

Developing population based approaches to mental illness prevention in the West Leeds population

Review of evidence
for mindfulness-
based and 'taking in
the good'
interventions

Dr Kamila Hortynska
Chartered Clinical Psychologist;
Accredited CBT Therapist;
Mindfulness, Teacher, Trainer &
Supervisor

Dr Siobhan Hugh-Jones
Associate Professor in Health
Psychology, University of Leeds

September 2015

Contents

Context for commissioning this review.....	2
Executive summary.....	4
Mindfulness and Mindfulness Based Interventions (MBIs).....	5
Review process and research quality.....	10
Prevention and early intervention in children and young people.....	13
Resilience training and mental illness prevention in non-clinical and underserved populations including men at risk of suicide and people who are unemployed.....	20
GPs and healthcare practitioners.....	29
Short courses and Self-Help: online and app based mindfulness.....	37
Summary and conclusions.....	41
Recommendations.....	42
Whole population very brief and brief interventions.....	43
Whole population extended brief interventions.....	45
Whole population high intensity interventions.....	46
Whole population interventions for people at increased risk of mental illness.....	46
Whole population interventions for children and young people.....	48
Whole population interventions for GPs and healthcare professionals.....	51
References.....	53

Appendices

Appendix 1: Outline of an MBCT course	60
Appendix 2: Taking in the good – models of mindfulness and upward spiralling... ..	62
Appendix 3: Studies examining the effectiveness MBIs with non-clinical CYP populations	64
Appendix 4: Recommended qualifications for MBI teachers.....	70

This report was commissioned by Leeds West Clinical Commissioning Group and prepared by Kamila Hortynska (Independent Mindfulness Consultant) and Siobhan Hugh-Jones (Associate Professor in Health Psychology, School of Psychology, University of Leeds, s.hugh-jones@leeds.ac.uk). For further details about the production of this report please contact Kamila Hortynska: kamilahort@hotmail.com. The contents of this report are believed to be valid at the time of publication September 2015.

We wish to thank colleagues who read drafts of the report, in particular Dr Alistair Smith, Sally Rose and David Shannon.

1.0 Context for commissioning this review

Leeds West CCG serves a diverse population of approximately 350,000 people. In its 2015/16 Clinical Commissioning Strategy^a, it identifies improving mental health and building resilience as priorities for the local population and NHS workforce. Leeds Citywide Mental Health Framework has a strategic focus on keeping people well by building resilience and promoting self-management. Leeds Health and Wellbeing Strategy also aims to improve people's mental health and wellbeing. The Mental Health Foundation^b encourages people to consider mindfulness as a practice that can build resilience and capacity to deal with life's challenges and stress.

Leeds West CCG is aware of the NICE guidance^c, some of the synthesised research on Mindfulness Based Interventions (MBIs) in clinical populations, and the early implications for policy and practice for non-clinical populations. It recognises that the evidence around MBIs for mental illness prevention and mental health improvement is growing rapidly and may be ahead of the pace of the refreshment of NICE guidance. Whilst acknowledging that the research on MBIs for many populations is still in its infancy, Leeds West CCG wish to commission evidence informed, innovative interventions to improve mental health outcomes for local, target populations and to contribute to the wider body of knowledge of what works in the fields of mental illness prevention, early intervention and reducing mental health inequalities.

In order to inform their commissioning decisions, Leeds West CCG wanted to establish how MBIs and 'positive neuroplasticity'^d ('taking in the good' interventions; Appendix

^a <http://www.leedswestccg.nhs.uk/content/uploads/2014/09/452-LW-Operational-Plan-201516-FINAL.pdf> accessed 10.5.15

^b <http://www.mentalhealth.org.uk/help-information/mental-health-a-z/M/mindfulness/>. Accessed 6.9.2015

^c <http://www.nice.org.uk/guidance/lifestyle-and-wellbeing/mental-health-and-wellbeing> accessed 1.5.15

^d Positive Neuroplasticity: the potential of brain structure and function to shift in positive directions in response to intrinsic or extrinsic influences. [Shaffer, J. (2012). Neuroplasticity and positive psychology in clinical practice: A review for combined benefits. *Psychology*, 3(12), 1110].

1) could inform and complement existing initiatives in prevention and early intervention in mental health, and in building resilience. This report was commissioned to review the evidence on the effectiveness of MBIs for improving well-being, and promoting resilience, in:

- Children and young people (CYP).
- Men at risk of suicide, people from low income areas and other underserved populations.
- GPs and other healthcare professionals.

The review focuses on non-clinical populations and is cognisant of the Health Inequality Model of Vulnerabilities (Vulnerability Framework, NHS Leeds) which suggests that: (i) who a person is (demographic factors/ population group factors); (ii) where they live (geographical and socioeconomic factors); and (iii) both how they perceive they are being treated and how others treat them, will all shape their level of vulnerability to health inequalities, and their mental well-being. The model does not suggest that any of these factors, in themselves, will automatically result in health inequalities but proposes that good interventions recognise that vulnerabilities in people, their geography and how they are treated shape their health risk, access to services, patient experience and health outcomes. MBIs have the potential to be sensitive to these vulnerabilities and to act as equalising opportunities for people to feel well; evidence to support this claim is reviewed in this report.

2.0 Executive Summary

This report reviewed the evidence for MBIs and found that, in **non-clinical populations**, MBIs appear **moderately effective** at reducing early indicators of depression, anxiety and stress, and in increasing perceived quality of life.

For community populations of **children and young people**:

- the delivery of MBIs in schools has **significant potential** for improving psychological health outcomes, at least in the short-term (3-6 months).
- CYP with higher baseline scores of (non-clinical) anxiety and depression tend to **benefit most** from MBIs.
- evidence that MBIs build resilience and / or prevent the onset of mental health difficulties in CYP is **lacking** but effectiveness studies indicating benefits to well-being are promising.

For harder-to-reach community populations including **men at risk of suicide and unemployed**:

- there is very **little research evidence available**, and there are no high-level synthesis studies for non-clinical minority populations.
- however, wider research suggests that MBIs **could yield significant benefits** to underserved populations including men at risk of suicide and the unemployed.
- preliminary evidence indicates that MBIs can be **successfully adapted** to benefit specific populations such as minority groups, inner city populations and different language speakers.

For **GPs and Healthcare professionals**:

- there are **medium effects** on stress, improvements in empathy, and a decrease in burnout, depression and anxiety.
- long-term interventions with regular refresher sessions seem to have a **more sustained effect**.

A number of recommendations are made including specific recommendations using NICE guidance on individual behaviour change spanning very brief to high intensity interventions. The importance of: facilitator training; support for people to engage and stay in mindfulness programmes; and the benefits of promoting mindfulness as a skills based rather than mental health programme are emphasised.

3.0 Mindfulness and MBIs: key features

3.1 How practising mindfulness promotes mental health

Mindfulness is 'the awareness that emerges through paying attention on purpose in the present moment and non-judgmentally to things as they are'.¹ This contrasts with mindlessness, where an individual's attention is focused on past experiences and concerns about the future rather than on the present. Some people are naturally more mindful than others, termed trait mindfulness. High trait mindfulness is associated with good mental health.² People can increase their level of mindfulness through training and practice.³ In practicing mindfulness, people try to build their attention to, awareness of, and acceptance of, whatever is happening in the present, without the need to invest in, alter or escape from experience, thoughts or emotions. Self-compassion is also promoted in MBIs. These qualities of attention, awareness, acceptance and self-compassion come to replace previous tendencies to avoid experience (e.g. to avoid pain or depressive thoughts), to attempt to control experience (e.g. through anger, or substance abuse), to be critical of oneself, or to not attend fully to experience (e.g. not being aware of how one is, not perceiving positive experience).

A core mechanism of change in mindfulness is the new way in which people relate to their thoughts and feelings, as well as to events external to them – often referred to as

a change in one's relationship to experience, characterised as decentring or re-perceiving.^{e,4,5} Mostly, this is promoted by training people to take up a particular observational standpoint in relation to their internal experience, so that they can feel aware of, but not at the mercy of, internal events. By practicing this new way of relating to thoughts, emotions and sensations, people come to experience positive psychological, somatic, behavioural and interpersonal effects including:

- a sense of renewed personal control and a capacity for self-care. Enabling individuals and communities to develop more control (or enhancing their perception of control) over their lives can act as a buffer against the effects of disadvantage, facilitating positive behaviour change.⁶
- reduced emotional reactivity to daily stressors. Reactivity to daily stressors is shown to be predictive of mental health 10 years later.⁷
- reduced rumination, as thoughts are now related to as temporary and non-insistent.⁸
- improved emotional awareness, as perception of moment-to-moment experience is enhanced.⁹
- decreased stress and anxiety, as anxious thoughts and feelings are tolerated rather than avoided, and treated as transient.¹⁰
- greater self-compassion, tolerance, openness and gratitude.¹¹
- a feeling of greater choice in how to behave, since there is an awareness of how they have previously been on automatic pilot.¹²
- greater well-being, since attention is widened to incorporate, and experience, positive thoughts, emotions and sensations.⁶

3.2 Types of mindfulness programmes

Mindfulness Based Stress Reduction (MBSR) was developed in the late 1970s by Jon Kabat-Zinn at the University of Massachusetts Medical Centre and has now been used for over thirty years in a variety of settings to help with anxiety, chronic health

^e Decentering is the process of seeing thoughts or feelings as objective events in the mind rather than personally identifying with them. It is closely related to defusion, distancing, re-perceiving and meta-cognitive awareness.

problems, stress and general well-being.¹⁰ In the 1990s, MBSR was combined with elements of Cognitive Behavioural Therapy to form [Mindfulness Based Cognitive Therapy Course \(MBCT\)](#). Initially developed to prevent depressive relapses,¹³ MBCT has now been widely applied to the management of a range of mental health problems.¹⁴ An outline of the structure and key learning points of the MBCT course can be found in Appendix 2.

Both MBSR and MBCT are normally delivered by an experienced mindfulness practitioner who has also undertaken training to teach one or both of these MBIs. Delivery is typically over 8 weeks, in 2 hour sessions and often with an additional full day, to a group of between 8-20 people. Standard programmes ask for between 45-60 minutes of personal mindfulness practice per day, 6 days a week. The programmes can also be delivered in one-to-one as an individualised intervention but there are very few published, manualised one-to-one formats. Research on such approaches is very limited although an online survey indicated that this format would be favoured by a general population given the choice.¹⁵ Both MBSR and MBCT can be adapted for use in the workplace to alleviate stress and burnout, and improve resilience.¹⁶ Adapted MBSR is more common than MBCT in research studies with CYP and non-clinical populations. Jon Kabat-Zinn and Mark Williams are currently preparing a paper on what constitutes a mindfulness programme. This should be reviewed once published in order to inform the types of programmes that might be commissioned.

3.3 Overall effectiveness of MBIs

Khouri et al.'s meta-analysis of 209 studies of the effectiveness of MBIs in clinical and non-clinical populations¹⁷ (12,145 participants) concluded that MBIs have a [moderate to large effect](#) in pre-post studies, and were superior to some active treatments (including psychoeducation, supportive therapy, relaxation, imagery, and art-therapy), but did not differ in effectiveness compared to traditional CBT or behavioural therapies. MBIs showed large and clinically significant effects in treating anxiety and depression, and the gains were maintained at follow-up. Facilitator's experience with mindfulness may have a direct or an indirect effect on the clinical outcomes of the

participants. Clinical populations are drawn from community populations, and evidence from clinical groups is neither directly applicable nor completely inapplicable to community populations.

In purely non-clinical populations, a meta-analysis of 29 studies (2668 participants) showed that MBSR is **moderately effective** for reducing depression, anxiety, distress, and stress, and increasing perceived quality of life.¹⁸ Gotink et al.,¹⁹ who reviewed 23 reviews covering 115 unique RCTs and 8,683 individuals with various conditions, and Hempel et al.²⁰ who covered 81 systematic reviews, reported that both MBCT and MBSR alleviated mental and physical symptoms in the treatments of cancer, cardiovascular disease, chronic pain, depression, anxiety disorders and, in prevention of psychopathological symptoms (e.g. stress, anxiety, depression) among healthy adults and children. Whilst there are MBIs tailored to particular groups (e.g. teachers, people affected by cancer, some ethnic minority groups), there are few MBIs (to our knowledge) for people with a disability or another 'protected characteristic' in relation to equality.

3.4 Mindfulness and 'taking in the good'

Neuroscientific studies suggests that what the mind attends to, and does repeatedly, can alter its neural structure²¹ and the strength of particular mindsets (e.g. repeated reflection about the suffering of others can make a person feel more compassionate and heighten the brain's response to distressing images).²²⁻²³ It has also been argued that the mind is more biased towards attending to, and learning from, negative experience. Learning skills to increase the activation and installation of beneficial experiences - termed '**taking in the good**' - may help to counteract this negativity bias and increase well-being. It has been proposed that learning skills to take-in-the-good can 'hardwire' a positivity bias for increased well-being.^f

^f Taken from Hanson et al. *Developing psychological resources through learning to internalise beneficial experiences: a randomised controlled trial of the 'taking in the good' course*. Unpublished manuscript.

Relatedly, when people can learn to view events or experiences as being benign, beneficial, or rewarding, positive emotions tend to follow. Experiencing positive emotion is, in turn, associated with a greater likelihood of noticing the pleasant, beautiful, or rewarding aspects of life, as well as a more positive attitude to self and others.²⁴ Termed **benefit-finding**, this behaviour is associated with reduced distress and improved mental health outcomes.²⁵

MBIs support benefit finding and 'taking in the good' through psychoeducation and meditative practice related to noticing, amplifying and experiencing positive thoughts and emotion. Specifically, Garland et al.²⁶ argue that MBIs may enhance resilience and coping through the core mechanism of **positive reappraisal**; the adaptive process through which stressful events are re-construed as benign, beneficial, and/or meaningful. Their study with 339 adults (non-clinical) undergoing an 8-week MBSR and pain management course, indicated that positive reappraisal and mindfulness appear to serially and mutually enhance one another. Similar findings have emerged with people in partial remission of depression,²⁷ whereby MBCT was associated with significant increases in positive emotion and thinking. Appendix 1 explains the upward spiralling effect proposed to be associated with MBIs. Most studies on MBIs report positive gains in well-being and most models which explain the mechanism of change point to the 'broaden and build' / upward spiralling model.²⁸

3.5 People who take mindfulness courses

A 2015 Mental Health Foundation survey of 2000 people⁹ found that, whilst 59% were unaware of mindfulness, a majority of people who had ever felt stressed (54%) said they would be very or fairly likely to practice it if they knew that doing it from just 15 minutes a day could reduce stress levels by 30%. The take up of privately provided mindfulness courses indicates its popularity for this purpose but these are only likely to be accessed by advantaged communities. Given the invitational nature of MBSR,^{29,30} studies of MBIs with non-clinical populations involve self-selecting participants.

⁹ <http://www.mentalhealth.org.uk/our-news/news-archive/2015/2015-05-11-mental-health-awareness-week-2015/>

MBIs aim to help people to develop their own understanding of their well-being and to draw upon their own resources for self-care.³¹ Attrition from MBIs tends to be low; completion ranges from 75%-97%, defined as attendance of at least 4 or 5 sessions,³² suggesting a high commitment to the intervention among participants.²³ However, there is no published meta-analysis of attendance/ attrition and it is possible that attrition will be high in some disadvantaged communities. MBIs appear safe; no adverse effects were reported in a systematic review of RCTS of MBSR and MBCT.¹⁷ Little is known about the populations, if any, for whom MBIs may be contraindicated.³³ Individuals with lower baseline distress tolerance show better reductions in stress following MBSR compared to those with a higher stress tolerance (for a 1-unit increase on the self-reported baseline distress tolerance scale reported perceived stress scores decreased by 2.5 units, $p < 0.0001$).³⁴ This finding may be important when identifying who is likely to benefit the most from MBSR and other MBIs.

4.0 Review process and research quality

4.1 Search Process

This report summarises a review of evidence relating to non-clinical groups in the following populations:

- Children and young people
- Men at risk of suicide and people from low income areas
- GPs and other healthcare professionals

Literature searching was conducted primarily through Mindfo^h, a database managed by the American Mindfulness Research Association which pulls mindfulness related papers from PubMed, Ovid, PsycINFO, Web of Science and Google Scholar. National and international published, peer-reviewed studies were reviewed for each of these

^h <https://goamra.org/resources/mindfo-database/> Accessed 15.9.2015

areas. Most work originates from the United States, but there are a good number of European and UK studies and some examples from other international countries. The review targeted meta-analyses, systematic reviews and non-systematic reviews. Where these were non-existent (i.e. for men at risk of suicide and low income populations), only high quality, mainly quantitative studies were reviewed which examined to effectiveness (e.g. randomised controlled trials (RCTs) or good pre-, post-test design). The body of very good qualitative studies which explore participant experience and self-reported mechanisms of change were not generally examined, however few qualitative review studies were included.

4.2 Research quality

Although there is increasing attention to the application of MBIs as positive interventions with non-clinical populations (e.g. to promote well-being, self-compassion and resilience), most research on MBIs examine their curative effect on poor mental health. Much research is good, and some is excellent (i.e. sufficiently large, with controls). However, many studies have significant limitations. Those limitations which span the body of research on CYP, men at risk of suicide, low income groups and healthcare professionals are summarised below and should be borne in mind when judging the evidence reported.

