Cochrane Library

Cochrane Database of Systematic Reviews

Mental Health First Aid as a tool for improving mental health and well-being (Protocol)

Richardson R, Dale HE, Wellby G, McMillan D, Churchill R

Richardson R, Dale HE, Wellby G, McMillan D, Churchill R.
Mental Health First Aid as a tool for improving mental health and well-being.
Cochrane Database of Systematic Reviews 2018, Issue 9. Art. No.: CD013127.
DOI: 10.1002/14651858.CD013127.

www.cochranelibrary.com

WILEY

TABLE OF CONTENTS

[Intervention Protocol]

Mental Health First Aid as a tool for improving mental health and well-being

Rachel Richardson[1], Holly Eve Dale[1], George Wellby[2], Dean McMillan[3], Rachel Churchill[1]

[1]Cochrane Common Mental Disorders Group, Centre for Reviews and Dissemination, University of York, York, UK. [2]Care of the Elderly Medicine, Warrington and Halton Hospitals NHS Foundation Trust, Warrington, UK. [3]Mental Health and Addiction Research Group, Department of Health Sciences, University of York, York, UK

Contact address: Rachel Richardson, Cochrane Common Mental Disorders Group, Centre for Reviews and Dissemination, University of York, Heslington, York, YO10 5DD, UK. rachelrichardson1@gmail.com.

Editorial group: Cochrane Common Mental Disorders Group.
Publication status and date: New, published in Issue 9, 2018.

Citation: Richardson R, Dale HE, Wellby G, McMillan D, Churchill R. Mental Health First Aid as a tool for improving mental health and well-being. *Cochrane Database of Systematic Reviews* 2018, Issue 9. Art. No.: CD013127. DOI: 10.1002/14651858.CD013127.

ABSTRACT

This is a protocol for a Cochrane Review (Intervention). The objectives are as follows:

Our primary objective is to examine mental health and well-being, mental health service usage, and adverse effects of Mental Health First Aid (MHFA) training on recipients of the intervention.

We have three secondary objectives:

1. To examine the effects of MHFA training on recipients of the trainees' intervention, in terms of their knowledge about mental health and attitudes towards mental health problems.

2. To examine the effects of MHFA training on trainees' knowledge about mental health, attitudes towards mental health problems, number of encounters with people with mental health problems, and their own mental health and well-being.

3. To examine the effects on organisations, looking at measures of absenteeism and productivity at work.

BACKGROUND

Description of the condition

According to the most recent Adult Psychiatric Morbidity Survey, around one in six adults in England meets the criteria for a common mental disorder, which include different types of anxiety disorder and depression. Yet, of adults between the ages of 16 to 74 with these conditions, only 37% were accessing mental health treatment (McManus 2016). A similar pattern is seen worldwide; according to the 2015 Global Burden of Disease study, depression ranks as the third most common cause of years lived with disability worldwide, with anxiety disorders at ninth, and schizophrenia at twelfth (Vos 2016). In 2004, the World Health Organisation estimated that of people with serious mental health disorders, between 36% and 50% in high-income nations and 76% to 85% in low- to middle-income countries, had not received treatment in the past 12 months (Demyttenaere 2004). Improving early iden-

tification of mental health problems and access to treatment is a global health priority.

Mental health problems have a wide-ranging and deleterious effect on many sectors in society. A negative impact on productivity in the workplace is one major aspect. In the UK, for example, an estimated 15.8 million days were lost to sickness absence due to mental health issues (including stress, depression, anxiety, and more serious conditions, e.g. manic depression and schizophrenia) in 2016 (Office for National Statistics 2017). This was the fourth most common reason for sickness absence, accounting for 11.5% of all days lost. Global estimates suggest that across the 36 largest countries in the world, more than 12 billion days of lost productivity are attributable to depression and anxiety disorders every year, at an estimated cost of USD925 billion (Chisholm 2016).

There is evidence that certain professional groups are at increased risk of mental health problems; for example, teaching professionals experience a higher prevalence of common mental disorders than many other professional occupations (Stansfeld 2011).

The impact of mental health problems in other sectors can also be significant. In the US, psychiatric disorders have been found to be common in individuals attending college and their non-college-attending peers (Blanco 2008). A study of US military veterans found that the prevalence of reporting a mental health problem was 19.1% among service members returning from Iraq (Hoge 2006).There is also a significant impact among children and adolescents; Meltzer 2007 found the overall prevalence of childhood mental disorders in the UK was 9.5%. This estimate was reinforced by *The Five Year Forward View for Mental Health* produced by an independent Mental Health Taskforce to the NHS in England, which indicates one in ten children aged between 5 and 16 years has a diagnosable mental health problem (Mental Health Taskforce 2016).

One of the factors that may exacerbate the impact of mental health problems is a lack of mental health literacy in the general population. The term 'mental health literacy' is defined as 'knowledge and beliefs about mental disorders, which aid their recognition, management, or prevention'. The term originated from surveys of Australian adults, which showed that when given vignettes of characters suffering from depression or schizophrenia, most members of the public could not correctly label the disorder, and their recommendations regarding treatments often deviated from standard professional opinion (Jorm 1997). Since then, multiple studies, in different countries, using similar vignettes, have confirmed that the public are generally poor at recognising common mental health conditions, particularly those other than depression; that their beliefs about helping strategies often diverge significantly from the opinion of medical professionals, particularly regarding medication and psychiatric treatment; and that there is widespread stigmatisation of mental illness, particularly schizophrenia (Angermeyer 2006; Jorm 2000; Jorm 2012).

