Design and refinement of the MATE program: Mindful Awareness Training and Education. How do young people understand and practise mindfulness?

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Abstract

**Background and aims:** Young people (aged 15-24) often experience difficulties regulating their emotions. This is thought to be a key mediator of distress and ill health. Improving emotion regulation is an important target for mental health promotion in this age group. Mindfulness practice includes cultivating awareness of emotions and developing skilful ways to deal with them. Mindfulness training has been shown to improve mental health in adults. Preliminary investigations have also been reported in children and adolescents. Few studies specific to young people are available and none have reported engaging young people themselves in the design process. Very little research has been reported into online delivery, and all of this work so far has involved adults. Using the Internet to provide mindfulness training has the potential to improve accessibility for young people. Very little research, all of which has involved adults, has been reported into online delivery. The aim in this project was to use a participatory, mixed methods approach to the design and preliminary evaluation of a mindfulness training program for young people in live and online editions.

**Methods:** Initial design of the Mindful Awareness Training and Education program, MATE version 1, was informed by a review of the literature and discussion with experts. MATE v.2 was created after consultation with 13 mindfulness-naïve young people. The live edition of MATE v.2 was trialled with 11 participants. Evaluation included qualitative interviews, a focus group, written and online feedback, and quantitative measurement. The latter was conducted at commencement, immediately after the program and at six weeks' follow-up. Qualitative data collection and analysis were informed by grounded theory.

**Results:** Consultees on MATE v.1 described mindfulness training as a desirable activity for young people and offered valuable suggestions regarding program structure and content. Recruitment of participants for the pilot trial of MATE v.2 was difficult. Those enrolled showed a high level of engagement with both the program content and evaluation process: 73% completed all program stages, 88% of whom also attended either a focus group or interview. Benefits, in terms of improved emotion regulation and well-being, and reduction in symptoms of stress, anxiety and depression were suggested by qualitative and quantitative data. An explanatory model of participants' experience was devised indicating that: (1) key initial benefits were a calmer mind and greater sense of agency; and (2) that with ongoing practice, additional benefits may occur. Greater understanding of their minds helped participants develop enhanced confidence and perceived competence in managing day-to-day challenges. Some participants reported transient increased distress in the middle weeks of the program. MATE v.3, the final version of the program, in live and online editions, resulted from an integration of findings.

**Conclusions:** Mindfulness training appears to be acceptable to young people and a feasible strategy to enhance mental health and well-being in this age group. Participants in the live trial were able, within a short time, to develop a sophisticated understanding and application of mindfulness. The MATE program, as devised and refined in this project, is ready for large-scale face to face trial and for website development in its online edition.
Declaration

I certify that:

(i) the thesis comprises only my original work towards the PhD,
(ii) due acknowledgement has been made in the text to all other material used,
(iii) the thesis is fewer than 100,000 words in length, exclusive of tables, figures, bibliographies and appendices.

Kaveh Monshat 25 March 2013
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Those who have helped me directly, been a source of support, or shown kindness in some way during this project are too numerous to mention by name. I extend my gratitude to them all. I am particularly grateful to those named below who have been especially important sources of help.

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Dr Michelle Blanchard was a source of support and advice about how to engage young people and a great link with the Inspire Foundation. Drs Jo Mitchell and Jacolyn Norrish have provided guidance about day-to-day conduct of the project. Dr Norrish also took the time to code qualitative data independently. I received valuable advice from Drs Narelle Warren, Bridget Hamilton and Mike Salzberg regarding research design. The advisory panel on the project included Professors Nick Allen and Tony Jorm who also provided helpful guidance. Mr Bernie Cramm provided help regarding information technology matters.