- **Delivery of MBIs:** Typically, neither intervention content, nor the extent to which it is adapted from existing programmes, is well documented. MBIs varied considerably in their duration and dosage. Some studies attempt to isolate the active ingredients of change in order to inform the level of possible adaption from a standardised programme and the minimum effective dose for particular outcomes. Some, but not all, studies report the training and competence of intervention facilitators. A Framework for Good Practice exists³⁵ but is not widely cited. The Framework emphasises the importance of the trainer having considerable personal experience of mindfulness practice. Often, the intervention facilitator is also involved in the published intervention evaluation.

- *Understanding people's motivation:* Only a few studies document participants' rationale for taking part in an MBI, their state of readiness or level of motivation, and/ or compliance with home practice assignments. Many studies do not report reasons for attrition which leads to poor understanding of sub-groups for whom mindfulness may be unsuitable or contraindicated. Some studies include pre-intervention screening for suitability and to promote commitment.³⁶
- *Use of self-report outcomes:* Most studies rely on participants' self-reports of psychological health (typically examining change in standardised measures from pre-post intervention), which may be prone to social desirability / bias. Use of objective measures is rare. There are some concerns over the validity of measures of mindfulness; although many studies do report a change in mindfulness scores, not all studies do. Some show no advantage over active control conditions in increasing self-reported mindfulness.³⁷
- *Sustainability:* Reliable evidence for the sustainability of outcomes beyond intervention end is lacking for all groups of interest. Inconsistencies in follow up data collection and reporting make conclusions about long-term impact difficult. Little is known about how top-up / maintenance courses function and how important they may be for sustaining outcomes or preventing relapse. Local evidence suggests that once-per-month maintenance sessions are helpful to maintaining positive effects (University of Leeds staff course).
- *Small samples sizes:* Many, but not all studies, have small samples, making it difficult to power statistical analyses. There are some important large trials.

5.0 Prevention and early intervention in children and young people

5.1 Context

The prevailing attitude to the use of MBIs with CYP is that what is good for adults will also be good for youth. MBIs with CYP are proliferating in both clinical and non-clinical settings. Yet in 2013, less than 5% of the over 2,600 scholarly publications on mindfulness pertained to CYP.^{38,39} Thus, research is trying to catch up with the ways in which MBIs are already being adapted and delivered to CYP in the field.

5.2 Search criteria

Mindfo was searched for 'mindfulness' and 'adolescent or child or young people or youth'. The search period was from 1966 to 2015. Studies were excluded where they: lacked control groups;¹ involved clinical, forensic or populations of CYP with specialist need (e.g. children with ADHD or autism); combined mindfulness with other interventions; and / or did not include a mental health outcome. Returned studies were cross checked with the most recent reviews of MBIs with CYP.⁴⁰⁻⁴³

5.3 Findings

Based on the exclusion criteria, **twenty-three studies** which examined MBIs for community samples of CYP were available for review. All bar one study was school based. Sample ages ranged from 5y - 20y although most studies involved CYP aged 8y - 14y. Most studies examined the intervention's effect on self-reported stress, depression, anxiety, emotion regulation and mindfulness. Measures of resilience, self-compassion, and well-being were also common. Parent and teacher ratings were sometimes used and objective measures, such as absence and academic attainment, were used infrequently. Outcomes were typically measured post-intervention and approximately half of the studies included a three month follow-up. Only two studies

¹ With the exception of Kuyken et al. (2013) who report a pilot feasibility study in UK secondary schools.

measured effects at six months. The strengths of the research reviewed here include: (i) inclusion of a diverse populations of CYP spanning ethnic, socio-economic and educational variables; (ii) that most MBIs in schools follow a manualised, group based, classroom environment format during school hours; and (iii) that a range of psychosocial outcomes were measured.

5.3.1 Key findings

- *Models of delivery:* MBI content is highly variable across studies and a lack of fidelity checks makes it difficult to identify active intervention ingredients. Most interventions were delivered by experts, invited into schools, and with support from school staff. MBIs typically replaced comparative curriculum content or were hosted after school. A large scale, local consultation project conducted by the University of Leeds^j indicated that a cascading model of delivery (i.e. MBI for school staff first) is preferred by local children's services, school staff and students. Tests of the best way to train teachers to deliver MBIs in schools are currently underway via the University of Oxford's Myriad Project.^k
- *Feasibility:* Evidence suggests that no greater than usual challenges are faced when delivering MBIs in schools than when delivering interventions in any complex settings. The University of Leeds consultation project showed a considerable appetite for mindfulness from secondary schools, and increasingly primary schools, with structures in place (e.g. house systems) that could flexibly accommodate an MBI.
- *Acceptability:* Intervention content and the experiential emphasis of MBIs appear to be well tolerated by CYP. Some aspects of delivery appear important to acceptance, including the involvement of appropriate teachers and instructor engagement in school activities.

^jHugh-Jones, S. & Walach, H. (2013-14) Disseminating, applying and advancing mindfulness research to promote the wellbeing of young people

http://medhealth.leeds.ac.uk/info/1318/leeds_mindfulness_research_group/340/mindfulness_in_schools_project

^k <http://www.oxfordmindfulness.org/learn/myriad/>

- *Strength of effect:* The strength of effect of MBIs in schools varies across studies, and across measures, from large positive effects (e.g. for stress⁴⁴ and for early depressive symptoms⁴⁵) to zero effects for some measures in some studies, including: well-being and anxiety;⁴⁶ emotion regulation;⁴⁷ and resilience.⁴⁸ The RCT, with 13y-19y urban youth, failed to find any significant difference in outcomes for the intervention group (eight week MBI) compared to an active control.⁴⁹ However, participants were outpatients of paediatric care so had some clinical need. Compared with the control group, the participants of the MBI reported increased calm, conflict avoidance, self-awareness and self-regulation.
- *Anxiety and depression:* Although Zoogman et al.'s⁴³ review indicates that MBIs are more effective for mental health improvements in clinical than non-clinical populations, there is now sufficient evidence to suggest that MBIs are “probably efficacious”³⁸ for reducing early anxiety and depressive symptoms in non-clinical samples of CYP (see Case 1). CYP with higher baseline scores of (non-clinical) anxiety and depression tend to benefit most from the interventions.^{50,51} There is initial evidence that these improvements are associated with enhanced dispositional mindfulness (i.e. that the intervention works as intended).

Case 1 Controlled feasibility trial of ‘Mindfulness in Schools’ Programme in UK secondary schools

Kukeyn et al. (2013)⁵² assessed the ‘Mindfulness in Schools Programme’ as a universal intervention for young people who are (i) stressed and experiencing mental health difficulties; (ii) are in the normal range of mental health; (iii) or who are flourishing. The authors argue that, as a universal intervention, it minimises stigma and inequalities in accessing support. The program fits into the school curriculum and, following training, can be taught by school teachers. The intervention was piloted across six private and six publically funded UK secondary schools with adolescents aged 12-16y (265 in the intervention vs. 256 in the control condition, which were lessons as normal). They found:

- (a) preliminary evidence that the programme ameliorates low-grade depressive symptoms both immediately post-intervention and at 3-month follow-up;
- (b) that at three month follow up, the intervention group showed increased well-being and lower stress compared to controls;
- and (c) that young people who engaged more with mindfulness practices reported better mental health outcomes.

- *Prevention/ building resilience*: There is currently little longitudinal work assessing the extent to which a MBI prevents the onset, or escalation, of mental health difficulties in CYP. That most studies see a decrease in negative affect and negative psychological symptoms, and an increase in positive affect and emotion regulation, is promising and supportive of a preventive approach (see Case 2 for recent developments in regard to preventing adolescent depression). Four of the studies reviewed here measured the effect of MBIs on resilience. For example, Coholic et al.'s⁵³ study with 8-14 year-olds used the Resiliency Scales for Children and Adolescents, validated for identifying vulnerability in the absence of a disorder. One of the subscales measures how well the child can regulate the speed and intensity of their negative emotional reactions and how quickly they return to normal functioning. The intervention appeared to improve children's scores on this measure (but the study was small and had several limitations). Huppert and Johnson⁴⁸ failed to find any effect on resilience in their study with UK 14-15 year-olds (using 40 min / week for 4 weeks) but Hennelly⁵⁴ reported that her MBI (90 min/week for 8 weeks), appeared to prevent detriments to well-being in her sample of UK 11-17 year-olds compared to those in the control condition.

Case 2 Cure and prevention?

Raes et al.'s (2015) RCT with 13-20 year-olds⁴⁵ showed that a school-based MBI secured significantly greater reductions in depression compared with the control group at the 6-month follow-up. Results appeared clinically significant and comparable with depression prevention programs for youth.⁵⁵ Specifically, a greater proportion of depressed students who were in the mindfulness condition were reliably recovered at follow-up, and a smaller proportion of non-depressed students from the control condition reliably deteriorated at follow-up. The outcomes thus extend earlier findings on the positive effects of MBIs for depressive symptoms in clinical samples to a community sample of adolescents, and suggest a combination of curative and preventive effects in relation to depression.

- *Well-being*: Six studies measured well-being outcomes, with mixed findings. Some failed to find any significant effect (e.g. Bennett & Dorjee⁴⁶ with 16-18 year-olds in an after school program; Lau & Hue's⁵⁶ study with 14-16 year-olds

in Hong Kong). However, Huppert and Johnson⁴⁸ found a significant effect on well-being in their UK sample of 14-15 year olds. The level of change in well-being was related to the extent of personal practice. These findings are similar to those of Kukyen et al.'s⁵² UK study with 12-16 year olds, and Schonert-Reichl and Lawlor's US study with 9-11 year-olds.⁵⁷

- *Importance of commitment:* There is mixed evidence about the extent to which people's willingness to practice mindfulness at home bolsters outcomes. For example, Kukyen et al.⁵² found that teenagers who practised more showed higher well-being and lower stress at three months post-intervention. However, many studies do not assess, or report, the extent of personal practice of participants. This is problematic as mindfulness practice is, in essence, the intervention.
- *At risk or vulnerable groups:* Four studies have examined MBIs with CYP who were deemed to be at risk of poor outcomes.^{56, 58-60} Findings offer promise that MBIs are acceptable to these groups, with small to medium effects on anxiety, depression and behaviour (see Case 3).

Case 3 School based MBI for at ethnically diverse at risk youth

Bluth et al. (2015)⁵⁸ examined the effect of a school based MBI for an ethnically diverse group of at-risk young people who were referred by parent or school for the intervention. Out of the 33 students, 40% were court involved, 67% had prior suspensions, 24% utilized mental health support, 87% (out of 32 students) were failing ≥ 1 class in their original high school, and 18% were parenting a child or currently pregnant. Participants were randomly assigned to a mindfulness or substance abuse control class that occurred for 50 min, once a week, over one school semester. Greater reductions in depression were seen for the mindfulness group compared to controls. Initially, students' perceived credibility of the mindfulness class was lower than that of the substance abuse class but this reversed over the semester. Students reported that that the mindfulness class helped to relieve stress and that they favoured continuing the class.

- *Ethnically diverse groups and disadvantaged communities:* Most studies do not report the demographic status of their participants. Four studies indicated that their sample was ethnically diverse and their findings are comparable with other studies (see Case 4). For example, in Liehr & Diaz's RCT,⁶¹ 18 minority

youth reported significantly reduced depressive symptoms and a trend toward a decrease in anxiety symptoms at post-intervention compared to those in a health education condition. A US based pilot study with 29, 3-5 year-olds from three low-income, inner city preschools indicated that, compared to teaching as usual, a 12 week MBI was associated with significant changes in children's ability to self-regulate, and results were maintained at 3 months follow up.⁶² The effects of MBIs with very young children raise questions about mechanisms of change; given age differences in cognitive and meta-cognitive abilities, it is unlikely that children will be accessing the same 'mindfulness toolkit' as young adults or adults. More research is needed to discern the mechanisms of change in young children.

Case 4 Low income groups of adolescents⁴⁴

In Baltimore, four classes of 9-11 year-olds from low income families were randomised to a 12-week MBI (included yoga; 45 mins, 4 days per week) or a wait-list control condition. Relative to the control conditions, the MBI was associated with significant improvements in involuntary responses to stress, rumination, intrusive thoughts, and emotional arousal. Statistical trends indicated some improvements in impulsive actions and physiologic arousal. Findings suggest that MBIs might improve stress resilience and to reduce unhelpful automatic responses to social stressors in children.

- *Long-term effects:* Six studies reviewed here reported three month follow up data, which indicated that positive effects on mental health are generally sustained. The longest follow up for CYP studies was 6 months and assessed in just two studies which reported continued positive effects for reduced depression in 13-20 year olds⁴⁵ and well-being in 11-17 year olds.⁵⁴

5.5 Conclusions: can MBIs operate as resilience building and early intervention for CYP?

High-quality evidence on MBIs mindfulness training for CYP is relatively sparse, but growing. MBIs have the potential to be adapted to school settings without compromising their effectiveness, and they appear acceptable to diverse groups of CYP. There are no published reports of treatment contraindications, although as a

reflective practice, sufficient support needs to be available should a need arise for a child or young person. Delivered as universal interventions, MBIs may be easier to access than other support services and do not appear to have a stigma attached to them. Specifically:

- MBIs appear effective in improving stress, anxiety and depressive symptoms in non-clinical samples of CYP, especially as early intervention (i.e. where the young person has a sense of need).⁴⁰
- Evidence is mixed on the ability of MBIs to improve well-being.
- Although evidence on the preventive, resilience building effect of MBIs is scarce for CYP, the delivery of MBIs in school settings has significant potential for improving psychological health outcomes for CYP at least in the short-term (3-6 months). Knowing how to optimise the potential of MBI as a universal, early intervention programme is still being studied (i.e. how to get the right MBI, to the right people, at the right time, in the right way).
- It is not yet known:
 - whether MBIs can outperform other well-being interventions in school settings.
 - what constitutes adequate trainer preparation (although this is being assessed in Myriad program⁹) or how much personal engagement (practice) by CYP is needed to secure positive outcomes.⁴¹
 - how universal proportionalism (i.e. greater dosage to those who need it) might benefit the most vulnerable in this population (e.g. to include nurture groups, day retreats, one-to-one support).

Current project: Nottinghamshire County

Ann Berry is a Public Health and Commissioning Manager for the Integrated Commissioning Hub for Children's Services in Nottinghamshire on behalf of the six CCG's and Public Health in Nottinghamshire. Ann is investigating the use of mindfulness intervention activity across the County from a children and families perspective. There does not appear to be any systematic approach to the use of mindfulness interventions in the County - mostly, schools are purchasing input as required using Pupil Premium funding. Ann's report will be available in October 2015 and will include research, best practice, and a mapping of activity. Ann is also aware of an adult public health project on healthier workplaces and employment based interventions. Ann can be contacted at: Public Health Nottinghamshire/ Nottinghamshire County Council / 01623 433011 / ann.berry@nottsc.gov.uk

6.0 Resilience training and mental illness prevention in non-clinical and underserved populations including men at risk of suicide and people who are unemployed

6.1 Search Criteria

Terms used in searches included 'mindfulness' and 'men, deprivation, vulnerable/hard to reach/ disadvantaged/ minority populations, inner city, social exclusion, health equity, joblessness, unemployment, low income, relapse prevention, suicide prevention, health inequalities, ethnic minority, resilience training, non-clinical, healthy individuals'. Studies were excluded if they involved clinical populations; and/or did not include vulnerable populations, unemployed populations or did not focus on suicide prevention or resilience training.

6.2 Findings

The evidence in this area is very limited. There are no high-level synthesis studies except for those conducted with clinical populations, students or high functioning individuals within the workplace. Only a handful of directly relevant studies were identified and these were generally of low quality with several limitations.

6.2.1 Mental illness prevention/ resilience training: Evidence strongly indicates that MBCT is equally effective as antidepressant treatment in prevention of depressive relapse⁶³ and is specifically recommended for people at greater risk of depressive relapse.^{64, 65} However, this evidence comes from clinical not community populations. Research on MBIs as preventive programs are limited to settings such as companies, universities and the military.⁶⁶ We have found no published studies utilising pure MBIs to prevent mental health difficulties in adult community populations, although one study, described as purpose-developed mindfulness-based mental health promotion program, is currently being evaluated (see box below).⁶⁷ However, it is worth clarifying that this program seems much more heterogeneous than other MBIs and therefore

the findings may not be attributable solely to mindfulness elements. It targeted a general non-patient adult population in Germany and, although the sample was self-selecting, participants' self-reported symptoms of anxiety and depression, and levels of life dissatisfaction, were significantly higher than those seen in a general German population. Preliminary data indicate the programme is well accepted and well attended by participants from a range of socio-economic backgrounds. Similarly to MBIs, this program has been utilised mainly by women (83% of sample), raising some concerns about the attractiveness of such programs to men. Authors, however, refer to the Canadian Health Survey indicating that men are more likely to avoid seeking help especially for minor mental health concerns.⁶⁸

Current European Project: Life balance Program in Germany 2013- 2014⁶⁷

A fully manualised mindfulness-based mental health promotion program, which employs strategies borrowed from well-established psychotherapeutic approaches (Dialectical Behaviour Therapy, Acceptance and Commitment Therapy and Compassion Focused Therapy) was offered free of charge in Germany to 4898 adults. It was delivered in local health-centres, in groups of 12-15 and lead by 200 laypeople with no mental health background, but were employees of a large insurance company who sponsored development and implementation of this program. Program facilitators received three days training and had later access to an online supervision tool and a group supervision day per each course delivered. The program consists of 6 weekly session 1.5h long and 7th follow up session delivered 4 to 6 weeks later. Components include mindfulness exercises, psychoeducation, self-compassion exercises, evaluation of one's own values, social network analysis and communication training, problem-solving, defusion, acceptance training, reflection on self-efficacy and behaviour analysis. Participation in the research evaluation was voluntary. Follow up data after 3 and 12 months is currently being evaluated. Contact: Martin Bohus from Central Institute of Mental Health, Mannheim, Heidelberg University, Germany, martin.bohus@zi-mannheim.de

6.2.2 Health care utilisation: Elevated rates of mood and anxiety disorders among high utilizers of health care, have been suggested as one driver of increased service use.⁶⁹ A few studies suggest that healthcare utilisation is reduced for those who complete MBIs, e.g.:

- Roth and Stanley⁷⁰⁻⁷¹ found a significant decrease in number of chronic care visits and medical care visits to primary care providers over a year in their study

with 47 patients with high comorbidity of medical and mental health diagnoses who completed a modified MBSR in an inner city setting.