Lack of mental health literacy among the population acts as a barrier to seeking help in several ways. On an individual level, a person may be unaware that they are suffering from a mental health problem that it is treatable, or not know where and how to access treatment. In addition, stigma around mental health problems has been shown to be associated with an unwillingness to seek help (Barney 2006; Stuart 2004; Thornicroft 2008), as well as poorer treatment adherence (DosReis 2009; Sirey 2001; Sirey 2001a). Conversely, it has also been demonstrated that improved mental health literacy is associated with greater intentions to seek help, and more willingness to disclose mental health problems (Rüsch 2011; Suka 2016)

There is evidence that seeking help for mental health is influenced by an individual's social network; people appear more likely to seek professional help if someone else suggests it (Cusack 2004: Wong 2014), and this is influenced by the mental health literacy of the community. Among college students, being prompted to seek help has been found to be related to more positive attitudes towards help-seeking behaviour (Vogel 2007). There is also evidence that people are likely to seek help from their social network: in a study of people who had attempted suicide, Barnes 2002 found that friends and family were the people from whom help was sought most frequently in the previous month. Young people who seek help for mental health problems are more likely to reach out to friends and family first (Rickwood 2007). Thus, the level of mental health literacy across a community may be important in influencing help-seeking.

Description of the intervention

Mental Health First Aid (MHFA) is a training programme developed in Australia in 2000; its aim is to teach mental health first aid strategies to members of the public. Mental Health First Aid is defined as the 'help provided to a person who is developing a mental health problem, experiencing a worsening of a mental health problem, or is in a mental health crisis. The first aid is given until appropriate professional help is received or the crisis resolves' (MHFA Australia 2018a).

The MHFA model involves the training of instructors who are then approved to teach the MHFA course to others. Once trained by an accredited MHFA instructor, an individual is deemed to have the skills necessary to offer mental health first aid to people within their workplace, organisation, or wider community. The MHFA curriculum is based on best practice guidelines, which were derived from expert consensus via the Delphi method. The course covers the symptoms and risk factors in depressive, anxiety, psychotic and substance use disorders, along with associated mental health crisis situations including suicidality, panic attacks, traumatic experiences, threatening behaviour, and drug overdose. Providing help is centred on a five-step action plan, and appropriate ways of applying this to each mental health problem are practiced during the course (Kitchener 2008). The acronym for this action plan is 'ALGEE' which stands for 'Approach, assess, and assist with any crisis; Listen and communicate non-judge-

mentally; Give support and information; Encourage appropriate professional help; Encourage appropriate supports'. This plan is adapted, depending on the actual mental health problem being addressed.

The 'standard' course delivered under the aegis of MHFA Australia lasts for 12 hours, and is delivered face-to-face (MHFA Australia 2018b). It is aimed at people who are aged 18 and over, who are offering initial support to adults in communities and workplaces. However, there are many different courses now being delivered, including those aimed at adults helping adolescents, those aimed at adults helping an older person, and those aimed at a particular cultural groups, for example, Aboriginal and Torres Strait Islander people (Kitchener 2008). The course content is adapted to meet the different needs of specific groups. MHFA courses have also been translated into different languages, and adapted to meet the needs of different countries. Courses are now offered in over 20 different countries, including the USA, Pakistan, and Sweden. Prices for MHFA courses vary, depending on the type of course, and many are subsidised by government bodies. The MHFA Australia web site gives the cost of a face-to-face course as AUD100 to AUD300 per person (MHFA Australia 2018c).

How the intervention might work

The MHFA intervention works in a 'cascade' model; individuals trained to become accredited MHFA instructors deliver training courses designed to equip the trainees with mental health first aid skills. MHFA training programmes are designed to increase knowledge about common mental health problems, and thereby to reduce the stigma often attached to such disorders. The programmes also teach trainees how to provide immediate help to people experiencing mental health difficulties, and how to signpost to professional services. It is theorised that improved knowledge will encourage the trainees to provide support, and encourage people to actively seek help, thereby leading to improvements in mental health.

Why it is important to do this review

For a variety of reasons, concerns about the widespread adoption of MHFA with little formal evaluation have been raised; this review has been designed to summarise the evidence base that could help address these. First, it is important to note that other mental health literacy programmes are available and that MHFA may need to be evaluated in the context of these programmes. Second, the 'cascade' approach taken in MHFA has implications for its evaluation. Whilst there may be positive effects for recipients of the training in terms of their knowledge about and attitudes towards mental health problems, it is important that the actual impact of the intervention is evaluated for the recipients of their intervention (who may have mental health problems) in terms of their own knowledge, attitudes and mental health and well-being outcomes. Third, there is a cost associated with the implementation of MHFA (for example, the costs of the programme and the training as well as the time committed by the trainees engaging with people who may be in psychological distress), and it is important that evidence about all potential impacts of the intervention are assessed. Fourth, the success of MHFA is partly dependent on access to appropriate professional support, which may not always be available in areas where the intervention is implemented; concerns have also been raised that, in the absence of readily accessible support, being encouraged to seek help and subsequently being turned down could lead to worse outcomes for the individual (Watts 2017). Finally, some commentators have even raised ideological concerns, especially because of controversy about the about the nature and expression of mental health problems, with the potential that the intervention risks medicalising, or 'psychiatrizing' normal psychological distress (DeFehr 2016 even describes MHFA as a 'technique of neo-liberal governance, moral surveillance, and social control').

Hadlaczky and colleagues performed a meta-analysis on all existing randomised and non-randomised studies (Hadlaczky 2014). The authors found moderate to small effects of MHFA on knowledge, attitudes, and helping behaviours. Since this, there have been several new randomised controlled trials examining MHFA, and much debate has taken place about what evidence is needed in this area to inform decision-making. This review is being undertaken in the context of a wider research programme of work to explore these issues with a variety of stakeholder groups. While we have been developing this research programme, another review and meta-analysis has been published that includes both randomised and non-randomised controlled trials (Morgan 2018). We are also aware that much of the research evidence on the effects of MHFA consists of qualitative studies and studies with no control group (Crooks 2018; El-Den 2016; Gryglewicz 2018). Our review, while comprehensive, will be limited to randomised controlled trials, and will focus on the effects of MHFA on the mental health and mental well-being of all recipients (be they recipients of the training course or recipients of their intervention), including individuals, communities, and organisations. This information is essential for decision-makers considering the role of MHFA in their organisations.

