p<0.001$), greater confidence in identification of people who were suicidal ($p<0.05$) and high levels of intentions to provide help ($p<0.05$)
Community forums[67]	Indigenous people with suicidal ideation	Indigenous people in WA (n=997)	• Forums delivered to service providers, community members (including parents, and elders) and Aboriginal and Torres Strait Islander youth	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Improvements in attitudes, skills and knowledge in the area of suicide prevention ($p<0.01$)
Interventions targeted to CALD communities						
Mental Health First Aid[68]	People with depression	People from multicultural organisations in Australia (n=458)	• Mental Health First Aid training course	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Decreases in personal stigma (DSS) ($p<0.001$), perceived stigma ($p<0.001$) and desire for social distance ($p<0.001$)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Mental Health First Aid[69]	People with mental disorders, including depression	Members of the Vietnamese community in Melbourne (n=114)	• Mental Health First Aid training course	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Decreases in belief that depression was a sign of personal weakness ($p<0.05$), not a real medical illness ($p<0.01$) • Decreases in beliefs about dangerousness ($p<0.01$) and unpredictability ($p<0.001$) • Decreases in intention not to disclose depression ($p<0.05$) and not to vote for a politician with depression $p<0.05$)
Mental Health First Aid[70]	People with depression	Members of the Chinese community in Melbourne (n=108)	• Mental Health First Aid training course	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Reduced desire for social distance ($p=0.003$)
Web-based intervention[71]	People with depression	Greek- and Italian-born immigrants in Australia (n=110 in intervention group, n=92 in control group)	• MIDonline, a multilingual information website on depression-related stigma	• RCT • Questionnaires given before, after and at six-month follow-up	II	• Significant decrease in personal stigma (DSS) at post-intervention and follow-up ($p=0.001$)
Interventions targeted to health professionals						
Education intervention[72]	People with depression	Chinese medical students (n=205)	• Didactic teaching (DT) group (n=103) • Combined didactic teaching and self-directed learning (DT/SDL) group (n=102)	• RCT • Questionnaires given before, after, at one-month and six-month follow-up	II	• Scores on MICA decreased in the DT/ SDL group, at post- intervention ($p<0.001$), one-month ($p=0.033$) and six-month follow-up ($p=0.011$)

Study/ campaign	Stigmatised group	Participants in study	Content of intervention and control condition	Design of evaluation	Level of evidence (see Figure 1)	Findings
Web-based program[74]	People with depression	US university staff and graduate students (n=42)	• Web-based depression stigma program covering education on depression, personal stories of patients, and scenarios of behaviour to people with depression	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Significant decrease in desire for social distance • Scale (p=0.005)
Suicide prevention training[76]	People with suicidal ideation	Frontline hospital staff in Brazil (n=142)	• Three-hour training program on suicide prevention	• Case series with pre-test/post-test outcomes • Questionnaires given before and after	IV	• Improvements in attitudes to suicidal people and suicide prevention (p<0.01)
beyondblue Depression education[75]	Older people in care	Staff in aged care facilities, Australia	• *beyondblue* Depression training program(n=148) • Wait list control group (n=96)	• Case series with pre-test/post-test outcomes • Questionnaires given before, after and at three-month follow-up	III-2	• Increase in positive attitudes to working with people with depression post-intervention and at follow-up (p<0.01)
Gatekeeper training[77]	People with suicidal ideation	Social work students in the US	• Gatekeeper training (n=35) • Control (n=38)	• RCT • Questionnaires given before, after and at six month follow up	II	• No change in attitudes to people with suicidal ideation and suicide prevention (p=0.25)

MICA: Mental Illness: Clinicians Attitudes; DSS: Depression Stigma Scale; SBAQ: Suicide Behavior Attitude Questionnaire; DSSS: Depression Self Stigma Scale