- Kurdyak et al.⁷² in their study of 10,633 patients who completed an MBCT course between 2003 and 2010 in Ontario, found a reduction in an aggregate measure of non-mental health care utilization (comprising emergency department, non-mental health primary care, and non-psychiatrist specialist visits) when compared with 13,274 matched control participants receiving non-MBCT group therapy. The results suggest that for every two MBCT patients treated, there is a reduction of one non-mental health visit.

6.2.3 Non-clinical populations/ healthy individuals: A Campbell systematic review of 31 RCTs with an overall total of 1,942 participants found moderate to high quality evidence and moderately high effects of MBSR in improving health, quality of life and social functioning in adults.⁷³ The results of the most recent meta-analysis which examined 29 studies using MBSR, with a total of 2668 healthy participants, suggest that this programme can be recommended to people to reduce stress, distress, anxiety and depression and to increase quality of life regardless whether they meet diagnostic criteria for a mental health disorder.¹⁸ Even though the studies included in this meta-analysis did not target clinical populations, moderate effect sizes were found on multiple clinical measures and results were comparable to previous studies in such populations.^{6,74} However the majority of studies conducted have several limitations to their generalisability, namely: underrepresentation of males and ethnic/ racial minorities, most participants being relatively young (e.g. in Kohury's study 82% of sample was female with mean age 36.8) and being either students or healthcare staff, limiting generalisation of results to participants with lower or no education. Most studies lack long-term follow-up data making conclusions about stability of the effects difficult.

6.2.4 Men, including men at risk of suicide: No synthesis studies were identified in this area. Men are significantly under-represented in all mindfulness research samples except in prison service/ forensic settings, veterans, substance misuse populations or

unless a specific health problem has been targeted (e.g. prostate cancer⁷⁵). Only few relevant studies were identified:

- A systematic review of mindfulness and Buddhist-derived interventions in correctional settings found improvements across: negative emotion, substance use, anger and hostility, relaxation capacity, self-esteem and optimism. However, most studies were conducted in US and had small sample sizes.⁷⁶
- A study into effectiveness of MBCT for comorbid depression and drug dependency among 33 males in Turkey found that a MBI was associated with a significant reduction in depressive symptoms of dually diagnosed individuals.⁷⁷
- A study into predictors of suicide probability among 324 males with substance abuse or dependence found that trait mindfulness was a protective factor that decreased both risk of suicide and psychiatric symptoms in general.⁷⁸ The authors suggest that mindfulness can act as a foundation for healthy self-regulation that can foster resilience against maladaptive types of self-regulation such as suicide attempt. The study relied on self-report in the assessment of variables, was conducted within an Iranian prison and most participants were opium users.
- Williams et al.⁷⁹ argue that, since rumination is a common feature of depression, and the population attributable ratio for depression in suicidal behaviour is 80%, reducing the relapse rates in patients with a history of three or more episodes may indirectly benefit individuals with recurrent suicidal behaviour. The results of the recent RCT of the impact of MBCT on patients with a history of suicidal depression indicate that MBIs can help to weaken the association between depressive symptoms and suicidal thinking, thus reducing the important vulnerability factor.⁸⁰ However, the sample in that study was 75% female.

An inability to tolerate distressing experiences is seen as a trans-diagnostic factor underlying diverse psychopathologies.⁸¹ Level of distress tolerance has been found as a moderator of treatment outcomes after MBSR.³¹ Mindfulness meditation improves tolerance of dysphoric emotions by enabling one to cultivate decentring skills;

however, some men are thought to have particular difficulties regulating their emotions partly due to masculinity norms and an expectation of emotional toughness,⁸² which in turn can contribute to the development of maladaptive affective styles known as 'restrictive emotionality'.⁸³ Lomas et al.'s (2015)⁸⁴ qualitative study investigated whether mindfulness can help men specifically to develop decentring skills and thus enable them to better tolerate feelings of distress rather than seeking to blunt, avoid or suppress them through maladaptive responses. Participants (currently practicing meditation) completed an Emotional Stroop task¹ at two time points a year apart and showed reduced emotional reactivity to negative stimuli suggesting increased distress tolerance. The results, together with qualitative data from 29 interviewed participants, suggest that mindfulness can lead to enhanced decentring skills and better tolerance of discomfort and distress. The authors propose that young men could take up meditation practices to equip themselves with valuable cognitive and emotional skills.

6.2.5 Harder to reach, vulnerable, minority populations with low socioeconomic status:

A meta-analysis of both MBIs and acceptance based treatments with clients from non-dominant or marginalised backgrounds (n=2198)⁸⁵ found small to large effect sizes varying by study design. However, out of 32 studies, only 6 utilised MBIs and the authors note that research in this area is in its infancy. Results from a national survey study on sociodemographic barriers to engagement in mindfulness practices by US adults indicate that men are half as likely as women to engage in any of the mindfulness-based practices, along with people with low (less than high school)

¹ The Emotional Stroop task involves being presented with three conditions: positive words (e.g. "friendly"), negative words (e.g. "death") and neutral words (e.g. "pencil"). Each condition features 12 different words, repeated six times, generating a list of 72 words, arranged on one card in six columns. Each word is printed in black, brown, green, red, blue or orange ink. In the testing session, participants are required to state aloud the ink colour of the words as fast as possible and they are timed on how long they take to complete each card. The Emotional Stroop is used in clinical assessment as an adjunctive diagnostic tool to indicate psychopathology, as patients are often slower to name the colour of a word associated with their condition. Theorists explain such findings in terms of cognitive biases, where certain stimuli have greater emotional salience for some people, who then direct their attention to the emotional meaning of the words, rather than to the task in hand. People with a particular disorder perform more slowly on tasks featuring words relating to that condition, because they get drawn into semantic processing of the stimuli, rather than focusing on the set task. Improved performance on a Stroop task might be taken as indicative of reduced psychopathology in a clinical patient. Transposed to a non-clinical sample, as in the relevant study, reduced emotional reactivity to negative stimuli might be interpreted as reflecting increased tolerance of such stimuli and therefore discomfort and distress in general.

education levels.⁸⁶ In general, there is a very limited number of studies targeting deprived populations and/or conducted in community settings and the majority comes from the US or Canada and includes small, predominantly female samples, e.g.:

- Szanton et al.'s study with African American older women in a low income housing accommodation found that participants used mindfulness skills to cope with life stressors, depression and anger, and that the MBI increased their sense of community in a socially-isolating building.⁸⁷ A study with older adults (but which included only one male participant) in a similar setting found decreases in blood pressure among MBI participants compared to blood pressures increases in matched controls.⁸⁸
- Racial and ethnic minority women with substance use disorders in a residential treatment centre for criminal offenders were given a choice between incarceration and an MBI.⁸⁹ The MBI was more acceptable and resulted in greater reductions in addiction severity index and a higher number of no drug use days at 15-week follow-up among ethnic minority women.
- A Canadian study of an adapted MBSR training with severely economically disadvantaged and marginalised population - mostly homeless and in receipt of various welfare benefits - found an overall mean increase in self-compassion and satisfaction with life after completing the programme.⁹⁰ Results also included better communication with family and those with whom they had negative relationships including with service providers (better ability to express their needs within services) and self-perceived personal benefits (reduction in depression, higher level of acceptance, increased awareness of thought patterns and their impact, improved mind-body connection or renewed links to spirituality).
- Delivery of a modified MBSR program to similar inner-city populations found significant improvements in five out of eight health status measures post intervention, but no improvement on sleep quality and family harmony measures. Decreases in medical and psychological symptoms, improvements in self-esteem along with dramatic changes in attitudes, beliefs, habits, and behaviours were found among inner city bilingual population.⁹¹

- Blum (2015)⁹² conducted a very pilot study offering MBIs to people with low income (less than \$15,000 a year). Over 50% of the sample were people of colour. The MBI (Mindfulness Allies Project, offering five weekly, 1h long community-based mindfulness classes, with free childcare and free dinners for participants) was experienced by the majority as helpful, enjoyable and recommendable to others. Most participants also reported that their life has improved in some way since they started mindfulness practice.

Current UK Project: Wales

Impact of a MBI on well-being in disadvantaged areas

Bangor University, Centre for Mindfulness Research and Practice has a project currently under way with teachers, pupils and parents in disadvantaged areas. It involves training school teachers in mindfulness, who will then deliver a MBI to their pupils and finally training will be available to interested parents. The project has just started and will be completed by the end of August 2016. The contact is Dusana Dorjee at d.dorjee@bangor.co.uk

Current UK Practice: Birmingham

Mindfulness with different Ethnic and Faith Groups⁹³

MBIs may be suitable for different faith and ethnic groups in the UK. Although not yet evaluated, culturally adapted MBIs are already offered by Dr Khan from Birmingham Healthy Minds, which is an NHS primary care psychological therapies service that works closely with Birmingham GPs. A series of free mindfulness workshops that target mental health and specific community groups have been offered, e.g. to South Asian Muslim women (incorporating extracts from Qur'an) and Chinese clients. These mindfulness seminars are currently being developed for Somalian Refugees. The ethnicity profile of patients with IBS and IBD participating in MBCT courses offered at the Good Hope Hospital by Dr Singh, a consultant gastroenterologist, showed that more African-Caribbean and Asian patients participated than is the norm for the Trust's clinical population with IBS. The person who would be able to provide more information on those interventions is Richard Hawkins at richard.hawkins47@gmail.com

6.2.6 Unemployed people: Although the use of MBSR is advocated in career counselling for people who face job uncertainty or who are afraid of being fired,⁹⁴ one published study exists into the effects of MBSR among the unemployed, conducted with a Dutch population.⁹⁵ Participants in the MBI showed a reduction in stress symptoms, an increase in focus on everyday activities (mindfulness), and greater confidence in their

ability to find a new job (self-efficacy), but they did not have a stronger motivation to look for a new job (although their motivation may already have been good). Half of the sample had high education levels. There were no follow-up data.

UK Practice Example: Manchester 2010-2011 Mindfulness and Work preparedness⁹⁶

The Department of Health, in partnership with NHS North West, carried out a 9-month pilot study to help participants from the recovery (former drug and alcohol users), BME asylum seekers and carer communities to become “work prepared”, through the use of mindfulness training. Key workers from NHS and third sector were co-attending the classes and providing additional mentoring support to service user participants, mainly by motivating them to attend through texting and communicating between sessions. The MBI was delivered in 4 fortnightly day-long sessions to fit with the broader idea of work preparedness; a day-long ‘Next Steps to Work’ session was held soon after the end of the course. Refreshments, lunches and bus fares provided helped with retention. 21 out of 28 participants completed the course and subsequently 50% (of the 18 jobless participants) secured employment. Post-intervention, there were also improvements in mindfulness and well-being (Mental Health Recovery Star), but limited overall improvements on well-being. The contact is Ruth Passman, Senior Health Policy Adviser from the Department of Health ruth.passman@dh.gsi.gov.uk

6.3 Conclusions: can MBIs operate as resilience building and early intervention for non-clinical and underserved populations and especially for men at risk of suicide and people who are unemployed?

The delivery of MBIs as a resilience building and early intervention in the general public and with priority populations has potential to bring benefits to individuals, communities and health services; in sum:

- The evidence is very strong in the area of relapse prevention for depression, but the evidence in generic mental illness prevention is limited. Data from one published project on a mindfulness-based resilience building program among the general adult population is currently being evaluated.
- Evidence from non-clinical populations is of moderate to high quality and reports moderately good effects on multiple pre-post measures.
- The evidence for the unemployed and men as participants is sparse and, where it does exist, it is limited. Research on the effectiveness on MBIs with deprived/harder to reach/ minority populations is in its infancy. A handful of existing

studies are based on very small and predominantly female samples. However, qualitative data from those three areas indicates that MBIs are acceptable, well received and offer benefits in: emotional expression and regulation; social interactions; interpersonal functioning; and increases in participation in social activities and sense of community.

- Although there is nothing to indicate that the benefits from MBIs are not equally relevant for both genders and with participants from a variety of socioeconomic backgrounds, robust evidence in these areas is lacking. There is a need for research with underrepresented populations. Other areas of weakness for the majority of all studies include over-representation of relatively well-educated female participants and very little or no follow up data, making it hard to ascertain the stability of effects.
- However, indirect evidence from the health utilisation studies, points to the added benefit of reduced chronic- and non-mental health care visits among graduates of MBIs compared to controls receiving non-MBI group therapy.
- There are no published reports on adverse effects of MBIs with 3 identified priority populations and evidence suggests that MBIs can be successfully adapted for participants from a variety of income, education, ethnic origin and faith groups.

7.0 GPs and Healthcare Practitioners

7.1 Context

A recent survey of 817 hospital doctors by the Hospital Consultants and Specialist Association showed that more than 80% may retire earlier because of work-related stresses, causing them burnout, low morale, sleepless nights, marital breakdown and illnesses such as ulcers, anxiety and even strokes.⁹⁷ Stress and burnout are considered to be endemic in healthcare professionals with over 40% of nurses reporting general occupational burnout and 28% of physicians endorsing two out of three aspects of burnout.⁹⁸⁻⁹⁹ Resilience, defined as a competence to cope and adapt in the face of adversity and to bounce back when stressors become overwhelming, is considered a significant protective factor against instances of compassion fatigue, burnout and mental and physical illness.¹⁰⁰ In healthcare professionals, burnout is associated with various physical health problems including: fatigue, heart disease, depression, obesity, hypertension, infection, carcinogenesis, diabetes and premature aging.¹⁰¹⁻¹⁰² Physician burnout is also widely considered to be a patient safety issue and is taken increasingly seriously in North America. Prolonged stress has been shown to significantly reduce clinicians' attention and concentration, detract from decision making skills and diminish abilities to communicate efficiently and empathically, and to establish meaningful relationships with patients.^{103,104}

7.2 Search criteria

Search terms included 'mindfulness' and 'healthcare professionals/ staff/ workers, clinicians, physicians, GPs, nurses, staff well-being, staff mental health, resilience, burnout, stress, occupational/ work-stress, healthy participants, working adults'. Studies were excluded where mindfulness was not the main intervention used or study did not include a mental health or related outcome.

7.3 Findings

MBIs have been successfully used to promote mental and emotional resilience among health professionals in a variety of intervention forms.

7.3.1 Healthcare workers and settings: Empirical review studies evaluating the impact of MBIs on well-being outcomes among clinicians and trainees¹⁰⁵ and healthcare providers¹⁰⁶ concluded that participation in a MBI had mental and physical benefits, and improved psychosocial functioning in this population. Exposure to MBIs among a variety of medical staff (including physicians, nurses, nurse leaders and other healthcare staff) has been found to:

- decrease perceived job-stress, burnout and distress levels, negative mood states and symptoms (such as exhaustion, anger, depression, anxiety and tension).
- increase positive aspects of psychological functioning (such as life satisfaction, well-being, empathy, self-acceptance, self-compassion) and capacity for empathy and appreciation of others.
- improve participants' interactions with others and their efficacy in creating a caring environment, and being present in relationships without becoming reactive or defensive.