OBJECTIVES

Our primary objective is to examine mental health and well-being, mental health service usage, and adverse effects of Mental Health First Aid (MHFA) training on recipients of the intervention.

We have three secondary objectives:

1. To examine the effects of MHFA training on recipients of the trainees' intervention, in terms of their knowledge about mental

health and attitudes towards mental health problems.

2. To examine the effects of MHFA training on trainees' knowledge about mental health, attitudes towards mental health problems, number of encounters with people with mental health problems, and their own mental health and well-being.

3. To examine the effects on organisations, looking at measures of absenteeism and productivity at work.

METHODS

Criteria for considering studies for this review

Types of studies

We will include randomised controlled trials (RCTs), including cluster RCTs in this review. We are aware of non-randomised trials of MHFA, but anticipate that there will be considerable data available from RCTs. We will restrict our review to RCTs, as, if conducted properly, RCTs are the most rigorous design for determining the effectiveness of interventions, minimising the risk of bias, and confounding variables.

We will include trials published in any language, provided a suitable translation can be obtained. In the case of ongoing trials, we will contact study authors to see if preliminary data are available. We will also include unpublished trials.

Types of participants

Participant characteristics

Recipients of MHFA training (trainees) or of MHFA intervention. We will include recipients of any age and any population, including minority and disadvantaged groups, and underserved populations, such as older people.

If studies include data on populations that are not included in the review, we will only consider those where data can be disaggregated for relevant populations.

Setting

We will place no restrictions on setting. We will include studies undertaken in any type of organisation, including schools, higher education facilities, other types of workplaces, and other organisations, such as community groups. We will consider the impact of the setting of the intervention in the subgroup analyses, when there are sufficient data to do this, and we will take account of the potential role of the setting (for example, whether large or small, or the likely prevalence of mental health problems) in interpreting our findings.

Types of interventions

Experimental Intervention

- Any type of MHFA-trademarked course, derived from the official MHFA programme designed to train people to deliver MHFA. We will include MHFA training that has been adapted for, or tailored to the needs of specific or underserved populations (including young people, older people, specific professional groups, and minority ethnic populations). We will include traditional face-to-face courses, and those delivered via reading materials or digital media. We will include studies where MHFA has been delivered as part of a multifaceted, or more complex mental health and well-being programme.

Comparator intervention

- No intervention, active or attention control (such as first aid courses), waiting list control, or alternative mental health education interventions distinct from MHFA. We will not include comparisons of different adaptations of MHFA.

Types of outcome measures

We will include studies regardless of whether they report the outcomes listed below.

Primary outcomes

Our primary outcomes relate to recipients of the MHFA intervention, and are as follows:

- Mental health and well-being of recipients, measured by a validated measure, for example the Strengths and Difficulties Questionnaire (SDQ);
- Mental health service usage, measured by objective service records. These may include clinic records, referrals to health care professionals, or the costs of service usage;
- Adverse effects of MHFA, for example, documented instances of inappropriate advice, delays in receiving treatment, and inappropriate service usage.

Secondary outcomes

Our secondary outcomes relate to recipients of the MHFA intervention, recipients of MHFA training (trainees), and communities or organisations in which MHFA training has been delivered (data for each of these groups will be analysed separately). They include:

- Knowledge about mental health problems. Measures must be based on information about mental health problems, and been validated, for example, by consultation with mental health professionals;
- Stigmatising attitudes towards mental health problems, assessed by a validated social distance or stigma scale;
- Self-reported contacts, or help provided to people with a mental health problem, since training;
- Mental health and well-being of trainees and organisations, using a validated measure;
- Absenteeism across an organisation, however measured;
- Productivity across an organisation, however measured;
- Cost-effectiveness of providing the intervention.

Timing of outcome assessment

Trials should evaluate outcomes immediately post-MHFA course, and at follow-ups of less than six months, six months to a year, and over one year. If outcomes are measured at multiple time points within each window, the latest recorded observations will be extracted, as this best represents the longevity of the intervention's effects. Outcomes measured at six months to a year will be treated as the primary time point for the 'Summary of Findings' table, as we believe that this represents the best balance between assessing whether MHFA has produced any lasting changes in trainees, and allowing time for its impact to be felt amongst recipients of the MHFA intervention, against the erosive effect that time will have on the impact of an educational intervention.

Hierarchy of outcome measures

Where outcomes have been measured in several ways, we will give priority to the one that is most frequently used among the included trials. If multiple scales are used to measure the same construct, we will combine data using appropriate statistical techniques, as discussed below.

Search methods for identification of studies

We will develop a sensitive search strategy to identify randomised controlled trials (Lefebvre 2011). This approach will use bibliographic databases searching, using a search strategy developed for MEDLINE Ovid (Appendix 1), and it will include the use of supplementary search methods, as set out below.

Cochrane Common Mental Disorders Controlled Trials Register (CCMDCTR)

The Cochrane Common Mental Disorders Group (CCMD) maintains two archived clinical trials registers at its editorial base in York, UK: a references register and a studies-based register. The CCMDCTR References Register contains over 40,000 reports of RCTs in depression, anxiety, and neurosis. Approximately 50% of these references have been tagged to individual, coded trials. The coded trials are held in the CCMDCTR Studies Register, and records are linked between the two registers through the use of unique Study ID tags. Coding of trials is based on the EU-Psi coding manual, using a controlled vocabulary (please contact the CCMD Information Specialists for further details). Reports of trials for inclusion in the Group's registers are collated from routine (weekly), generic searches of MEDLINE (1950 to 2016), Embase (1974 to 2016) and PsycINFO (1967 to 2016); quarterly searches of the Cochrane Central Register of Controlled Trials (CENTRAL), and review-specific searches of additional databases. Reports of trials are also sourced from international trial registers via the World Health Organization's trials portal (the International Clinical Trials Registry Platform (ICTRP)), pharmaceutical companies, the handsearching of key journals, conference proceedings, and other (non-Cochrane) systematic reviews and meta-analyses. Details of CCMD's core search strategies (used to identify RCTs) can be found on the Group's website, with an example of the core MEDLINE search displayed in Appendix 2.
The register is not currently maintained since the group's move from Bristol to York in June 2016.

Electronic searches

The Cochrane Common Mental Disorders Information Specialist will search the following electronic databases:
- CCMDCTR (Studies and References Register; all available years);
- Cochrane Central Register of Controlled Trials (CENTRAL; current issue);
- MEDLINE Ovid databases (1946 to date; Appendix 1);
- Embase Ovid (1974 to date);
- PsycINFO Ovid (all years);
- PubMed (not MEDLINE; 1945 to date).

We will apply no restrictions on study design, date, language, or publication status to the searches.

Searching other resources

Trials registers

We will search the following trials registers for ongoing, unpublished or completed trials:
- The World Health Organization's trials portal (ICTRP);
- Clinical Trials.Gov (ClinicalTrials.gov); and
- the EU clinical trials register (clinicaltrialsregister.eu).

Results will be downloaded to Zotero and imported into Endnote.

Conference proceedings

Embase contains conference abstracts from 2009 and we will search the Web of Science (Calvairate Analytics) for conference proceedings.

Grey literature

We will search the the grey literature for randomised controlled trials:

- Open Grey http://www.opengrey.eu/;
- Dissertations & Theses: UK and Ireland (ProQuest); and
- a search of the Internet will be undertaken using search terms from the MEDLINE search strategy. Google advanced search will be used.

Reference lists

We will check the reference lists of all included studies and relevant systematic reviews to identify additional studies missed from the original electronic searches (for example, unpublished or in-press citations).

Correspondence

We will contact trialists and subject experts for information on unpublished or ongoing studies, or to request additional trial or study data, as applicable.

Data collection and analysis

Selection of studies

Two members of the review team (RR, HD) will independently screen the titles and abstracts of reports obtained through the search strategy, and decide whether studies are potentially relevant or not. They will discard records deemed obviously not eligible, and retrieve full copies of potentially relevant papers. They will resolve disagreements by discussion; if consensus cannot be reached, they will retrieve the full text for further scrutiny. Two review authors (RR, HD) will then independently review the full text of these studies, and decide whether they meet the inclusion criteria. The review authors will resolve any disagreement by discussion with a third member of the team (RC) until a consensus is reached. If a consensus cannot be reached, we will attempt to contact study authors to obtain further information. They will document and summarise reasons for excluding studies at the full-text stage in a 'Characteristics of excluded studies' table, and illustrate the process of the literature search and study selection in a PRISMA flow diagram (Higgins 2011a).

Data extraction and management

Two review authors (RR, HD) will extract data from selected studies, using specifically designed template forms piloted on at least one study in the review, and revised as necessary. One review author (RR) will extract data, and a second (HD) will check them. As well as data regarding outcomes of interest, other information extracted will include study design, population, size, type of MHFA training and duration, type of comparator intervention, length of follow-up, and statistical methods used. We will also extract source of funding, any reported conflicts of interest, and researcher allegiance. We will make a note of any outcomes that are reported in the studies, but which we do not extract. We will note studies that meet our inclusion criteria but contain no outcome data relevant to the review in the 'Characteristics of included studies' table. We will resolve any disagreements by discussion with a third author (RC). One reviewer (RR) will transfer the extracted data into Review Manager 5, the Cochrane Review software, for analysis (Higgins 2011a; Review Manager 2014).

Main planned comparisons

- MHFA training versus no intervention (including waiting list controls).
- MHFA training versus alternative mental health literacy education interventions.
- MHFA training versus active or attention control.

Assessment of risk of bias in included studies

We will assess the risk of bias in included studies using Cochrane's revised tool (RoB 2.0; Higgins 2016). One reviewer (RR) will independently assess the risk of bias, and a second reviewer (HD) will check the assessments. They will resolve disagreements by discussion. If disagreement remains, they will consult a third reviewer (RC).

We will assess individually randomised studies according to the following domains:

- Bias arising from the randomisation process
- Bias due to deviations from intended interventions
- Bias due to missing outcome data
- Bias in measurement of the outcome
- Bias in selection of the reported result
- Overall bias

Cluster randomised studies will be assessed according to the following domains:

- Bias arising from the randomisation process
- Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation
- Bias due to deviations from intended interventions
- Bias due to missing outcome data
- Bias in measurement of the outcome

- Bias in selection of the reported result
- Overall bias

For each of the domains, we will assess the risk of bias as low risk, some concerns, or high risk.
We will document our decisions in the 'Risk of bias' table, and summarise risk of bias across studies for each domain in a 'Risk of bias' graph.

Measures of treatment effect

Dichotomous data

We will analyse dichotomous data using risk ratios (RRs) with 95% confidence intervals (CI). This will be relevant for outcomes relating to mental health, where there is a threshold for clinical caseness, for example, 'depressed or not depressed'. We will convert count data (e.g. number of contacts with health care professionals (HCPs)), to dichotomous data; for example, no contacts with HCPs versus one or more contacts with HCPs (Deeks 2011).

Continuous data

We will analyse continuous data as mean differences (MD) with 95% CIs when all the studies use the same outcome measure, or standardised mean differences (SMD) with 95% CIs if different measurements are used. We anticipate that studies may include a mixture of change-from-baseline and final value scores. We will not combine final value and change scores as standardised mean differences, since the difference in standard deviation does not reflect differences in measurement scale, but differences in the reliability of the measurements (Deeks 2011).

Unit of analysis issues

Cluster-randomised trials

We will include cluster RCTs as long as adjustment for the intracluster correlation coefficient (ICC) has been performed by the authors in a reasonable manner. If authors have adjusted for clustering, and imputed missing data in a reasonable manner in their analyses, we will report their summary statistics and use these in meta-analyses, as appropriate. If they have not conducted such an adjustment, we will attempt to correct the analysis, using the methods described in Chapter 9 of the *Cochrane Handbook of Systematic Reviews for Interventions* (Deeks 2011). We will use an estimate of the ICC obtained from similar studies.