UK Practice Example 2011: MBCT Improves Staff Well-being¹⁰⁷

Lancashire Care NHS Foundation Trust commissioned a pilot MBCT course for 20 clinical staff in Preston who were concerned about their stress and the effect it might have on their performance and ability to work. Participants self-referred after seeing a flier in Trust bulletin. Levels of stress, anxiety and depression were assessed; post-intervention, there was a reduction in all three domains. Qualitative data also pointed to increases in well-being and self-perceived increases in efficacy and effectiveness at work. Several participants noted that being mindful they can get more done in a given time and work more effectively. More information on this project is available from Dr Alistair Smith who has now retired from his job at the Lancashire Care NHS Foundation Trust: alistair@cali.co.uk

The Trust then went on to provide MBCT to over 200 more staff, and sickness absence data were obtained for 166 of them.¹⁰⁸ The number of working days lost due to sickness absence in the year preceding the course (n=4715) was compared to days in the year following the Mindfulness course (n=2920), a reduction of about 40% and a considerable cost saving to the Trust. More information on this can be obtained from Lisa Graham, CBT Therapist still working for the Trust: lisa.graham@lancashirecare.nhs.uk

7.3.2 Health professionals as a population within general meta-analyses of MBI effectiveness: The most recent meta-analysis of the effectiveness of MBIs with healthy individuals found that among all reviewed target populations, healthcare professionals benefited the most.¹⁸ This is consistent with the finding of a previous meta-analysis of studies targeting distress among working adults, which found medium to large effects sizes in the reduction of psychological distress.¹⁰⁹

A Cochrane review of the preventive staff-support interventions addressing health workers' stress and burnout concluded that limited evidence is available for the effectiveness of stress management training beyond the interventions period. However, only one mindfulness study (low-dose) was included in the review. Indications are that long-term interventions with refresher or booster sessions may have a more sustained positive effect.¹¹⁰

- A systematic review and meta-analysis of MBIs' effectiveness in reducing stress among health care professionals¹¹¹ based on eight relevant studies (n=150) found that MBIs have the potential to ameliorate their stress (with a medium size effects; one study failed to find an effect). Two studies reported significant increases in self-compassion¹¹²⁻³ and one¹¹³ reported that self-compassion significantly predicted improvements in perceived stress. Significant improvements were also found in levels of mindfulness,¹¹⁴⁻⁵ physician empathy, serenity, burnout, and sense of self.¹¹² Fortney et al.¹¹⁶ found that an abbreviated MBI led to improvements in emotional exhaustion, depersonalization, personal accomplishment, depression and anxiety. Furthermore, improvements were reported in general health and sense of coherence,¹¹⁷ psychological distress, rumination and negative affect,¹¹⁴ and satisfaction with life.¹¹³ Reasons for attrition were reported in three studies and included work pressures,¹¹⁵ shift patterns,¹¹⁸ and a combination of health, family and work pressures.¹¹³
- A narrative systematic review of the effects of workplace-delivered MBSR on employees' burnout, examined 9 controlled and 10 uncontrolled observational studies (out of which 12 were conducted in a healthcare setting), determined

that most controlled studies were of medium quality and most of uncontrolled studies were of good quality (n=933).¹¹⁹ The reviewed studies' outcomes indicated that MBSR can have significant positive effects on burnout, particularly the emotional exhaustion dimension of Maslach Burnout Inventory.¹²⁰ The most successful MBSR studies in reducing burnout mainly adhered to the standard curriculum and structure. They stated that it was reasonable to conclude that MBSR is effective as both a secondary preventive intervention to develop coping capacity and resilience and as a tertiary treatment intervention for individuals already affected by burnout.

- A qualitative review of 14 relevant studies (n=254) of healthcare workers' experiences of mindfulness training and its perceived impact on their well-being, clinical skills and relationships with patients revealed two main themes¹²¹: experiencing and overcoming challenges to practice such as shifting from caring for others to self-care, and developing new relationship to experience within personal and interpersonal domains. Perceived benefits ranged from increased personal well-being and self-compassion to enhanced presence when relating to others, leading to enhanced compassion and a sense of shared humanity.

7.3.4 Studies specifically with physicians and other healthcare professionals: It has been proposed that, for the optimal patient-physician communication to occur, physicians must be mindful of themselves, the patient and the context¹²² and that mindfulness can be defined as a logical extension of the concept of reflective practice, consistent with being present with everyday experiences and open to all thoughts, actions and sensations.¹²³ In an investigation of internists, the capacity for "being present" with their patients correlated more strongly with finding meaning in their work than diagnostic and therapeutic triumphs.¹²⁴ In the last few years there has been more interest in application of MBIs among physician and primary care staff, especially in America, Canada and Australia, e.g.:

- a RCT of 74 internal medicine physicians, testing one hour of facilitated discussion groups incorporating elements of mindfulness, fortnightly for nine months, found increases in empowerment and engagement at work and

decreases in rates of depersonalisation, emotional exhaustion and overall burnout. The results were maintained at 12 month follow up, but no statistically significant differences were found in stress, depression, overall quality of life or job satisfaction.¹²⁵

- Goodman and Schorling's¹²⁶ mindfulness for healthcare providers course (n=93, delivered 11 times over 6 years with ongoing monthly follow-up sessions) was associated with significant improvements in burnout and well-being. Participants volunteered and paid for the course. Physicians, who constituted, 55% of participants, improved significantly more on the scale of emotional exhaustion than other professionals. However, no control group or follow up data were included.
- Moll et al.¹²⁷ investigated the impact of 9-week MBSR course on 125 health care practitioners and found that mindfulness has value not only in building resilience and reducing burnout, but also as a strategy to enhance communication and interpersonal relationships. Qualitative findings from focus groups and a survey suggest additional benefits in: reduced emotional reactivity, increased ability to listen to others, more tolerance, compassion and empathy, better skills in managing conflicts and emotional control (ability to step back and think before reacting). The sample was mostly female nurses.
- Beach et al.'s¹²⁸ observational study with 45 clinicians (34 physicians, 8 nurses, 3 physician assistants) providing consultations to 437 patients with HIV found that doctors who self-rated as more mindful (on the Mindful Attention and Awareness Scale) tended to have more satisfied patients. Analysis of audio-recordings and patients' responses, indicated that patients were more satisfied and open with more mindful clinicians. More mindful clinicians tended to be more upbeat during patient interactions, more focused on the conversation, and more likely to make attempts to strengthen the relationship or ask about patient feelings. Less mindful clinicians more frequently missed opportunities to be empathic and in most extreme cases failed to pay attention at all. The authors hypothesise that mindful clinicians may be more able to maintain greater attention to their own as well as their patients' experiences and

therefore they may be more able to appreciate the impact of illness on patient's life or their emotions, which can be particularly important when caring for those from underserved and marginalised populations.

- Fortney et al.¹¹⁶ found that 30 primary care doctors who participated in brief mindfulness training (non-residential weekend workshop with two 2h long evening sessions, 10 days and 2-3 weeks after) experienced significantly higher levels of job satisfaction, quality of life and reduction in burnout, anxiety, stress and depression but no significant changes in compassion or resilience scores. These were maintained at nine months post intervention. Participants had access to a website that assisted them in bringing mindfulness practice into an examination room (e.g. provided instructions to pause, be fully present with the patient and only then proceed with recommendations, questions or advice (<http://www.fammed.wisc.edu/mindfulness>)). Limitations of the study included: lack of a control group, a small self-selected sample consisting mostly of women, and half of participants having some past meditation experience.
- Fouereur et al.¹¹⁷ invited 20 midwives and 20 nurses to participate in a one-day workshop and then to meditate 20 minutes daily for 8 weeks. Results indicated statistically significant differences in positive directions for general health, stress levels and orientation to life. Home practice logs and data from the interviews indicated that integrating meditation practice into daily life proved to be a significant challenge; participants reported meditating only on less than half days available in the study. During interviews participants made suggestions for the workplace to support daily practice by providing meditation spaces. They argued these would serve as reminders to act mindfully in every moment and to take time to meditate.

Practice Example: Rochester, New York, 2008

Mindful Communication Program for Primary Care Physicians¹²⁹

Mindful communication training was delivered over a 12 month period. The intervention incorporated elements of narrative and appreciative inquiries in order to reinforce positive experiences, which has similarities with the concept of 'taking in the good'. In addition to discussing challenges, participants explored ways in which they successfully worked through difficult clinical situations to identify personal qualities that promoted their successes. The 8 week course, plus ten 2.5h monthly maintenance classes (n=70), was associated with significantly improved indicators of patient-centred care (e.g. empathy, psychosocial orientation) while also enhancing physicians' well-being (e.g. decreased burnout improved mood). The changes were mediated by changes in mindfulness. Although several short-term improvements did not persist, five areas of improvement, which were not apparent after eight weeks, developed over a longer term (burnout: depersonalisation; mood states: depression and fatigue; personality: conscientiousness and emotional stability). The course was free, offered CPD credits and financial incentive for completing five surveys. Qualitative evaluation of the impact of the program¹³⁰ indicated three major themes: (1) sharing personal experiences from medical practice with colleagues reduced professional isolation; (2) mindfulness skills improved the participants' ability to be attentive, listen deeply to patients' concerns and respond to patients more effectively; and (3) developing greater self-awareness was positive and transformative, yet participants struggled to give themselves permission to attend to their personal growth. Skills cultivated in the program appeared to lower participants' reactivity to stressful events and help them adopt greater resilience in the face of adversity.

7.4 Conclusions: can MBIs operate as resilience building and early intervention for GPs and Healthcare Practitioners.

It is reasonable to conclude that with delivery of MBIs as a way of supporting staff's mental health and emotional resilience has a significant potential for improving psychosocial outcomes for this population. To summarise:

- Evidence for MBIs among working adults consistently indicates medium to large effects sizes in the reduction of psychological distress.
- Burnout focused studies indicate that research in this area is of medium to good quality and that MBIs show significant positive effects especially on the exhaustion dimension of burnout. Although abbreviated versions exist, the most successful studies in reducing burnout were those which adhered to standard MBSR curriculum and structure.

- Studies with healthcare professionals indicate medium effect sizes in reducing stress. Other areas where improvements were reported include: self-compassion, levels of mindfulness, empathy, serenity, burnout, emotional exhaustion, depersonalization, personal accomplishment, depression and anxiety, general health, rumination, negative affect and satisfaction with life.
- The most common reasons for attrition included work pressures, shift patterns and a combination of health, family and work pressures. Several studies called for, or relied on, institutional support in the form of practice time available in work hours or designated meditation areas.
- Qualitative reviews additionally point toward increases in personal well-being and self-compassion, and enhanced presence when relating to others and healthy shifts from only caring for others to also include self-care.
- Interventions were found to be enjoyable but ongoing meditation practice difficult.
- Long-term interventions with refresher or booster sessions may have a more sustained positive effect.
- There are no reports of adverse effects on participants.
- Studies among GPs have more equal gender representation, but more variety in the delivery formats. Interventions with physicians may have a delayed effect and participants may have difficulties in responding to their own needs.
- As with many behavioural interventions, self-selection may be necessary for effectiveness among all healthcare professionals.

Critical reviews have emphasised the need for large-scale controlled studies using active control groups and long-term follow ups. Areas of weakness are that:

- Studies conceptualise mindfulness in diverse ways.
- The majority of studies are in non-UK samples or settings, have relatively small sample sizes and lack an active control.
- Women are over-represented in studies, but this may reflect gender divisions in the profession.

- There are a limited number of studies investigating the effectiveness of lower-dose MBIs and there is a lack of personal practice data, making conclusions on dose-effect difficult.

8.0 Short courses and Self-Help: online and app based mindfulness

8.1 Short courses/ lower dose courses

A review of 30 studies utilising courses of varying lengths (from 4 to 10 weeks) found no significant correlation between effectiveness and the number of in-class hours for both clinical and non-clinical samples.¹³¹ However, analysis of 29 studies¹⁸ with non-clinical populations found that standard MBSR programmes showed higher effectiveness than modified or shortened versions. Thus, the evidence is most robust for full eight week MBSR / MBCT programmes. Nonetheless, some positive effects of shortened versions have been reported, for example:

- a significant decrease in depression, anxiety and stress scores was reported for an adult community sample following three sessions of a MBI. Changes appeared related to changes in mindfulness for most, but not all, participants. Scores on the Positive and Life Satisfaction Scale changed significantly.¹³²
- a four-session MBI and a somatic relaxation intervention equally reduced distress and improved positive mood in a community sample of students. Mindfulness (compared to relaxation) appeared specific in its ability to reduce distractive and ruminative thoughts and behaviours.¹³³
- a five week MBI was associated with reduced anxiety in young adults¹³⁴ and well-being in adult population with a range of chronic psychological issues.¹³⁵
- Pidgeon et al.'s¹³⁶ RCT evaluated the effectiveness of enhancing resilience in human service professionals in a community organisation in Australia using a shortened MBI (2.5 days retreat followed by a booster session at one and four months, n=44 randomly assigned). Although immediately following the

intervention no significant group differences were found, significant improvements were observed four months post-intervention for resilience, mindfulness and self-compassion. This suggests that participants require time to adjust to a new meditative practice before the benefits can be observed. The authors proposed that self-evaluations that are more caring and non-judgemental as promoted during MBIs are more likely to promote resilience when negative events occur.

Example from UK Practice: Living Mindfully Course, Durham¹³⁵

149 adults with a range of chronic psychological issues were referred by a GP to the 5-week Living Mindfully MBSR training: 70% of the sample reported depression, 77% anxiety, 50% had diagnosis of both, 6% had one of the following: chronic pain, cancer, PTSD, personality disorder. The results suggest that a shortened MBSR can have a positive impact on measures of well-being in a manner that was not related to patient characteristics immediately after training and up to 4 years after training. However, follow up data were available only from 34 participants. Continued practice in mindfulness meditation showed an insignificant relationship with well-being scores at follow up. Qualitative data indicated that this shortened version of the program may be an effective way of developing emotion regulation and psychological well-being.

- The findings of a meta-analysis of the effectiveness of MBIs for reducing psychological distress among working adults¹⁰⁹ have shown robust medium to large effects which were largely maintained at follow up (median follow up =5 weeks). Results also suggested that briefer MBIs developed for organisational settings were equally effective in reducing psychological distress as standard eight week versions originally developed for clinical settings.
- The “Mindfulness in motion” program¹³⁷ (n=34) to increase resilience and work engagement in chronically high stress work environments (e.g. intensive care unit), and a previous version of the program (low-dose MBSR for stress in hospital personnel¹³⁸ (n=32)) were both delivered on-site during work hours with full institutional support. Courses consisted of six to eight 1h long weekly classes with expectation of 20 minutes of daily practice: practice time was provided during work hours. Significant improvements in the following areas were found: work satisfaction, work engagement and resilience, perceived

stress levels, physiological stress markers and sleep quality. Limitations of the study included: small sample, pragmatic observational studies with no control groups.

Thus, a brief MBI may be beneficial for individuals in the community who may not be suffering serious psychological distress but who are aiming for greater well-being and life satisfaction. Shorter programmes may also be worthwhile for those populations for whom time commitment may be a barrier to their ability or willingness to participate. However, the standard 8 week format has accrued the most empirical support for its effectiveness.

8.2 Online mindfulness courses

As the delivery of MBIs in their traditional format may be limited by their cost and the availability of experienced facilitators, low-intensity online MBIs are attractive in terms of their lack of stigma, ease of updating and empowerment in terms of self-help skills. An online survey of convenience sample of 500 participants, found that internet and individual MBIs were preferred over group MBIs for most of participants. However, the prevalence of those who screened positive for depression, PTSD symptoms or both was higher in this sample than in general adult population.¹³⁹ Research on the effectiveness of online MBIs is minimal and includes:

- Gluck and Mareker's study¹⁴⁰ which reported that 13 days of an online mindfulness course, for 20 minutes a day, was associated with change in the right direction (but non-significant) for distress, perceived stress, mindfulness, mood and emotion regulation in a non-clinical sample of adults. Programme acceptance and satisfaction was high.
- A recent meta-analysis of self-help interventions¹⁴¹ that included mindfulness and/or acceptance components, concluded that their use resulted in a significantly higher levels of mindfulness/acceptance skills and significantly lower levels of anxiety and depressive symptoms than control conditions, with small to medium effect sizes. Larger effects were found for guided rather than

unguided self-help. There were no differences in effects between online and book/ audio based interventions.

Online mindfulness courses may be worthwhile for community samples with low to moderate levels of psychological distress. It is unknown how long any positive effects may be sustained for, nor for whom online courses may be ineffective.

8.3 Mindfulness apps

At the time of writing, there were approximately 23 mindfulness-based apps on the market, which included some education and practice support; many more are available which offer only guided meditation. Mobile health is an emerging field and research on the effectiveness of mindfulness apps for well-being is scarce. The circumstances that lead to an optimal intervention experience are largely unexplored across all delivery platforms.

A mindfulness app should clearly explain the philosophy and practice of mindfulness and address common misconceptions. A recent review¹⁴² rated the UK app 'Headspace' highest on an expert rating scale for mHealth, followed by Smiling Mind, iMindfulness and Mindfulness Daily. Only a few apps (e.g. ACT Coach, Complete Mindfulness) provided comprehensive text-based education. An app without mindfulness education may be beneficial if this information has been provided as part of a face-to-face MBI.

An RCT of 'Headspace' vs a control positive intervention¹⁴³ showed that 'happiness seekers' (i.e. those motivated to feel better) were found to significantly benefit from the app compared to controls. This brief intervention (10 mins for ten days) produced meaningful gains in positive emotion and reductions in depression scores. There was no significant impact on satisfaction with life, flourishing or negative emotion. It may take longer for an impact on these outcomes to transpire.

There is no evidence that using a mindfulness based app builds resilience. However, a meta-analysis of the effectiveness of positive interventions advocated a "shotgun"

approach whereby individuals practice multiple strategies to boost well-being at the same time.¹⁴⁴ Apps like 'Livehappy' and 'Happier' incorporate this approach with mindfulness, but they are under-researched. Using online or app based mindfulness interventions might effectively supplement face-to-face delivery of MBIs or could be used in a stepped care approach.

9.0 Summary and conclusions

The strongest body of evidence for the effectiveness of MBIs to promote good mental health is for adult clinical populations, following by sub-clinical child and adult populations. However, there is a good, and growing body of evidence around the potential of MBIs to address the early symptoms of poor mental health and to foster skills conducive to ongoing well-being and resilience, in community populations. The most commonly measured outcomes relate to perceived stress, anxiety, depression, emotion regulation, mood and well-being. The evidence suggests that finding ways to deliver MBIs at a community level, and in ways tailored to specific need and level of vulnerability, would be a good investment towards building the well-being and resilience assets of those groups. We offer recommendations to this effect in Section 10.

In many areas, our findings are consistent with the work carried out by the Mindfulness All-Party Parliamentary Group (MAPPG) which conducted an eight month inquiry into the potential for MBIs in key areas of public life. They found that mindfulness can be a transformative practice for many people, leading to a deeper understanding of how to keep oneself well. In their 2014 interim report, the MAPPG proposed that the government should widen the access to mindfulness training in health, education, workplaces and the criminal justice system where it has the potential to be an effective low-cost intervention with a wide range of benefits. The full report is due to be published in October this year.

10.0 Recommendations

The recommendations outlined below are based on our appraisal of the evidence which is emerging in this field. Much research has focused on clinical populations which this review excluded. Our recommendations are therefore based on what we feel is emerging good practice and evidence, where we feel there is sufficient good quality research to inform future action. We have framed our recommendations in keeping with the NICE guideline model of individual behaviour change¹⁴⁵ and present these in three sections relating to each population area reviewed in the report. However, MBIs do not easily map onto [behaviour change taxonomies](#) in that they aim to influence mental rather than physical health behaviour.

Most MBIs reviewed in this report are classifiable as 'high intensity'. To support successful provision of MBIs regardless of the target population it would be beneficial to:

- Respect the need for proper facilitator training with the relevant costs involved and to appreciate the rationale behind following the Good Practice Guidelines for Mindfulness Teachers^m and therefore not put pressure on any existing staff to offer low-dose mindfulness courses to the identified non-clinical populations without appropriate training.
- If decision to offer short courses should be made, request from prospective providers a good rationale for shortening the standard programme, given that the majority of research evidence is still based on the full 8-week curriculum.
- Help participants in completing mindfulness programmes by providing between sessions support and normalising uncomfortable and difficult experiences, especially among those who find it hard and are at a risk of dropping out.

^m UK Network of Mindfulness-based Teacher Training Organisations produced Good Practice Guidelines for Mindfulness-based Teachers <http://mindfulnessteachersuk.org.uk/pdf/UK%20MB%20teacher%20GPG%202015%20final%202.pdf> and Teacher Trainers <http://mindfulnessteachersuk.org.uk/pdf/GPG4-TrainersfinalOct2013.pdf> and is currently creating an UK listing of fully qualified teachers committed to ongoing CPD requirements.

- Remember that MBIs may work best and provide long-lasting effects where individuals and communities (or practitioner groups) have support to maintain regular practice after the course completion to develop the application of mindfulness in everyday life.

There are also some general recommendations for Leeds West CCG:

- to continue to support and develop work on addressing the wider determinants of health AND
- to use this report to inform the future commissioning of interventions to build psychological resources in the population as a preventive and early intervention approach to reducing mental ill health and building resilience.
- to disseminate the findings locally and with partner agencies and translate the recommendations into actions and commissioning decisions.
- to use the Jon Kabat-Zinn and Mark Williams paper currently in preparation (on what is a MBI) for future commissioning.
- to explore the potential to get involved in the Oxford University Myriad Study.
- read the All Party Parliamentary Mindfulness Group report when published and use recommendations accordingly.
- to consider personal engagement with MBIs in order to understand their mechanisms of change and to build one's own psychological resilience and well-being.

10.1 Whole population, very brief and brief MBIs

Very brief or brief interventions can take from 30 seconds to a couple of minutes, and are focused on: awareness raising of risks (of inaction) and benefits (of action); directions for further help; or providing encouragement and support for change. There are no tested examples of very brief or brief MBIs. Our [suggestions](#) are that [very brief interventions](#), suitable across all groups of interest, and in places such as libraries, GP surgeries, schools and local community centres, could include:

- prompt messages (poster based) about the importance of keeping a healthy mind; for example, 'Our minds are important – let's take care of them. Give your mind a few minutes every day to just be'; 'Give your mind a chance to recover. A few minutes stillness every day can really help'; 'Pay attention to the good things that happen – your mind will thank you for it.'
- awareness raising messages (poster based) about mindfulness; for example 'In need of some calm and care for your mind? Mindfulness might help'; 'People who feel worried, sad or stressed have found the practicing mindfulness helps. Find out more...'
- invitational messages (poster based) to engage in mindfulness. These should be asset- rather than deficit-based (to avoid stigma): for example; 'Ready to learn more about how our minds work? Try a mindfulness course to get more equipped with effective strategies for a healthy mind.'

Very brief interventions often follow an 'ask, advise, assist' structure. For example, very brief advice on mental health would involve recording the person's level of need for support, advising them that early intervention can be effective for positive mental health and advising them of mindfulness courses, apps, books or support that can help them to feel more positive and in control.

PEP workers, TaMHS workers, GPs, practice nurses and community support workers could raise awareness of the benefits of mindfulness practice in their consultations with people and would need: knowledge of the nature of mindfulness and what the likely outcomes are for a person, competence in knowing those for whom mindfulness may be most helpful and for whom it may be contraindicated; and awareness of how to access 'next steps'. Brief interventions might also include an introduction to a mindfulness app or an online mindfulness course.

The intensity of any suggested action should match the person's need for support to change their current experience (NICE, 2007).¹⁴⁵ Reasons for suggesting an MBI should

be clear, and the likely benefits explained. [Self-referral](#) to an MBI remains the preferred route because:

- readiness to engage in mindfulness practice, and being open to a new and different way of self-care (i.e. through a group based programme and meditative practice) appears essential to good outcomes.
- as personal mindfulness practice is associated with better outcomes, a basic level of personal commitment and motivation seems important.
- most of the evidence on MBIs are based on self-selecting participants.

Going directly to an eight week MBSR course may be unrealistic or unsuitable for many people; therefore

- a [stepped approach](#) may be important and might include suggestions to try: information evenings, taster sessions, trial of a free 10 day app, and 'in a nutshell' books to improve a person's readiness to engage.
- being group based, MBIs may capitalise on using, and building [social networks](#) to support change.
- it may be helpful to produce testimonies of change accessible online.
- promotion of MBIs should be mindful that people may feel they will be unable to 'do it' and may [fear failure](#).
- promotion of MBIs should avoid [evangelical](#) claims that it is a fix-all and for all.

Little is known about how to help an unmotivated person become '[mindfulness ready](#)'.

10.2 Whole population, extended brief MBIs

[Extended brief interventions](#)¹⁴⁵ are appropriate for service providers dealing with the general public who they see regularly for 30 minutes or more who: are involved in risky behaviours; have a number of health problems; have been assessed as being at increased or higher risk of harm; have been successfully making changes to their behaviour but need more support to maintain that change; have found it difficult to

change or have not benefited from a very brief or brief intervention. Notably, the evidence on MBIs suggests that there are greater benefits for those with greater need and/or a lower ability to tolerate stress.

There are no tested examples of extended brief MBIs. Our [suggestions](#) are that these could take the form of:

- extended information leaflets with information about the benefits of mindfulness practice (and taking-in-the-good strategies), how to access courses, and how to find out more, available for easy access by target communities. Both MBIs and associated information can be adapted for faith groups.
- more personalised/ tailored consultations by GPs, PEP workers, TaMHS workers and other community workers whereby the benefits of a MBI for that individual could be specified more thoroughly and with discussion of how to overcome barriers to engagement. This could include: support to register for an online course or a mindfulness based app and / or direction to accessible, short books or more online information about MBIs.
- encouragement to attend informal community meetings, offering information and tasters practices (with an adjunct social network building agenda).

10.3 High intensity MBIs: for people at increased risk of mental illness

Most MBIs are [high intensity](#). MBCT is the recommended programme for people with recurrent depression and the evidence in support of its use with other mental health problems is growing.¹⁴ MBSR is the recommended programme for stress reduction and improvement in general well-being, as well as in the management of chronic physical conditions. These should be used in line with the supporting research evidence even if other less carefully tailored programmes, of uncertain effectiveness, may be available at a lower price. The following features may improve general accessibility:

- the promotion of MBIs as [educational](#) or skills courses rather than mental health programmes⁷⁰ and the use of venues not primarily associated with

physical or mental health care.⁹² Mindfulness might be more acceptable to people when described as a [psychological technology](#) or toolkit for enhancing or optimising function, rather than as a deficit-reduction intervention.

- [supported transport](#)/ access to the intervention, befriending opportunities and by the provision of refreshments and meals. Provision of childcare, transport reimbursement, payments for participation in assessments for those on low income or unemployed may have contributed to higher participation rates in some studies.^{92, 146-7}
- for harder-to-reach populations, establishing a [relationship between instructor and a participant](#) through one-to-one sessions may be critical to clarify participant's expectations and concerns, to review the potential benefits of mindfulness and facilitate participants' continuing engagement in mindfulness course.^{90, 140}
- It is important to consider [potential differences](#) between professionals' and participants' worldview, perspectives, values, attitudes and life circumstances especially when offering a MBI to unemployed, marginalised or racial/ethnic minorities.¹⁴⁰ It would be good to offer these with a co-facilitator familiar with the recipients' culture, circumstances, and beliefs.
- MBIs help participants develop greater [self-awareness](#). Facilitators should have adequate training and experience to support people's new awareness of self, thoughts and feelings (Good Practice Guidance for Mindfulness-based Teachers). Recommendations on necessary qualifications for MBI facilitators to ensure the high standards of delivery are outlined in Appendix 4. The good practice guidance raises the importance of facilitators being trained and experienced in mindfulness and delivery of MBIs. The delivery of MBIs by people without such training/ practice is likely to be problematic and ineffective.
- facilitators should connect with [partner organisations](#) and form real relationships within community centres.
- enhanced support [in-between MBI sessions](#) may be crucial to retain participants. There are higher drop-out rates in inner city populations. Some

people may need extra support given particular personal mindsets (e.g. critical mind, low on compassion) or circumstances (e.g. unsupportive attitudes from relevant others). Support could be text or telephone based and could include prompts to practice, positive messages and invitations to take-in-the- good.

- **refresher classes** or drop-in session for the maintenance of benefits are likely to be important. In a recent Campbell systematic review of MBSR impact on health, quality of life and social functioning in adults, only 9 out of 31 RCTs included follow up data and the effects diminished over time except one study in which refresher classes were held.⁷⁴
- It would be worth encouraging the provision of local community **spaces for peacefulness** should be encouraged. Qualitative evidence from vulnerable, inner city and minority populations^{71, 87, 88} points to the fact that MBIs can help build social networks, reduce a sense of isolation and increase participation in social activities.
- MBIs can **complement other interventions**. People will need guidance on how to engage in multiple interventions. Some people may need to repeat the stepped approach cycle a number of times.

Whatever interventions may be offered, it would be very beneficial to monitor and collect data on drop-out as research evidence is very limited on the reasons people may find it difficult to engage with MBIs. Also, the use of a distress tolerance scale may be helpful in identifying who may benefit the most from the MBI.³⁴

10.4 MBIs for children and young people

In conjunction with the recommendations for **very brief, brief and extended brief interventions** offered at the start of the section, interventions in schools might also include assemblies to raise awareness of the importance of positive mental health care and how to access mindfulness tools to support this (e.g. apps and online).

High intensity interventions: The Leeds Support and Guidance Scheme promotes direct GP referrals to TaMHS. Leeds TaMHS is aware of MBIs and, as part of the University of Leeds consultation, indicated that MBIs align well with TaMHS objectives at both a universal and targeted level. The best model of implementation of MBIs in schools is likely to be:

- A cascading model whereby an eight week MBI is delivered to self-selecting teachers who then develop a personal practice and commitment to mindfulness for six months (see Oxford Myriad Project example). They then receive training (preferably face-to-face) to deliver programmes to CYP and build capacity within the school for sustainability. There could be portfolio offer of after school / lunch time drop-ins, quiet spaces, and refreshers (see Altrincham Grammar School example). Parents/ carers are included through information events and taster evenings with options to take up a course themselves (see Cumbria Headstart example). The new recommendation that each school in Leeds has a Lead for Emotional Health may be an effective way to support the delivery of MBIs in schools.
- Additional targeted, small group mindfulness sessions for CYP with greater need.

Current UK Project: Altrincham grammar Schools for Girls, Manchester.

The school runs classes for pupils in curriculum time and an optional club and drop in. They offer courses to teachers, local communities and parents. Girls in Year 7 have a taster of mindfulness with paws.b, as do Year 8 and 9. Year 10 have the full 8 week teen.b course. They offer top up or drop in for sixth formers and lower school pupils. They use .b foundations and MBSR for adult courses. They draw upon the Alliance for Learning offer: <http://allianceforlearning.co.uk/courses/professional-development/>

Current UK Project

Myriad: Mindfulness and Resilience in Adolescents (2015-2022)⁹

Funded by the Wellcome Trust to £6.4 million the large cluster RCT (in 76 schools) will use the ten week .b Mindfulness in Schools programme with 11-14 year olds. The project will examine whether the intervention, compared to teaching as usual, improves resilience in young adolescents, how it affects their processing of thoughts and feelings, whether there are different effects at different stages of development (to identify if there is a best time to deliver mindfulness) and whether effects are different for those with varying levels of mental health. There will be a two year follow-up point. It will also examine the best way to train teachers to deliver an MBI in school and will compare a standard MBSR for teachers with self-directed (online) programmes. The project is led by Mark Williams and Willem Kuyken at the University of Oxford, with Sarah Blakemore of University College London and Tim Dalgeish of the Medical Research Council.

Current UK Project: Cumbria Headstart Programme 2014-2015

Cumbria is one of 10 areas awarded £500,000 by the Big Lottery Fund as part of their national Headstart programme to build the resilience of children and young people aged 10 to 14 years. The ambition is to generate evidence to inform national practice and also to learn from the process of implementation. As part of their initial project, Cumbria Headstart will build capacity among staff in 28 schools in Furness and Carlisle to engage in their own mindfulness practice and to then deliver an age appropriate, universal mindfulness programme to their pupils. Outcome measures are emotional well-being and resilience of staff and pupils as well as greater detection of CYP needing additional support following the universal intervention. Alongside this, health professionals, including GPs, working with local CYP are also being engaged in practicing and delivering MBIs. The team are submitted their application for t5 year funding in spring 2016, to extend the work to 300 schools. The University of Leeds (School of Psychology) are co-funding a PhD student (2015-2018) to conduct a process evaluation and implementation analysis of this work in schools.

Other models of delivery could include:

- A full or abbreviated universal MBI delivered by experts to all CYP in school. This is a very intensive model of delivery.
- A full or abbreviated MBI delivered by experts to CYP in school identified as in need of early intervention. The framing of this type of delivery would need careful consideration to avoid stigma and promote engagement.
- Delivery of MBIs to parents first, then their child / young person. Less is known about this form of delivery.

10.5 MBIs for GPs and healthcare professionals

Epstein and Krasner¹⁴⁸ argue that resilience is key to enhancing quality of care, quality of caring and sustainability of the health care workforce. Resilience includes the capacity for mindfulness, self-monitoring, limit setting and attitudes that promote constructive and healthy engagement with (rather than withdrawal from) other difficult challenges at work, all of which are promoted through high intensity MBIs. In addition to generic recommendations offered above, interventions for GPs and wider HCPs may also include [CPD workshops to raise awareness of the benefits of mindfulness practice](#) for HCPs in the area of both personal and professional life. These information sessions could, among other things, emphasise:

- benefits to well-being, life and job satisfaction and consequent improvements in the quality of care provided.
- reductions reported in professional isolation during and after attending a MBI, and increased sense of community and support.
- benefits of mindfulness, self-awareness and self-monitoring in the form of reductions in errors, symptoms of burnout and increased patient satisfaction.
- a degree to which they have choices about how to address the stressors and self-regulate own cognitive, emotional and somatic reactions.
- physiological and neurocorrelates of enhanced stress recovery that can be developed through mindfulness training.^{e.g.149}
- that subsequent benefits among HCPs may be limited by the quality and commitment to practice beyond the course, understanding of the intention of MBIs and participants' initial motivation.¹²¹

Interventions for health professionals may take the form of a standardised eight week course with additional elements supporting practice in health care settings, e.g.:

- appreciative inquiry methods to support 'taking in the good'.
- discussion of mindful moments from clinical practice.

- examples of available mindfulness-based resources tailored to GPs and other HCPs such as: Mindfulness in Medicine website <http://www.fammed.wisc.edu/mindfulness>, or the latest e-book by Springer: *Mindful Medical Practice. Clinical Narratives & Therapeutic Insights* by Patricia Dobkin, (Ed.)¹⁵⁰ <http://www.springer.com/us/book/9783319157764>
- or resources focused less on mindfulness specifically such as “Happy MD” book¹⁵¹ or the online free tool <http://support.thehappynd.com/physician-burnout-prevention-matrix>.