Studies with multiple treatment groups

If studies have multiple arms, including alternative mental health literacy interventions that are not MHFA, we will undertake multiple pair-wise analyses comparing MHFA to each relevant comparator arm. If studies include more than one type of MHFA intervention compared to a relevant comparator arm, we will combine the MHFA intervention arms and compare the combined numbers with the control group, to give an estimate of the effect of MHFA training versus control (Deeks 2011).

Dealing with missing data

We will attempt to contact the authors to retrieve any data that appear to be missing from study reports, and for which no explanation is given. We will consider imputing values for standard deviations, where these are not available from study reports or authors, in accordance with this guidance offered in Chapter 16 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011b). We will not impute other missing outcome data and will only analyse the data available in the study reports. We will not include data where the study authors have undertaken a 'per protocol' analysis and not analysed participants in the groups to which they were originally randomised.

Assessment of heterogeneity

We will use a combination of different techniques to assess heterogeneity, as described in Chaper 9 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Deeks 2011). We will visually inspect forest plots to assess the possibility of heterogeneity among studies. We will calculate the heterogeneity of each outcome using the I^2 statistic, which estimates the percentage of variability due to differences between studies, rather than chance. The importance of the observed value of I^2 depends on (i) magnitude and direction of effects and (ii) strength of evidence for heterogeneity (e.g. P value from the chi-squared test, or a confidence interval for I^2). We will interpret the I^2 according to the scale included in Chapter 9 of the *Cochrane Handbook for Systematic Reviews of Interventions*, which suggests that: values of 0% to 40% might not be important; 30% to 60% may represent moderate heterogeneity; 50% to 90% may represent substantial heterogeneity; and 75% to 100% may represent considerable heterogeneity (Deeks 2011).

Assessment of reporting biases

If we include more than 10 studies in the analysis, we will create funnel plots of effect size versus study power, and examine these for signs of asymmetry. We will use appropriate statistical tests, as suggested in Chapter 10 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Sterne 2011). If present, we will explore possible reasons for this.

Data synthesis

We anticipate that there will be considerable heterogeneity among studies, due to the variety of study settings and populations. Therefore, we will perform meta-analyses using a random-effects model. However, as part of the sensitivity analyses, we will perform fixed-effect analyses and compare the results. We will only perform a meta-analysis if participants, interventions, comparisons, and outcomes are judged to be sufficiently similar. We will not combine outcome data relating to the different populations which we are examining (recipients of MHFA intervention, recipients of MHFA training (trainees), and communities or organisations in which MHFA training has been delivered). If the heterogeneity of studies prohibits meta-analysis, or there are insufficient studies, we will synthesise the results in a narrative format instead (Deeks 2011).

Subgroup analysis and investigation of heterogeneity

Where sufficient studies are available, we will perform the following subgroup analyses to explore the data further, and to examine the reasons for any heterogeneity we detect (Deeks 2011).

- Setting: MHFA courses are delivered in various settings, for example schools, workplaces and for the general public. We believe that the setting in which the MHFA intervention is delivered may affect outcomes.
- Tailored vs non-tailored: This intervention is often adapted to meet the needs of populations in different settings (for example, military personnel), which may impact on its effectiveness.
- Country: MHFA courses have been delivered in many countries worldwide and we believe that the country in which the intervention is delivered is likely to affect outcomes.

Sensitivity analysis

To test the assumptions of the estimated effect size for the intervention, we will also perform sensitivity analyses as follows (Deeks 2011):

- Excluding studies with inadequate assessor blinding;
- Excluding studies at high risk or some concerns of attrition bias;
- Excluding studies at high risk or some concerns of researcher allegiance bias;
- Using a fixed-effect model instead of a random-effects model.

'Summary of findings' table

We will produce a 'Summary of Findings table' illustrating the estimated effects for each of the three primary outcomes (mental health and well-being of recipients of MHFA programme, mental health service usage, and adverse effects of MHFA) for the comparison of MHFA versus no intervention, and the amount of pooled data on which they are based. We will estimate the assumed risks from the 'no intervention' group data. In addition, we will assess the quality of the body of evidence for each outcome, using the GRADE approach, which takes into account risks of bias, directness of evidence, imprecision, unexplained heterogeneity, and risk of publication bias in the studies pooled for each outcome of interest (Schünemann 2011). A blank Summary of Findings table for the comparison between MHFA and no intervention is included as Appendix 3.

We will use the GRADEpro software to create the 'Summary of findings' table (GRADEpro GDT).

ACKNOWLEDGEMENTS

We would like to thank the Cochrane Common Mental Disorders Group Information Specialist Chris Cooper for his contribution to the search strategy.

CRG Funding Acknowledgement: The National Institute for Health Research (NIHR) is the largest single funder of the Cochrane Common Mental Disorders Group.

Disclaimer: The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NIHR, National Health Service (NHS), or the Department of Health.

REFERENCES

Additional references

Angermeyer 2006
Angermeyer MC, Dietrich S. Public beliefs about and attitudes towards people with mental illness: a review of population studies. *Acta Psychiatrica Scandinavica* 2006; **113**(3):163–79.

Barnes 2002
Barnes LS, Ikeda RM, Kresnow M. Help-Seeking Behavior Prior to Nearly Lethal Suicide Attempts. *Suicide and Life-Threatening Behaviour* 2002;**32**(s1):68–75.

Barney 2006
Barney LJ, Griffiths KM, Jorm AF, Christensen H. Stigma about depression and its impact on help-seeking intentions. *Australian and New Zealand Journal of Psychiatry* 2006;**40** (1):51–4.