MBIs could be adapted to a different, shortened format; however, the research evidence in support of those interventions is limited. Since the benefits for HCPs may take time to get established, provision of [maintenance sessions and ongoing institutional support](#) to practice is crucial. A survey to establish how many HCPs would be interested in participating in an MBI, either for personal benefits or with a view of using in with service users, is recommended.

Example of brief/ very brief intervention for primary care clinicians

Borrell-Carrio & Epstein¹⁵² suggested developing habits of self-monitoring strategies, e.g.:

- briefly pausing before calling next patient into the room, taking a breath to clear the mind of residual thoughts and feelings from the previous interaction to help them be more present and attentive for the next patient.
- using reflective questions to promote self-awareness, e.g., “What am I assuming about this situation that might not be true?” “In what ways are prior experiences influencing my responses to this situation?” “What might a trusted peer say about the way I managed this situation?”

References

1. Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. Hyperion.
2. Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of personality and social psychology, 84*(4), 822.
3. Carmody, J. & Hunsinger, M. (2012). Weekly Change in Mindfulness and Perceived Stress in a Mindfulness-Based Stress Reduction Program. *Journal of Clinical Psychology, 68*, 755–765.
4. Shapiro, S.L., Carlson, L., Astin, J.A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*(3), 373-386.
5. Hayes-Skelton, S.A., & Graham, J.R. (2013). Decentring as common link among mindfulness, cognitive reappraisal and social anxiety. *Behavioural and Cognitive Psychotherapy, 41*(3), 317-328.
6. Chiesa, A. & Serretti, A. (2009). Mindfulness-based stress reduction management in healthy people: a review and meta-analysis. *Journal of Alternative and Complimentary Medicine, 15*(5), 593–600.
7. Charles, S. T., Piazza, J. R., Mogle, J., Sliwinski, M. J., & Almeida, D. M. (2013). The wear and tear of daily stressors on mental health. *Psychological Science, 24*(5), 733-741.
8. Deyo, M., Wilson, K. A., Ong, J., & Koopman, C. (2009). Mindfulness and rumination: does mindfulness training lead to reductions in the ruminative thinking associated with depression?. *EXPLORE: The Journal of Science and Healing, 5*(5), 265-271.
9. Hill, C. L. & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion, 12*(1), 81.
10. Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Delacourt.
11. Birnie, K., Speca, M., & Carlson, L. E. (2010). Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR). *Stress and Health, 26*(5), 359-371.
12. Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality, 43*(3), 374-385.
13. Segal, Z.V., Williams, J.M.G., & Teasdale, J.D. (2002). *Mindfulness-Based Cognitive Therapy for Depression: a New Approach to Preventing Relapse*. New York: Guilford Press.
14. Chiesa, A. & Serretti, A. (2011). Mindfulness-based cognitive therapy for psychiatric disorders: A systematic review and meta-analysis. *Psychiatry Research, 187*(3), 441-453.
15. Wahbeh, H., Lane, J., Goodrich, E., Miller, M., & Oken, B.S. (2014). One-on-one mindfulness meditation trainings in research settings. *Mindfulness, 5*(1), 88-99.
16. Virgili, M. (2013). Mindfulness-based interventions reduce psychological distress in working adults: a meta-analysis of intervention studies. *Mindfulness, 1-12*.
17. Kohury, B., Lecompte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., & Hofman, S. G. (2013). Mindfulness-based therapy: a comprehensive meta-analysis. *Clinical Psychology Review, 33*, 763–771.
18. Kohury, B., Sharma, M., Rush, S.E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research, 78*, 519-528.
19. Gotink, R.A., Chu, P., Busschbach, J.J.V., Besnon, H., Fricchione, L., & Hunink, M.J.M. (2015). Standardised mindfulness-based interventions in healthcare: An overview of systematic reviews and meta-analyses of RCTs. *PLOSOne, 10*(4), e0124344 doi:10.1371/journal.pone.0124344
20. Hempel, S., Taylor, S.L., Marshall, N.J., Miake-Lye, I.M., Beroes, J.M., Shanman, R., Solloway, M.R., & Shekelle, P.G. (2014). Evidence map of mindfulness. VA-ESP Project #05-226
21. Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: stress and interventions to promote well-being. *Nature neuroscience, 15*(5), 689-695.
22. Algoe, S. B., & Fredrickson, B. L. (2011). Emotional fitness and the movement of affective science from lab to field. *American Psychologist, 66*(1), 35.
23. Weng, H. Y., Fox, A. S., Shackman, A. J., Stodola, D. E., Caldwell, J. Z., Olson, M. C., ... & Davidson, R. J. (2013). Compassion training alters altruism and neural responses to suffering. *Psychological science, 24*(7), 1171-1180.
24. Tamir, M. & Robinson, M. D. (2007). The happy spotlight: positive mood and selective attention to rewarding information. *Personality & Social Psychology Bulletin, 33*, 1124– 1136.

25. Helgeson, V. S., Reynolds, K. & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology, 74*(5), 797–816.
26. Garland, E. L., Gaylord, S. & Park, J. (2009). The role of mindfulness in positive reappraisal. *Explore (NY), 5*(1), 37–44.
27. Garland, E. L., Geschwind, N., Peeters, F. & Wichers, M. (2015). Mindfulness training promotes upward spirals of positive affect and cognition: multilevel and autoregressive latent trajectory modelling analyses. *Frontiers in Psychology, 6*.
28. Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56* (3), 218.
29. Kabat-Zinn, J. (2011). Some reflections on the origins of MBSR, skilful means, and the trouble with maps. *Contemporary Buddhism: An Interdisciplinary Journal, 12*(1), 281–306.
30. Santorelli, S. & Kabat-Zinn, J. (eds) (2013). *Mindfulness-based stress reduction (MBSR) professional education and training resource manual*. Shrewsbury, MA. University of Massachusetts: Centre for Mindfulness in Medicine, Health Care, and Society.
31. The Mindfulness Initiative (2015). Mindful Nation UK: Interim report of the all-party parliamentary group. <http://www.oxfordmindfulness.org/wp-content/uploads/mindful-nation-uk-interim-report-of-the-mindfulness-all-party-parliamentary-group-january-2015.pdf>
32. Fjorback, L.O., Arendt, M., Ornbol, E., Fink, P. & Walach, H. (2011). Mindfulness-based stress reduction and mindfulness-based cognitive therapy- a systematic review of randomised controlled trials. *Acta Psychiatrica Scandinavica, 124*, 102-119.
33. Dobkin, P. L., Irving, J. A., & Amar, S. (2012). For whom may participation in a mindfulness-based stress reduction program be contraindicated?. *Mindfulness, 3*(1), 44-50.
34. Gawrysiak, M.J., Leong, S.H., Grasseti, S.N., Wai, M., Shorey, R.C., & Baime, M.J. (2015). Dimensions of distress tolerance and the moderating effects on mindfulness-based stress reduction. *Anxiety, Stress and Coping: An International Journal, 1-27*.
35. Crane, R., Eames, C., Kuyken, W., Hastings, R. P., Williams, M., Bartley, T. & Surawy, C. (2013). Development and validation of the mindfulness-based interventions teaching assessment criteria (MBI:TAC). *Assessment, 20*(6), 681–688.
36. Lustyk, K., Chawla, N., Nolan, R. & Marlatt, G. A. (2009). Mindfulness meditation research: Issues of participant screening, safety procedures, and researcher training. *Advances in Mind-Body Medicine, 24*, 20–30.
37. Visted, E., J. Vøllestad, Nielsen, M.B., & Nielsen, G.H. (2015). The impact of group-based mindfulness training on self-reported mindfulness: A systematic review and meta-analysis. *Mindfulness, 6*(3), 501-522.
38. Black, D. (2015) Mindfulness Training for Children and Adolescents: A State of the Science Review. In K.W Brown, J. D. Creswell & R. M. Ryan (Eds.) *Handbook of Mindfulness Theory, Research, and Practice*. Guilford Press.
39. Black, D., Belzer, M., Semple, R. & Galla, B. (2015). Mindfulness Training for Children and Adolescents: Updates on a Growing Science with Novel Applications. In C. Willard & A. Saltzman (Eds.) *Teaching Mindfulness Skills to Kids and Teens*. Guilford Press.
40. Kallapiran, K., Koo, S., Kirubakaran, R., & Hancock, K. (2015). Effectiveness of mindfulness in improving mental health symptoms of children and adolescents: a meta-analysis. *Child and Adolescent Mental Health, 2015*.
41. Felver, J.A., Celis-de Hoyos, C., Tezanos, K. & Singh, N. Systematic Review of Mindfulness-Based Interventions for Youth in School Settings. Mindfulness DOI 10.1007/s12671-015-0389-4
42. Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness based interventions in schools—a systematic review and meta-analysis. *Frontiers in Psychology, 5*, 603.
43. Zoogman, S., Goldberg, S. B., Hoyt, W. T. & Miller, L. (2014). Mindfulness interventions with youth: A meta-analysis. *Mindfulness, 4*, 179–189.
44. Mendelson, T., Greenberg, M. T., Dariotis, J. K., Gould, L. F., Rhoades, B. L., & Leaf, P. J. (2010). Feasibility and preliminary outcomes of a school-based mindfulness intervention for urban youth. *Journal of abnormal child psychology, 38*(7), 985-994.
45. Raes, F., Griffith, J. W., Van der Gucht, K., & Williams, J. M. G. (2014). School-based prevention and reduction of depression in adolescents: A cluster-randomized controlled trial of a mindfulness group program. *Mindfulness, 5*(5), 477-486.
46. Bennett, K., & Dorjee, D. (2015). The Impact of a Mindfulness-Based Stress Reduction Course (MBSR) on Well-Being and Academic Attainment of Sixth-form Students. *Mindfulness, 1-10*.

47. Broderick, P. C., & Metz, S. (2009). Learning to BREATHE: A pilot trial of a mindfulness curriculum for adolescents. *Advances in School Mental Health Promotion*, 2(1), 35-46.
48. Huppert, F. A., & Johnson, D. M. (2010). A controlled trial of mindfulness training in schools: The importance of practice for an impact on well-being. *The Journal of Positive Psychology*, 5(4), 264-274.
49. Sibinga, E. M., Perry-Parrish, C., Chung, S. E., Johnson, S. B., Smith, M., & Ellen, J. M. (2013). School-based mindfulness instruction for urban male youth: a small randomized controlled trial. *Preventive Medicine*, 57(6), 799-801.
50. Franco, C., Mañas, I., Cangas, A. J., & Gallego, J. (2010). The applications of mindfulness with students of secondary school: Results on the academic performance, self-concept and anxiety. In *Knowledge management, information systems, e-learning, and sustainability research* (pp. 83-97). Springer Berlin Heidelberg.
51. van de Weijer-Bergsma, E., Langenberg, G., Brandsma, R., Oort, F. J., & Bögels, S. M. (2014). The effectiveness of a school-based mindfulness training as a program to prevent stress in elementary school children. *Mindfulness*, 5(3), 238-248.
52. Kuyken, W., Weare, K., Ukoumunne, O. C., Vicary, R., Motton, N., Burnett, R., ... & Huppert, F. (2013). Effectiveness of the Mindfulness in Schools Programme: non-randomised controlled feasibility study. *British Journal of Psychiatry*, 203(2), 126-131.
53. Coholic, D., Eys, M., & Lougheed, S. (2012). Investigating the effectiveness of an arts-based and mindfulness-based group program for the improvement of resilience in children in need. *Journal of Child and Family Studies*, 21(5), 833-844.
54. Hennelly, S. (2011). *The immediate and sustained effects of the b mindfulness programme on adolescents' social and emotional well-being and academic functioning*. Unpublished MA diss., Oxford Brookes University.
55. Stice, E., Shaw, H., Bohon, C., Marti Nathan, C., & Rohde, P. (2009). A meta-analytic review of depression prevention programs for children and adolescents: factors that predict magnitude of intervention effects. *Journal of Consulting and Clinical Psychology*, 77, 486-503.
56. Lau, N. S., & Hue, M. T. (2011). Preliminary outcomes of a mindfulness-based programme for Hong Kong adolescents in schools: well-being, stress and depressive symptoms. *International Journal of Children's Spirituality*, 16(4), 315-330.
57. Schonert-Reichl, K. A., Oberle, E., Lawlor, M. S., Abbott, D., Thomson, K., Oberlander, T. F., & Diamond, A. (2015). Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based school program for elementary school children: A randomized controlled trial. *Developmental psychology*, 51(1), 52.
58. Bluth, K., Campo, R., Pruteanu-Malinici, S., Reams, A., Mullarkey, M. & Broderick, P. (2015) A School-Based Mindfulness Pilot Study for Ethnically Diverse At-Risk Adolescents. *Mindfulness*. DOI 10.1007/s12671-014-0376-1.
59. Schonert-Reichl, K. A., & Lawlor, M. S. (2010). The effects of a mindfulness-based education program on pre-and early adolescents' well-being and social and emotional competence. *Mindfulness*, 1(3), 137-151.
60. Semple, R. J., Lee, J., Rosa, D., & Miller, L. F. (2010). A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance social-emotional resiliency in children. *Journal of Child and Family Studies*, 19(2), 218-229.
61. Liehr, P., & Diaz, N. (2010). A pilot study examining the effect of mindfulness on depression and anxiety for minority children. *Archives of Psychiatric Nursing*, 24(1), 69-71.
62. Poehlmann-Tynan, J., Vigna, A. B., Weymouth, L. A., Gerstein, E. D., Burnson, C., Zabransky, M., ... & Zahn-Waxler, C. (2015). A Pilot Study of Contemplative Practices with Economically Disadvantaged Pre-schoolers: Children's Empathic and Self-Regulatory Behaviours. *Mindfulness*, 1-13.
63. Kuyken, W., Hayes, R., Barrett, et al. (2015). Effectiveness and cost-effectiveness of mindfulness-based cognitive therapy compared with maintenance antidepressant treatment in the prevention of depressive relapse or recurrence (PREVENT): a randomised controlled trial. *The Lancet*, 386, online 4th July.
64. Williams, J.M., Duggan, D.S., Crane, C., & Fennell, M.J.V. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behaviour. *Journal of Clinical Psychology*, 62, 201-10.
65. Williams, J.M.G., Crane, C., Barnhofer, T., et al. (2014). Mindfulness-based cognitive therapy for preventing relapse in recurrent depression: a randomised dismantling trial. *Journal of Consulting Clinical Psychology*, 82, 275-86.

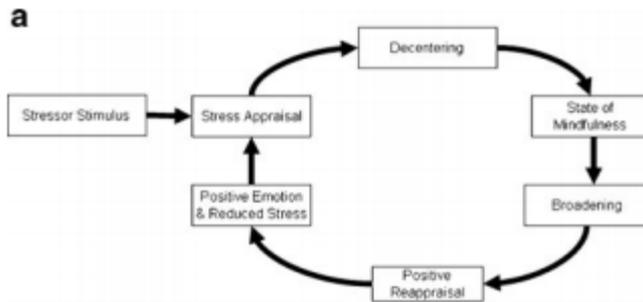
66. Macedo, T., Wilhelm, L., Goncalves, R., Coutinho, E.S., Vilete, L., Figueira, et al. (2014). Building Resilience for future adversity: a systematic review of interventions in non-clinical samples of adults. *BioMed Central Psychiatry*, 14(1), 227.
67. Lyssenko, L., Muller, G., Kleindienst, N., Schmahl, C., Berger, M., Eifert, G., Kollé, A., Nesch, S., Ommer-Hohl, J., Wenner, M., & Bohus, M. (2015). Life Balance – a mindfulness-based mental health promotion program: conceptualisation, implementation, compliance and user satisfaction in a field setting. *BioMed Central Public Health*, 15, 740.
68. Smith, K.L., Matheson, F.I., Moineddin, R., Dunn, J.R., Lu, H., Cairney, J., et al. (2013). Gender differences in mental health service utilisation among respondents reporting depression in a national health survey. *Health*, 5(10), 1561.
69. Kanton, W., vonKorf, M., Lin, E., Lipscomb, P., Russo, J., Wagner, E., & Polk, E. (1990). Distressed high utilisers of medical care. *General Hospital Psychiatry*, 12(6), 355-362.
70. Roth, B., & Stanley, T.W. (2002). Mindfulness-based stress reduction and health utilisation in the inner city: preliminary findings. *Alternative Therapies*, 8(1), 60-2, 64-6.
71. Roth, B., & Robbins, D. (2004). Mindfulness-based stress reduction and health-related quality of life: findings from a bilingual inner-city patient population. *Psychosomatic Medicine*, 66(1), 113-123.
72. Kurdyak, P., Newman, A., & Segal, Z. (2014). Impact of mindfulness –based cognitive therapy on healthcare utilisation. A population-based controlled comparison. *Journal of Psychosomatic Research* 77, 85-89
73. deVibe, M., Bjorndal, A., Tipton, E., Hammerstrom, K., & Kowalski, (2012). Mindfulness-based stress reduction (MBSR) for improving health, quality of life and social functioning in adults. *Campbell Systematic Reviews*, 3.
74. Eberth, J. & Sedlmeier, P. (2012). The effects of mindfulness meditation: A meta-analysis. *Mindfulness*, 3, 14-89.
75. Chambers, S.K., Foley, E., Galt, E., Ferguson, M., & Clutton, S. (2012). Mindfulness groups for men with advanced prostate cancer: A pilot study to assess feasibility and effectiveness and the role of peer support. *Supportive Care in Cancer*, 20(6), 1183-1192.
76. Shonin, E., Gordon, W.V., Slade, K., & Griffiths, M.D. (2013). Mindfulness and other Buddhist derived interventions in correctional settings: A systematic review. *Aggression and Violent Behaviour*, 18, 365-372.
77. Hosseinzadeh Asl, N., & Barahmand, U. Effectiveness of mindfulness-based cognitive therapy for co-morbid depression in drug-dependent males. *Archives of Psychiatric Nursing*, 28, 314-318.
78. Mohammadkhani, P., Khanipour, H., Azadmehr, H., Mobramm, A., & Naseri, E. (2015). Trait mindfulness, reasons for living and general symptom severity as predictors of suicide probability in males with substance abuse or dependency. *Iranian Journal of Psychiatry*, 10, online 1st January.
79. Williams, J. M. G., Duggan, D. S., Crane, C., & Fennell, M. J. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behaviour. *Journal of clinical psychology*, 62(2), 201-210.
80. Barnhofer, T., Crane, C., Brennan, K., Duggan, D. S., Crane, R. S., Eames, C., Radford, S., Silverton, S., Fennell, M. J. V., & Williams, J. M. G. (2015, August 24). Mindfulness-Based Cognitive Therapy (MBCT) Reduces the Association Between Depressive Symptoms and Suicidal Cognitions in Patients With a History of Suicidal Depression. *Journal of Consulting and Clinical Psychology*. Advance online publication.
81. Aldao, A., Nolen-Hoeksema, S., & Shweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30(2), 217-237.
82. Addis, M.E. (2008). Gender and depression in men. *Clinical Psychology: Science and Practice*, 15(3), 153-168.
83. Levant, R.F. (1998). *Desperately Seeking Language: Understanding, Assessing and Treating Normative Male Alexithymia*. New York: John Wiley & Sons Inc.
84. Lomas, T., Edginton, T., Cartwright, T., & Ridge, D. (2015). Cultivating equanimity through mindfulness meditation: A mixed methods enquiry into the development of decentering capabilities in men. *International Journal of Well-being*, 5(3), 88-106. doi:10.5502/ijw.v5i3.7
85. Fuchs, C., Lee, J.K., Roamer, L., & Orsillo, S.M. (2013). Using mindfulness- and acceptance-based treatments with clients from non-dominant cultural and/ or marginalised backgrounds: Clinical considerations, meta-analysis findings and introduction to the special series. *Cognitive and Behavioural Practice*, 20, 1-12.
86. Olano, H.A., Kachan, D., Tannenbaum, S.L., Mehta, A., Annane, D., & Lee, D. (2015). Engagement in mindfulness practices by U.S. adults: Sociodemographic barriers. *The Journal of Alternative and Complementary Medicine*, 21(2), 100-102.
87. Szanton, S.L., Wenzel, J., Connolly, A.B., & Piferi, R.L. (2011). Examining mindfulness-based stress reduction: Perceptions from minority older adults residing in low-income housing facility. *BioMed Central Complementary and Alternative Medicine*, 11(44).

88. Palta, P., Page, G., Piferi, R. L., Gill, J.M., Hayat, M.J., Connolly, A.B., & Szanton, S.L. (2012). Evaluation of mindfulness-based intervention program to decrease blood pressure in low-income African American older adults. *Journal of Urban Health: Bulletin of New York Academy of Medicine*, 89(2).
89. Witkiewitz, K., Greenfield, B.L., & Bowen, S. (2013). Mindfulness-based relapse prevention with racial and ethnic minority women. *Addictive Behaviours*, 38, 2821-2824.
90. Hick, S.F. & Furlotte, C. (2010). An exploratory study of radical mindfulness training with severely economically disadvantaged people: Findings of Canadian study. *Australian Social Work*, 63(3), 281-298.
91. Roth, B. & Creaser, T. (1997). Mindfulness meditation-based stress reduction. Experience with bilingual inner city program. *Nurse Practitioner*, 22(3), 150-2,154,157.
92. Blum, H. (2015). Mindfulness equity and Western Buddhism: reaching people of low socio-economic status and people of colour. *International Journal of Dharma Studies*, 2(10), doi: 10.1186/s40613-014-0010-0.
93. Hawkins, R. (2015). Personal communication during the Mindfulness in Society Conference, Chester, UK, July 3-7th
94. Jacobs, S.L. & Blustein, D.L. (2008). Mindfulness as a coping mechanism for employment uncertainty. *Career Development Quarterly*, 57(2), 174-180.
95. De Jong, A., Hommes, M., Brouwers, A. & Tomic, W. (2013). Effects of mindfulness-based stress reduction on stress, mindfulness, job self-efficacy and motivation among unemployed people. *Australian Journal of Career Development*, 22(2), 51-62.
96. Passman, R. (2011). Mindfulness and work preparedness pilot. Department of Health in partnership with NHS North West. Good Practice Case Study Workforce Information Network Portal, www.ewin.northwest.nhs.uk/
97. Campbell, D. (2015). NHS workplace stress could push 80% of senior doctors to early retirement, Guardian, 11th September, 2015. <http://www.theguardian.com/society/2015/sep/10/nhs-lose-80-per-cent-senior-doctors-workplace-stress>
98. Bruce, S.M., Conaglen, H.M., & Conaglen, J.V. (2005). Burnout in physicians: a case for peer support. *Internal Medicine Journal*, 35, 272-8.
99. Vahey, D.C., Aiken, L.H., Sloane, D.M., Clarke, S.P., & Vargas, D. (2004). Nurse burnout and patient satisfaction. *Medical Care*, 42, 57-66.
100. Thomas, J., & Otis, M. (2010). Intrapsychic correlates of professional quality of life: Mindfulness, empathy and emotional separation. *Journal of Society for Social Work and Research*, 1, 83-98.
101. Spickard, A., Gabbe, S.G., & Christensen, J.F. (2002). Mid-career burnout in generalist and specialist physician. *Journal of the American Medical Association*, 288, 1447-50.
102. Miller, K.I., Stiff, J.B., & Ellis, B.H. (1988). Communication and empathy as precursors to burnout among human service workers. *Communication Monographs*, 55, 250-65.
103. Beddoe, A.E. & Murphy, S.O. (2004). Does mindfulness decrease stress and foster empathy among nursing students? *Journal of Nursing Education*, 43, 305-12.
104. Skosnik, P.D., Chatterton, R.T. & Swisher, T. (2000). Modulation of attentional inhibition by norepinephrine and cortisol after psychological stress. *International Journal of Psychophysiology*, 36, 59-68.
105. Irving, J.L., Dobkin, P.L. & Park, J. (2009). Cultivating mindfulness in health care professionals: A review of empirical studies of mindfulness-based stress reduction (MBSR). *Complementary Therapies in Clinical Practice*, 15, 61-66.
106. Esquirex, B.F. & Labbe, E.E. (2011). Health care providers' mindfulness and treatment outcomes: A critical review of the research literature. *Mindfulness*, 2, 242-253.
107. Smith, A. (2011). Mindfulness-based cognitive therapy improves staff well-being. Good Practice Case Study Workforce Information Network Portal, www.ewin.northwest.nhs.uk/
108. Graham, L. (2015). NHS Staff Mindfulness (MBCT) Project 2011 to 2014: Large Reductions in Staff Sickness Rates One Year Following Course, unpublished internal report, Lancashire Care NHS Foundation Trust.
109. Virgili, M. (2015). Mindfulness-based interventions reduce psychological distress in working adults: A meta-analysis of intervention studies *Mindfulness*, 6(2), 326-337.
110. vanWyk, B.E., & Pillay-vanWyk, V. (2010). Preventative staff-support interventions for health workers. *Cochrane Database of Systematic Reviews*, 3, CD003541.
111. Burton, A., Burgess, C., Dean, S., Koustopoulou, G. & Hugh-Jones, S. (in press) A systematic review and meta analysis of the effects of mindfulness based interventions on healthcare professionals. *Stress & Health*

112. Bazarko, D., Cate, R. a, Azocar, F., & Kreitzer, M. J. (2013). The Impact of an Innovative Mindfulness-Based Stress Reduction Program on the Health and Well-Being of Nurses Employed in a Corporate Setting. *Journal of Workplace Behavioural Health, 28*, 107–133.
113. Shapiro, S. L., Astin, J. a., Bishop, S. R., & Cordova, M. (2005). Mindfulness-Based Stress Reduction for Health Care Professionals: Results From a Randomized Trial. *International Journal of Stress Management, 12*, 164–176.
114. Schenstrom, a., Ronnberg, S., & Bodlund, O. (2006). Mindfulness-Based Cognitive Attitude Training for Primary Care Staff: A Pilot Study. *Complementary Health Practice Review, 11*, 144–152.
115. Brady, S., O'Connor, N., Burgermeister, D., & Hanson, P. (2012). The Impact of Mindfulness Meditation in Promoting a Culture of Safety on an Acute Psychiatric Unit. *Perspectives in Psychiatric Care, 48*, 129–137.
116. Fortney, L., Luchterhand, C., & Zakletskaia, L. (2013). Abbreviated Mindfulness Intervention for Job Satisfaction, Quality of Life, and Compassion in Primary Care Clinicians: A Pilot Study. *Annals of Family Medicine, 11*, 412–420.
117. Foureur, M., Besley, K., Burton, G., Yu, N., & Crisp, J. (2013). Enhancing the resilience of nurses and midwives: pilot of a mindfulness-based program for increased health, sense of coherence and decreased depression, anxiety and stress. *Contemporary Nurse, 45*, 114–25.
118. Horner, J. K., Piercy, B. S., Eure, L., & Woodard, E. K. (2014). A pilot study to evaluate mindfulness as a strategy to improve inpatient nurse and patient experiences. *Applied Nursing Research, 27*(3), 198-201.
119. Rose, S., & Sheffield, D. (2014). The effects of mindfulness-based stress reduction on burnout. A systematic Review. Presented at the Leeds Mindfulness Teachers Peer Supervision Group, Dec 2014.
120. Maslach, C., & Jackson, S.E. (1981). *Maslach Burnout Inventory: Research Edition Manual*. Consulting Psychologists Press.
121. Morgan, P., Simpson, J., & Smith, A. (2014). Health care workers' experiences of mindfulness training: A Qualitative Review. *Mindfulness, 6*(4), 744-758.
122. Stewart, M. (1995). Effective physician-patient communication and health outcomes: A review. *Canadian Medical Association Journal, 152*, 1423–33.
123. Epstein, R.M. (1999). Mindful practice. *Journal of American Medical Association, 282*, 833-83
124. Horowitz, C.R., Suchman, A.L., Branch, W., & Frankel, R.M. (1995). What do doctors find meaningful about their work? *Annals of Internal Medicine, 138*(9), 772-776.
125. West. C.P., Dyrbye, L.N., Rabatin, J.T., Call, T.G., Davidson, J.H., Multari, A., Romanski, S.A. Henriksen-Hellyer, J.M., Sloan, J.A., & Shanafelt, T.D. (2014). Interventions to promote physician well-being, job satisfaction and professionalism. A Randomised Control Trial. *JAMA Internal Medicine, 174*(4), 527-533.
126. Goodman, M.J. & Schorling, J.B. (2012). A mindfulness course decreases burnout and improves well-being among healthcare providers. *International Journal of Psychiatry in Medicine, 43*(2), 119-128.
127. Moll, S., Frolic, A., & Key, B. (2015). Investing in compassion: exploring mindfulness as a strategy to enhance interpersonal relationships in health care practice. *Journal of Hospital Administration, 4*(6), 36-45.
128. Beach, M.C., Roter, D., Korhuis, P.T., Epstein, R.M., Sharp, V., Ratanavwngsa, N., Cobn, J., Eggly, S., Sankar, A., Moore, R.D., & Saba, S. (2014). A multicentre study of physician mindfulness and health care quality. *Annals of Family Medicine, 11*(5), 421-428.
129. Krasner, M.S., Epstein, R.M., Beckman, H., Suchman, A.L., Chapman, B., Mooney, C.J., & Quill, T.E. (2009). Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA Clinicians corner, 302*(12), 1284-1293.
130. Beckman, H.B., Wendland, M., Mooney, C., Krasner, M.S., Quill, T.E., Suchman, A.L., & Epstein, R.M. (2012). The impact of a program in mindful communication on primary care physicians. *American Medicine, 87*(6), 815-819.
131. Carmody, J., & Baer, R. A. (2009). How long does a mindfulness-based stress reduction program need to be? A review of class contact hours and effect sizes for psychological distress. *Journal of Clinical Psychology, 65*(6), 627-638.
132. Harnett, P. H., Whittingham, K., Puhakka, E., Hodges, J., Spry, C., & Dob, R. (2010). The short-term impact of a brief group-based mindfulness therapy program on depression and life satisfaction. *Mindfulness, 1*(3), 183-188.
133. Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., & Schwartz, G. E. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioural Medicine, 33*(1), 11-21.

134. Bergen-Cico, D., Possemato, K., & Cheon, S. (2013). Examining the efficacy of a brief mindfulness-based stress reduction (Brief MBSR) program on psychological health. *Journal of American College Health, 61*(6), 348-360.
135. Mitchell, M., & Heads, G. (2015). Staying well. A follow up of a 5 week mindfulness b-based stress reduction programme for a range of psychological issues. *Community Mental Health Journal*, published online Jan 17, doi: 10.1007/s10597-014-9825-5.
136. Pidgeon, A.M., Ford, L., & Klaassen, F. (2014). Evaluating the effectiveness of enhancing resilience in human service professionals using a retreat-based Mindfulness with Metta Training Program: A randomised control trial. *Psychology, Health & Medicine, 19*(3), 355-364.
137. Klatt, M., Steinberg, B., & Duchemin, A. (2015). "Mindfulness in motion": An onsite mindfulness-based intervention for chronically high stress work environments to increase resilience and work engagement. *Journal of Visualised Experiments, 101*(e52359), 1-11.
138. Klatt, M.D., Steinberg, B., Marks, D. & Duchemin, A. (2012). Changes in physiological and psychological markers of stress in hospital personnel after a low-dose mindfulness-based worksite intervention. *Complementary an Alternative Medicine, 12*(Suppl. 1), 016.
139. Wahbeh, H., Svalina, M.N., & Oken, B.S. (2014). Group, one-on-one or internet? Preferences for mindfulness meditation delivery format and their predictors. *Open Medicine Journal, 1*, 66-74.
140. Glück, T. M., & Maercker, A. (2011). A randomized controlled pilot study of a brief web-based mindfulness training. *BMC psychiatry, 11*(1), 175.
141. Cavanagh, K., Strauss, C., Forder, L., & Jones, F. (2014). Can mindfulness and acceptance be learnt by self-help?: A systematic review and meta-analysis of mindfulness and acceptance-based self-help interventions. *Clinical psychology review, 34*(2), 118-129.
142. Mani, M., Kavanagh, D.J., Hides, L., Stoyanov, S.R. (2015). Review and Evaluation of mindfulness- based iPhone Apps. *JMIR mHealth uHealth, 3*(3):e8
143. Howells, A., Ivtzan, I., & Eiroa-Orosa, F. J. (2014). Putting the 'app' in Happiness: A Randomised Controlled Trial of a Smartphone-Based Mindfulness Intervention to Enhance Well-being. *Journal of Happiness Studies, 1*-23.
144. Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of clinical psychology, 65*(5), 467-487.
145. NICE (2014) *Behaviour Change: Individual Approaches*. NICE guidelines [PH49] <https://www.nice.org.uk/guidance/ph49/chapter/1-Recommendations>
146. Sobczak, L.R., & West, L. M. (2013). Clinical considerations in using mindfulness- and acceptance-based approaches with diverse populations: addressing challenges in service delivery in diverse community settings. *Cognitive Behavioural Practice, 20*, 13-22.
147. Dutton, M.A., Bermudez, D., Matas, A., Majid, H., Myers, N.L. (2013). Mindfulness-based stress reduction for low-income, predominantly African American women with PTSD and a history of intimate partner violence. *Cognitive and Behavioural Practice, 20*, 23-32.
148. Epstein, R.M., & Krasner, M.S. (2013). Physician resilience: what it means why it matters and how to promote it. *American Medicine, 88*(3), 301-303.
149. Johnson, D.C., Thom, N.J, Stanley, E.A., Haase, L., Minor, T.R., & Paulus, M.P. (2014). Modifying resilience mechanism in at-risk individuals: A controlled study of mindfulness training in Marines preparing for deployment. *American Journal of Psychiatry, 171*(8), 844-853.
150. Dobkin, P. (Ed.) (2015). Mindful Medical Practice. Clinical Narratives & Therapeutic Insights. eBook by Springer <http://www.springer.com/us/book/9783319157764>
151. Drummond, D. (2014). *Stop Physician Burnout: What to Do When Working Harder Isn't Working*. Heritage Press Publications. www.thehappyemd.com
152. Borrell-Carrio, F., & Epstein, R.M. (2004). Preventing errors in clinical practice. A call for self-awareness. *Annals of Family Medicine, 2*, 310-316.