Blanco 2008
Blanco C, Okuda M, Wright C, Hasin DS, Grant BF, Liu

SM, et al. Mental health of college students and their non-college-attending peers: results from the National Epidemiologic Study on Alcohol and Related Conditions. *Archives of General Psychiatry* 2008;**65**:1429–37.

Chisholm 2016
Chisholm D, Sweeny K, Sheehan P, Rasmussen B, Smit F, Cuijpers P, et al. Scaling-up treatment of depression and anxiety: a global return on investment analysis. *Lancet Psychiatry* 2016;**3**:415–24.

Crooks 2018
Crooks CV, Lapp A, Auger M, van der Woerd K, Snowshoe A, Rogers BJ, et al. A feasibility trial of Mental Health First Aid First Nations: acceptability, cultural adaptation, and preliminary outcomes. *American Journal of Community Psychology* 2018;**61**:459–71.

Cusack 2004
Cusack J, Deane FP, Wilson CJ, Ciarrochi J. Who influence men to go to therapy? Reports from men attending psychological services. *International Journal for the Advancement of Counselling* 2004;**26**(3):271–83.

Deeks 2011
Deeks JJ, Higgins JPT, Altman DG, editor(s). Chapter 9: Analysing data and undertaking meta-analyses. In: Higgins JPT, Green S, editor(s). Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

DeFehr 2016
DeFehr JN. Inventing Mental Health First Aid: the problem of psychocentrism. *Studies in Social Justice* 2016;**10**(1): 1–18.

Demyttenaere 2004
Demyttenaere K, Bruffaerts R, Posada-Villa J, Gasquet I, Kovess V, Lepine J P, et al. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *JAMA* 2004; **291**(21):2581–90.

DosReis 2009
DosReis S, Mychailyszyn MP, Evans-Lacko SE, Beltran A, Riley AW, Myers MA. The meaning of attention-deficit/ hyperactivity disorder medication and parents' initiation and continuity of treatment for their child. *Journal of Child and Adolescent Psychopharmacology* 2009;**19**(4):377–83.

El-Den 2016
El-Den S, O'Reilly CL, Chen TF. Does Mental Health First Aid training affect MPharm students' literacy, knowledge and attitudes towards perinatal depression? A pre-test/ post-test pilot study. *Research in Social and Administrative Pharmacy* 2016;**12**:e19–e47.

GRADEpro GDT [Computer program]
McMaster University (developed by Evidence Prime). GRADEpro GDT. Version accessed August 2018. Hamilton (ON): McMaster University (developed by Evidence Prime), 2015.

Gryglewicz 2018
Gryglewicz K, Childs KK, Soderstrom MFP. An evaluation of youth Mental Health First Aid training in school settings. *School Mental Health* 2018;**10**:48–60.

Hadlaczky 2014
Hadlaczky G, Hökby S, Mkrtchian A, Carli V, Wasserman D. Mental Health First Aid is an effective public health intervention for improving knowledge, attitudes, and behaviour: a meta-analysis. *International Review of Psychiatry* 2014;**26**(4):467–75.

Higgins 2011a
Higgins JPT, Deeks JJ, editor(s). Chapter 7: Selecting studies and collecting data. In: Higgins JPT, Green S, editor(s), Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

Higgins 2011b
Julian PT Higgins, Jonathan J Deeks and Douglas G Altman on behalf of the Cochrane Statistical Methods Group. Chapter 16: Special topics in statistics. In: Higgins JPT, Green S, editor(s), Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

Higgins 2016
Higgins JPT, Sterne JAC, Savović J, Page MJ, Hróbjartsson A, Boutron I, et al. A revised tool for assessing risk of bias in randomized trials. In: Chandler J, McKenzie J, Boutron I, Welch V, editor(s). Cochrane Methods. Cochrane Database of Systematic Reviews 2016, issue 10 Suppl 1. DOI: 10.1002/14651858.CD201601

Hoge 2006
Hoge CW, Auchterlonie JL, Milliken CS. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA* 2006;**295**:1023–32.

Jorm 1997
Jorm AF, Korten AE, Jacomb PA, Christensen H, Rodgers B, Pollitt P. 'Mental health literacy': a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia* 1997;**166**(4):182–6.

Jorm 2000
Jorm A F. Mental health literacy. Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry* 2000;**177**:396–401.

Jorm 2012
Jorm AF. Mental health literacy: empowering the community to take action for better mental health. *American Psychologist* 2012;**67**(3):231–43.

Kitchener 2008
Kitchener BA, Jorm AF. Mental Health First Aid: an international programme for early intervention. *Early Intervention in Psychiatry* 2008;**2**(1):55–61.

Lefebvre 2011
Lefebvre C, Manheimer E, Glanville J. Chapter 6: Searching for studies. In: Higgins JPT, Green S, editor(s). Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

McManus 2016
McManus S, Bebbington P, Jenkins R, Brugha T, editor(s). Mental health and wellbeing in England: adult psychiatric morbidity survey 2014. content.digital.nhs.uk/catalogue/PUB21748 2016.

Meltzer 2007
Meltzer H. Childhood mental disorders in Great Britain: an epidemiological perspective. *Child Care in Practice* 2007; **13**:313–26.

Mental Health Taskforce 2016
Mental Health Taskforce to the NHS in England. The Five Year Forward View for Mental Health. www.england.nhs.uk/mentalhealth/taskforce Feb 2016.

MHFA Australia 2018a
Mental Health First Aid Australia. What we do at Mental Health First Aid. mhfa.com.au/about/our-activities/what-we-do-mental-health-first-aid (accessed 09 January 2018).

MHFA Australia 2018b
Mental Health First Aid Australia. Standard MHFA. mhfa.com.au/courses/public/types/standardedition4 (accessed 09 January 2018).

MHFA Australia 2018c
Mental Health First Aid Australia. What is the cost of attending the MHFA course. mhfa.zendesk.com/hc/en-us/articles/203549734-What-is-the-cost-of-attending-the-MHFA-course- (accessed 24th April 2018).