Appendix 1: Taking in the good – models of mindfulness and upward spiralling



According to the mindful coping model (Garland et al. 2009) (Fig. 1, left) to re-construe an experience as positive, one must first disengage from the initial, negative appraisal into a transitory state that diminishes existing, automatic links with this type of experience. A

person who practices mindfulness can initiate an adaptive response by decentering from a stress appraisal. This is termed a state of mindful awareness.

This state is characterized by broadened attention and increased cognitive flexibility (Fig 2, right). From the vantage point of this expanded, metacognitive state, individuals can then more easily reappraise their experience and reframe them as meaningful or even beneficial and, in so doing, reduce stress while promoting the experience of positive emotions, such as hope or challenge. Recurrent engagement of this metacognitive state via mindful effort may result in the establishment of mindful dispositionality, which, in turn, could lead to a heightened propensity toward making positive reappraisals in the face of distress as a cognitive coping style.



Fig. 1 **a** The mindful coping model: cross-sectional view (Garland et al. 2009). **b** The mindful coping model: longitudinal view (Garland et al. 2010)

Mindfulness and positive reappraisal may be components of an upward spiral; a cognitive–emotional system that can counter the self-perpetuating and damaging cycles triggered by negative emotions. When positive emotions expand people’s mindsets, these cognitive effects may reciprocally increase the frequency and intensity of positive emotions, as one

increasingly focuses attention on pleasurable, beautiful, rewarding, or meaningful objects and events. By engendering awareness of positive experiences and perspectives, positive emotions tend to accrete over time, leading to more frequent positive emotions in the future. Upward spirals of positive emotions may be keys to fostering resilience in the face of adversity (from Garland et al., 2011).

Appendix 2: An outline of generic components of an MBCT programme

This highly experiential and interactive "course" was initially developed to prevent depressive relapses. It is currently applied in a much wider contexts, with both clinical and non-clinical populations worldwide. It consists of:

- eight weekly two-hour sessions that include periods of guided instruction in a number of meditation practices, periods of silent exploration, and periods of collective inquiry and dialogue, all aimed at cultivating deep, penetrative awareness and insight, and the creativity that flows from these qualities of mind.
- one-day silent practice retreat offered between session 6 and 7 to deepen the learnings and experiences developed and to offer opportunity for emersion in the "being mode of mind" as opposed to operating on automatic pilot most of the time.

Sessions 1-4 The first four sessions focus primarily on each participant's development of physical and mental calmness and stability as necessary precursors to the capacity to respond more effectively to everyday challenges. The course content, homework, and daily mindfulness assignments of session one through four are aimed at assisting participants to cultivate their capacity to **STOP** and **SEE**. During these sessions learning is focused on:

- entering into, and dwelling in, stillness and deep relaxation
- tasting first-hand, non-judgmental, non-reactive awareness
- practicing an array of mindfulness techniques
- recognizing when we are feeling stressed
- becoming increasingly aware of subtle mind-body interactions and their impact on health and well-being, and
- recovering more rapidly from stressful events.

Sessions 5-8 Building on the first four weeks of training participants further develop the above mentioned skills, while deepening the capacity to apply these skills within the inseparable rigor of personal/ professional lives. The remaining four sessions focus on enhancing one's ability to more clearly **UNDERSTAND** oneself, others, and situations within an interconnected web of information, and on learning how to **CHOOSE** appropriate and effective responses. The second part of the course focuses on developing moment-to-moment awareness of previously unconscious mental habits and patterns to improve effectiveness of interactions and to explore ways of:

- utilising and effectively bringing mindfulness into day-to-day activities – both as a tool for stress reduction and as a vehicle for developing greater understanding and collaboration within personal circles.
- developing greater empathy for oneself and others
- refining one's capacity to deliberately sustain awareness in complex, emotionally-charged situations, thus reducing emotional reactivity

- recovering, invigorating, and reasserting one's innate capacity for creativity and connectedness with colleagues, friends, family members and wider community.

Who is mindfulness training for?

Everyone can benefit from mindfulness, as everyone faces pressures and stresses and can get stuck in personal reactions. The things that stress and challenge a person may not change, but the way in which they deal with them can shift, making it all feel easier. Being more aware and accepting of one's thoughts and feelings means we are in a better place to make wise choices and deal with difficulties more effectively.

What are the benefits of mindfulness training?

Over the past few decades, randomised-controlled trials have shown that MBIs are effective in managing stress, worry, anxiety and depression, as well as improving people's relationships, sharpening attention and aiding self-regulation and maintaining balance. This course can not only teach participants ways to reduce stress, but also ways to become more tolerant, 'stress-hardy' and resilient, so that they will be less thrown by life's difficulties. Most people completing 8 week programmes in the workplace report that they gain lasting benefits, such as:

- more energy and enthusiasm
- a greater capacity for relaxation
- more self-confidence
- greater clarity and focus
- increased ability to handle stressful situations

Appendix 3: Studies examining the effectiveness of MBIs with non-clinical CYP populations

Study	Age (M±SD), Age Range or mean (SD)	N	Intervention/Sample Origin	Study Design/ Location/Treatment Duration	Control Group	Measures/Domain	Main Findings
Bennett & Dorjee (2015)	16-18, mean 17.7	23 (11 IG, 13CG)	6 th Formers	School / CT 8 weeks at the end of a school day, 2-h group sessions Following the Centre for Mindfulness (CFM) syllabus with minor adjustments(vocabulary, age appropriate and images, metaphors and discussions). Asked to do 45 min personal practice / day	BAU	Pre/post 3 month follow up Depression, anxiety, stress (DASS 21) Well-being (WHO-5) Academic attainment Medical absence	Medium-size effect differences between IG and CG on depression but not anxiety scores at T2 and T3 with the IG scoring lower. medium-size effect on anxiety reduction from T2 to T3 in IG only. NS decrease in anxiety. Medium-size effect difference in academic attainment between the two groups at T3 with IG achieving nearly one GCE grade per subject. No group difference in well-being.
Bluth et al.		27 (14 IG, 13 CG) 14 completers in IG.9 in CG.	Learning-To-Breathe / At risk teens (parent-referred or referred by original high school). Fidelity assess as sessions audio-recorded.	RCT / School 50 min, once a week, over one school semester.	Substance abuse control class	Feasibility & acceptability Pre / Post Mindfulness Self-compassion Social Connectedness Anxiety Depression Stress	L2B class was associated with larger improvements in depression and anxiety relative to the control class. Small to medium effects for comparing the classes' changes on social connectedness, perceived stress, and mindfulness.
Britton et al. (2014)	11.79 ± 0.41 yrs	101	MBSR/Healthy 6 th grade students	RCT/School 3-12 min, 4-5 x week for 6 weeks	6 week Curriculum on ancient African History	Pre/Post Internalizing/externalizing problems Attention	MI produced greater reductions in self-harm ideation than controls but controls had significantly more suicidal participants.

						Affect Mindfulness Suicide ideation/self-harm	No other significant differences between groups.
Broderick & Metz (2009)	17.4 yrs	120	Learning-to-Breathe / private girls school pupil	CT/School	Junior school pupils (m age 16.4 yrs)	Pre/post Positive & negative affect scale Emotional Regulation Rumination Somatization Index of the Child Behavior Checkli	IG showed significant reduction in negative affect and a significant increase in feeling calm/relaxed/self-accepting. No other mean gain scores within the other three measures (DERS, RRS, SICBC) demonstrated significant differences between IG and CG. IG showed significant decline pretest to post-test in difficulty in emotion regulation. 64.6% practicing some mindfulness at home..
Coholic et al. (2012)	8 – 14 yrs From child protection agency and the children's mental health center - need for self-esteem improvement	29	MBSR + Arts based methods/ aimed to teach the children how to pay attention; use their imaginations; identify and explore their feelings, thoughts and behaviors; and develop their strengths.	CT/Lab 120mins, 1x week for 12 weeks	Arts and Crafts 120mins, 1x week For 12 weeks	Pre/Post Self-Concept Resilience	Self-reported improvements found for emotional reactivity of MI group (i.e. ability to regulate the speed and intensity of negative emotional responses improved) relative to controls.
Flook et al. (2010)	7 – 9 yrs	64	MAP/Healthy School Children	RCT/School/ 30 mins 2x a wk for 8 wks	Silent Reading	Pre/Post Executive Function	Relative to controls, MT group showed increased behavioural regulation, metacognition, and executive function. Children in the MI group who were less well

							regulated (behaviourally) showed greater improvements in EF than children in the control condition.
Franco et al. (2011)	16 – 18 yrs	61	MM/Healthy School Children	RCT/School/ 90 mins a wk for 10 wks	Waitlist Control	Pre/Post Anxiety Academic Performance Self-Concept	Children in MI group significantly improved on all measures, where as control group did not. Children with low self-concept showed greatest improvement in self-concept. Most anxious children benefitted most on state anxiety.
Hennelly (2011)	11 – 17 yrs	99	.b/Healthy School Children	CT/School/ 90 mins a wk for 8 wks	Control Group (standard curriculum)	Pre/Post 6 month follow up Mindfulness Resilience Well-Being	Significant effect on Well-being as well-being of control group decreased over time but MI group remained the same. In MI group females ego resilience increased when compared to controls. Males decreased.
Hilt & Pollak (2012)	9 – 14 yrs	102	MM/Healthy Youths	RCT/Community/One time 8-min audio	Problem Solving Task	Pre/Post Mood Blood Pressure State Rumination	State rumination after negative mood induction reduced after MI and distraction training but not after problem solving
Hupperta & Johnson (2010)	14 – 15 yrs 100% male	134	MBSR/Healthy Male School Children	CT/School/40 mins 1x per wk for 4 wks	Normal religious study lessons	Pre/Post Mindfulness Resilience Well-Being	No sig. overall differences between MI group and controls for resilience. Intervention group was sig. related to change in well-being and degree of this related to degree of home practice
Kukylen et al. *	12–16	522 (256 IG; 266 CG)	Mindfulness in Schools (9 lessons) delivered by trained practitioners/ healthy pupils	Pilot CT / UK secondary school (6 private + 6 publicly funded schools)	RS or PSHE lesson	Pre / Post & 3 mth follow up Well-being Stress Depression	Acceptability high. Relative to CG, IG reported fewer depressive symptoms post-treatment and at follow-up and lower stress and greater well-being at follow-up. Extent of personal practice associated with better well-being and less stress at 3-month follow-up.
Lau & Hue (2011)	14 – 16 yrs	48	MBSR/Low achieving school children	CT/School/120 min, 1 time per wk for 6 wks + retreat	Unspecified	Pre/Post Mindfulness	Self-reported depression and stress reduced in IG group relative to CG. Mindful presence and personal

						Well-being Depressive Symptoms Perceived Stress	growth increased in IG relative to CG.
Liehr & Diaz. (2010)	9.5 ± 1.6 yrs	18	MBSR/Ethnic Minority	RCT/School/15 min, 5 times per wk for 10 wks	Health Education	Pre/Post Depression Anxiety	MT group self-reported reduced depressive and anxiety symptoms compared to controls.
Mendelson et al. (2010)	8 – 10 yrs	98	MM/Ethnic Minority	RCT/School/45 min, 4 times per wk for 12 wks	Wait list Control	Pre/Post Stress Depression Positive/Negative Emotions Peer relationships	MT group significantly reduced problematic involuntary responses to social stress and subscales of rumination, intrusive thoughts, and emotional arousal compared to controls.
Metz et al. (2013)	16.45 (0.95)	216	Part MBSR/Healthy School Children	CT/School/18 sessions over 16 wks for 15 – 25 minutes	Learning as usual	Pre/Post Emotional Regulation Psycho-somatic complaints Perceived Stress Self-efficacy in Emotion Regulation	Significant difference between groups. MI group reported 10% decrease in stress whereas control reported no change. MI group also demonstrated significant improvements in emotion regulation, self-regulation efficacy, and a larger reduction in psychosomatic complaints than controls.
Potek (2012)	14 – 17 yrs	30 (48% female)	MBSR/Healthy School Children	6 weeks x 45 min + HW	Waitlist Control	Baseline/7 week follow up/14 week follow up Emotional Regulation Perceived Stress Anxiety	Over time anxiety levels of MI group decreased significantly more than anxiety levels in the control condition. Effect size for stress 0.44 and for anxiety 1.19
Raes et al (2014)	13 – 20 yrs	408 (64% female)	MBSR/MBCT/Healthy School Children	RCT/School/100 mins 1x wk for 8 wks	Teaching as Usual	Pre/Post/6 month follow up Depression Anxiety Stress	MI group showed significantly greater reductions in depression than controls at 6 month follow up. Effect size for depression 0.42
Schonert-	9 – 13 yrs	25	MM/School Children	CT/School/45 min, 1x wk for	Waitlist	Pre/Post	Compared to controls the MT

Reichl & Lawlor (2010)			with Academic Problems	9 wks	Control	Optimism Self-concept Positive/Negative Emotions Teacher reported Social and Emotional competence	group showed self-reported improvements in optimism, teacher-reported domains of socioemotional and attention/concentration competence compared to controls.
Schonert-Reichl & Lawlor (2015)	9 – 11 yrs	99	MM + SEL/Healthy School Children	RCT/School/40 – 50 mins, 1x a wk for 12 wks	Social Responsibility Program	Pre / Post Executive Function Stress physiology Empathy Optimism Emotional Control Self-Concept Depressive Symptoms Mindfulness Social Responsibility Pro-sociality Well-Being Peer Acceptance Math Grades	Relative to controls, MI showed significant improvements in EF's and self-report measures of well-being, self- and peer-reported prosocial behaviour. They also tended to show better math performance relative to controls. MI group also maintained a diurnal cortisol rhythm associated with good mental health whereas the controls diurnal cortisol rhythm flattened out over time which has been associated with neurocognitive dysregulation and depression.
Sibinga et al. (2013)	11 – 14 yrs	41 (all male)	MBSR/Low income/ 95% African America	RCT/School/6 x 45 min x 12 weeks	Health Education	Pre/Post Mindfulness Rumination Emotion Awareness Anger Expression Conflict Anxiety Depression Perceived Stress Coping Approaches	MI group displayed significantly less anxiety and less rumination post intervention than controls. Less negative coping mechanisms were found for MI group as compared to controls but just under statistical significance ($p=0.6$) Effect size for stress 0.23, for anxiety 0.29 and for depression 0.36
Sibinga et al. (2014)	13 – 19 yrs	35	MBSR/Low income	RCT/Clinic/120 mins, 1x wk fir 8 wks + 180 min retreat	Health Education	Pre/Post Anxiety, Depression,	No significant differences between groups in self-reported survey items. Qualitative data did however reveal MI group to

						Trait Anxiety, Other Psychological markers, Emotions, Quality of Life, Coping, Self-efficacy, Self- esteem	experience increased calm, conflict avoidance, and self-regulation when dealing with stressors than controls.
van de Weijer- Bergsma, et al. (2014)	8-12 y	199	MBSR/MBCT/healthy, ethnically diverse	RCT/School/30 min, 2 x week for 6 weeks	Wait List Control	Base/Pre/Post 7-wk Follow up Anxiety Emotional Disorders Rumination Emotional Competence Social Competence Sense of Coherence Subjective Happiness Mental Well-being Classroom Climate Sleep Quality	MI group showed child reported improvements in analysis of emotions, rumination, and parent reported excessive somnolence compared to controls; poorest scoring children at baseline showed the most improvement.
White (2012)	8-11 y	155 (all female)	MBSY + yoga	School / 8 weeks x 60 min +HW	Waitlist	Feed bad scale	Effect size for stress 0.29

IG: Intervention Group; CG: control group; RCT: Randomised controlled trial; CT: Controlled Trial

Appendix 4: Qualifications for MBI facilitators

These recommendations are based on the “Sussex Partnership NHS Trust governance arrangements for teaching MBCT within their Trust. Mindfulness-based Interventions Practice Network, Feb 2014”

In order to offer MBIs of an appropriate standard it is expected that, unless working as a trainee mindfulness teacher under appropriate supervision, teachers/clinicians facilitating MBI groups should meet the national good practice guidelines for teaching mindfulness-based courses produced by the UK Network of Mindfulness-based Teacher Training Organisations

(<http://mindfulnessteachersuk.org.uk/pdf/teacher-guidelines.pdf>).

In addition to meeting those guidelines, MBI teachers should:

- 1) Have a professional mental health training that includes the use of evidenced based therapeutic approaches. This point applies to running MBCT groups. Other qualifications (e.g. teaching qualifications) or equivalent life experience (e.g. regular personal mindfulness practice and extensive retreat experience in mindfulness over considerably more than two years) may substitute for mental health training if using other (non MBCT) mindfulness-derived approaches with certain populations.
- 2) Have an established, regular personal Mindfulness practice (usually interpreted as two years or more).
- 3) Have attended at least one 8 week MBI course as a participant.
- 4) Co-run at least two MBI groups with a more experienced teacher before running MBI groups with a peer of similar experience. A further two groups need to be co-run with either a more experienced teacher or a peer of similar experience (i.e. four groups in total) before solo or lead running MBI groups.
- 5) Have a named mindfulness supervisor who agrees that the facilitator is ready to run their own MBI groups. If the supervisor does not think they are ready, clear indications must be given by the supervisor regarding what experience and training are needed.

These criteria are a minimum standard only and greater experience and training in mindfulness than that listed above may be necessary for people to lead MBCT groups confidently.