Morgan 2018
Morgan AJ, Ross A, Reavley NJ. Systematic review and meta-analysis of Mental Health First Aid training: effects on knowledge, stigma and helping behaviour. *PLoS One* 2018;**13**(5):e0197102.

Office for National Statistics 2017
Office for National Statistics. Sickness absence in the labour market 2016. www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/sicknessabsenceinthelabourmarket/2016 (accessed 09 January 2018).

Review Manager 2014 [Computer program]
Nordic Cochrane Centre, The Cochrane Collaboration. Review Manager 5 (RevMan 5). Version 5.3. Copenhagen: Nordic Cochrane Centre, The Cochrane Collaboration, 2014.

Rickwood 2007
Rickwood DJ, Deane FP, Wilson CJ. When and how do young people seek professional help for mental health problems?. *Medical Journal of Australia* 2007;**187**(7 Suppl): S35–9.

Rüsch 2011
Rüsch N, Evans-Lacko SE, Henderson C, Flach C, Thornicroft G. Knowledge and attitudes as predictors of intentions to seek help for and disclose a mental illness. *Psychiatric Services (Washington, D.C.)* 2011;**62**(6):675–8.

Schünemann 2011
Schünemann HJ, Oxman AD, Higgins JPT, Vist GE, Glasziou P, Guyatt GH. Chapter 11: Presenting results and 'Summary of findings' tables. In: Higgins JPT, Green S, editor(s), Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

Sirey 2001
Sirey JA, Bruce ML, Alexopoulos GS, Perlick DA, Friedman SJ, Meyers BS. Stigma as a barrier to recovery: perceived stigma and patient-rated severity of illness as predictors of antidepressant drug adherence. *Psychiatric Services (Washington, D.C.)* 2001;**52**(12):1615–20.

Sirey 2001a
Sirey JA, Bruce ML, Alexopoulos GS, Perlick DA, Raue P, Friedman SJ, et al. Perceived stigma as a predictor of treatment discontinuation in young and older outpatients with depression. *American Journal of Psychiatry* 2001;**158** (3):479–81.

Stansfeld 2011
Stansfeld SA, Rasul FR, Head J, Singleton N. Occupational and mental health in a national UK survey. *Social Psychiatry and Psychiatric Epidemiology* 2011;**46**:101–10.

Sterne 2011
Sterne JAC, Egger M, Moher D, editor(s). Chapter 10: Addressing reporting biases. In: Higgins JPT, Green S, editor(s). Cochrane Handbook for Systematic Reviews of Intervention. Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.handbook.cochrane.org.

Stuart 2004
Stuart H. Stigma and work. *Healthcare Papers* 2004;**5**(2): 100–11.

Suka 2016
Suka M, Yamauchi T, Sugimori H. Help-seeking intentions for early signs of mental illness and their associated factors: comparison across four kinds of health problems. *BMC Public Health* 2016;**16**:301.

Thornicroft 2008
Thornicroft G. Stigma and discrimination limit access to mental health care. *Epidemiologia e psichiatria sociale* 2008; **17**(1):14–9.

Vogel 2007
Vogel DL, Wade NG, Wester SR, Larson L, Hackler AH. Seeking help from a mental health professional: the influence of one's social network. *Journal of Clinical Psychology* 2007;**63**(3):233–45.

Vos 2016
Vos T, Allen C, Arora M, Barber RM, Bhutta ZA, Brown A, GBD 2015 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet* 2016;**388** (10053):1545–602.

Watts 2017
Watts J. The mental health first aid programme is a pet project - if the NHS services were properly funded in the first place, it wouldn't be needed. The Independent 15th July 2017.

Wong 2014
Wong J, Brownson C, Rutkowski L, Nguyen CP, Becker MS. A mediation model of professional psychological help seeking for suicide ideation among Asian American and White American college students. *Archives of Suicide Research* 2014;**18**(3):259–73.

* *Indicates the major publication for the study*

APPENDICES

Appendix 1. Review MEDLINE Ovid search

Database: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R)
Host: OVID
Data parameters: 1946 to Present
Date searched: Monday, February 5th 2018
Searcher: Chris Cooper
Hits: 752
Search strategy:

#	Searches	Results
1	(mental$ adj6 first aid$).ti,ab.	146
2	MHFA.ti,ab.	40
3	1 or 2	150
4	exp Mental Disorders/	1102023
5	Depression/	98929
6	exp Anxiety/	71767
7	exp Suicide/	55747
8	exp Self-Injurious Behavior/	62651
9	Drug Overdose/	9427
10	Mentally Ill Persons/	5788

(*Continued*)

11	Mental Health/	29859
12	(depression$ or depressive$).ti,ab.	322997
13	(anxiet$ or panic).ti,ab.	161797
14	(suicid$ or parasuicid$ or self-harm$ or self-injur$).ti,ab.	70603
15	(overdose$ or over dose$).ti,ab.	16355
16	(psychosis or psychoses or psychotic$).ti,ab.	59000
17	(eating disorder$ or bulimia$ or binge eating or anorexia$).ti,ab	41250
18	(mental$ adj3 (disorder$ or disease$ or ill or illness$ or problem$ or crisis or distress or issue$ or impairment$)).ti,ab	85816
19	(psychiatric adj3 (disorder$ or disease$ or ill or illness$ or problem$ or crisis or distress or issue$ or impairment$)).ti,ab	55794
20	(psychological adj3 (disorder$ or disease$ or ill or illness$ or problem$ or crisis or distress or issue$ or impairment$)).ti,ab	30043
21	or/4-20	1521889
22	First Aid/	7460
23	first aid$.ti,ab.	5249
24	22 or 23	10060
25	21 and 24	571
26	3 or 25	588
27	Gatekeeping/	617
28	(gatekeep$ adj6 (train$ or program$ or educat$)).ti,ab.	193
29	27 or 28	784
30	21 and 29	176
31	26 or 30	757
32	exp animals/ not humans/	4421271

(*Continued*)

33	31 not 32	752

Notes: N/A
File saved as: MEDLINE MHFA 2018 n39.txt

Appendix 2. CCMDCTR core MEDLINE search

A weekly search alert based on condition + RCT filter only
1. *[MeSH Headings]:*
eating disorders/ or anorexia nervosa/ or binge-eating disorder/ or bulimia nervosa/ or female athlete triad syndrome/ or pica/ or hyperphagia/ or bulimia/ or self-injurious behavior/ or self mutilation/ or suicide/ or suicidal ideation/ or suicide, attempted/ or mood disorders/ or affective disorders, psychotic/ or bipolar disorder/ or cyclothymic disorder/ or depressive disorder/ or depression, postpartum/ or depressive disorder, major/ or depressive disorder, treatment-resistant/ or dysthymic disorder/ or seasonal affective disorder/ or neurotic disorders/ or depression/ or adjustment disorders/ or exp antidepressive agents/ or anxiety disorders/ or agoraphobia/ or neurocirculatory asthenia/ or obsessive-compulsive disorder/ or obsessive hoarding/ or panic disorder/ or phobic disorders/ or stress disorders, traumatic/ or combat disorders/ or stress disorders, post-traumatic/ or stress disorders, traumatic, acute/ or anxiety/ or anxiety, castration/ or koro/ or anxiety, separation/ or panic/ or exp anti-anxiety agents/ or somatoform disorders/ or body dysmorphic disorders/ or conversion disorder/ or hypochondriasis/ or neurasthenia/ or hysteria/ or munchausen syndrome by proxy/ or munchausen syndrome/ or fatigue syndrome, chronic/ or obsessive behavior/ or compulsive behavior/ or behavior, addictive/ or impulse control disorders/ or firesetting behavior/ or gambling/ or trichotillomania/ or stress, psychological/ or burnout, professional/ or sexual dysfunctions, psychological/ or vaginismus/ or Anhedonia/ or Affective Symptoms/ or *Mental Disorders/
2. *[Title/ Author Keywords]:*
(eating disorder* or anorexia nervosa or bulimi* or binge eat* or (self adj (injur* or mutilat*)) or suicide* or suicidal or parasuicid* or mood disorder* or affective disorder* or bipolar i or bipolar ii or (bipolar and (affective or disorder*)) or mania or manic or cyclothymic* or depression or depressive or dysthymi* or neurotic or neurosis or adjustment disorder* or antidepress* or anxiety disorder* or agoraphobia or obsess* or compulsi* or panic or phobi* or ptsd or posttrauma* or post trauma* or combat or somatoform or somati# ation or medical* unexplained or body dysmorphi* or conversion disorder or hypochondria* or neurastheni* or hysteria or munchausen or chronic fatigue* or gambling or trichotillomania or vaginismus or anhedoni* or affective symptoms or mental disorder* or mental health).ti,kf.
3. *[RCT filter]:*
(controlled clinical trial.pt. or randomized controlled trial.pt. or (randomi#ed or randomi#ation).ab,ti. or randomly.ab. or (random* adj3 (administ* or allocat* or assign* or class* or control* or determine* or divide* or distribut* or expose* or fashion or number* or place* or recruit* or subsitut* or treat*)).ab. or placebo*.ab,ti. or drug therapy.fs. or trial.ab,ti. or groups.ab. or (control* adj3 (trial* or study or studies)).ab,ti. or ((singl* or doubl* or tripl* or trebl*) adj3 (blind* or mask* or dummy*)).mp. or clinical trial, phase ii/ or clinical trial, phase iii/ or clinical trial, phase iv/ or randomized controlled trial/ or pragmatic clinical trial/ or (quasi adj (experimental or random*)).ti,ab. or ((waitlist* or wait* list* or treatment as usual or TAU) adj3 (control or group)).ab.)
4. (1 and 2 and 3)
Records are screened for reports of RCTs within the scope of the Cochrane Common Mental Disorders Group. Secondary reports of RCTs are tagged to the appropriate study record.
Similar weekly search alerts are also conducted on OVID EMBASE and PsycINFO, using relevant subject headings (controlled vocabularies) and search syntax, appropriate to each resource.
A quaterly search of the Cochrane Central Register of Controlled Trials (CENTRAL) is conducted c/o the Cochrane Register of Studies Online (CRSO).

Appendix 3. Sample Summary of Findings Table

Summary of findings:

MHFA compared to no intervention for improving mental health and well-being

Patient or population: Any
Setting: Any setting
Intervention: MHFA
Comparison: no intervention

Outcomes	**Anticipated absolute effects*** (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with no intervention	**Risk with MHFA**				
Mental health and well-being of recipients (Mental health) assessed with: Validated measure follow up: range 6 months to 1 years	The mean mental health and well-being of recipients was 0	The mean mental health and well-being of recipients in the intervention group was 0 (0 to 0)	-	(studies)	-	
Mental health service usage (Service usage) assessed with: Objective service records follow up: range 6 months to 1 years	The mean mental health service usage was 0	The mean mental health service usage in the intervention group was 0 (0 to 0)	-	(studies)	-	
Adverse effects (Adverse effects) assessed with: Documented events follow up: range 6 months to 1 years	0 per 1,000	**0 per 1,000** (0 to 0)	not estimable	(studies)	-	

(*Continued*)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval

GRADE Working Group grades of evidence
High certainty: We are very confident that the true effect lies close to that of the estimate of the effect
Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect
Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

CONTRIBUTIONS OF AUTHORS

Drafting of protocol: RR, HD, GW, DM, and RC

DECLARATIONS OF INTEREST

No authors report any conflicts of interest.

SOURCES OF SUPPORT

Internal sources

- University of York, UK.

Funding to support the preparation of the protocol was provided by:

- The University of York Health and Wellbeing Research Theme.
- The University of York Wellcome Trust Institutional Strategic Support Fund Award - The Centre for Future Health.

External sources

- No sources of support supplied