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<tr>
<td>ACT</td>
<td>Acceptance and Commitment Therapy</td>
</tr>
<tr>
<td>ADHD</td>
<td>Attention Deficit Hyperactivity Disorder</td>
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<td>ADHDT</td>
<td>ADHD Test</td>
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<tr>
<td>ANOVA</td>
<td>Analysis Of VAriance</td>
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<td>ARS-IV</td>
<td>ADHD Rating Scale-IV Awareness Training</td>
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<td>BDI</td>
<td>Beck Depression Inventory</td>
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<tr>
<td>BSI</td>
<td>Brief Symptom Checklist</td>
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<td>CAMS</td>
<td>Cognitive Affective Mindfulness Scale</td>
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<td>CASEL</td>
<td>Collaborative to Advance Social and Emotional Learning</td>
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<td>Child Behaviour Check List</td>
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<td>Cognitive Behaviour Therapy</td>
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<td>Centre for Epidemiological Studies Depression Scale</td>
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<td>CHIP-AE</td>
<td>Child Health and Illness Profile - Adolescent Edition</td>
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<tr>
<td>CI</td>
<td>Confidence interval</td>
</tr>
<tr>
<td>d</td>
<td>Cohen's d</td>
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<tr>
<td>DASS</td>
<td>Depression Anxiety Stress Scale</td>
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<td>DBT</td>
<td>Dialectical Behaviour Therapy</td>
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<td>DERS</td>
<td>Difficulties in Emotion Regulation Scale</td>
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<td>DES</td>
<td>Differential Emotions Scale</td>
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<tr>
<td>df</td>
<td>Degrees of freedom</td>
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<td>ERS</td>
<td>Ego Resiliency Scale</td>
</tr>
<tr>
<td>ES</td>
<td>Effect size</td>
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<tr>
<td>F</td>
<td>F-test score</td>
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<td>FMI</td>
<td>Freiburg Mindfulness Inventory</td>
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<td>GADQ-IV</td>
<td>Generalised Anxiety Disorder Questionnaire-IV</td>
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<td>GAF</td>
<td>Global assessment of functioning</td>
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<td>GSR-IBS</td>
<td>Gastrointestinal Symptoms Rating Scale-Irritable Bowel Syndrome</td>
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<td>GT</td>
<td>Grounded Theory</td>
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<td>HSR-S</td>
<td>Healthy Self-Regulation Scale</td>
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<td>F1-2</td>
<td>$F^{1-2}$-score of heterogeneity</td>
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<td>IBS-QoL</td>
<td>Irritable Bowel Syndrome Quality of Life Instrument</td>
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<td>ICPSI</td>
<td>I Can Problem Solve</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technologies</td>
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<td>IPA</td>
<td>Interpretative phenomenological analysis</td>
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<td>ITI</td>
<td>Information Technology</td>
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<td>Kentucky Inventory of Mindfulness Skills</td>
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<td>MAAS</td>
<td>Mindful Attention Awareness Scale</td>
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<td>MADRS-S</td>
<td>Self-Assessment version of Montgomery Åsberg Rating Scale for Depression</td>
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<td>MASC</td>
<td>Multidimensional Anxiety Scale for Children</td>
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<td>MASQ</td>
<td>Mood and Anxiety Symptoms Questionnaire</td>
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<td>MATE</td>
<td>Mindful Awareness Training and Education Program</td>
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<td>MBAT</td>
<td>Mindfulness Based Art Therapy</td>
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<td>MBCR</td>
<td>Mindfulness Based Cancer Recovery</td>
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<tr>
<td>MBCT</td>
<td>Mindfulness Based Cognitive Therapy</td>
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<td>MBEAT</td>
<td>Mindfulness Based Eating</td>
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<td>Mindfulness Based Intervention</td>
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<td>MBRP</td>
<td>Mindfulness Based Relapse Prevention</td>
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<td>MBSR</td>
<td>Mindfulness Based Stress Reduction</td>
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<tr>
<td>MHC</td>
<td>Mental Health Continuum</td>
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<td>MHP</td>
<td>Mental Health Promotion</td>
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<tr>
<td>MQ</td>
<td>Mindfulness Questionnaire</td>
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<td>MT</td>
<td>Mindfulness Training</td>
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<tr>
<td>NEO-FFI</td>
<td>Neuroticism Extroversion Openness Five Factor Inventory</td>
</tr>
<tr>
<td>NS</td>
<td>Not statistically significant</td>
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<tr>
<td>PANAS</td>
<td>Positive And Negative Affect Schedule</td>
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<td>PATHS</td>
<td>Promoting Alternative Thinking Strategies</td>
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<tr>
<td>PDF</td>
<td>Portable Document Format</td>
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<tr>
<td>PERMA</td>
<td>Positive emotions Engagement Relationships Meaning and Accomplishment</td>
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<tr>
<td>POMS</td>
<td>Profile of Mood States</td>
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<td>PSQ</td>
<td>Perceived Stress Questionnaire</td>
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<td>PSS</td>
<td>Perceived Stress Scale</td>
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<tr>
<td>PSWQ</td>
<td>Penn State Worry Questionnaire</td>
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<td>PWB</td>
<td>Psychological Well-being</td>
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<tr>
<td>PWBS</td>
<td>Psychological Well-being Scale</td>
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<tr>
<td>PWI</td>
<td>Personal Well-being Index</td>
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<tr>
<td>QoL</td>
<td>Quality of Life</td>
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<tr>
<td>r</td>
<td>Pearson's r</td>
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<tr>
<td>RCT</td>
<td>Randomized controlled trial</td>
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<td>RI</td>
<td>Resiliency Inventory</td>
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<td>RRQ</td>
<td>Rumination Reflection Questionnaire</td>
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<td>SCL</td>
<td>Hopkins Symptom Check List</td>
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<tr>
<td>SD</td>
<td>Standard deviation</td>
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<td>SEL</td>
<td>Social Emotional Learning</td>
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<tr>
<td>SFS</td>
<td>Symptoms and Functioning Scale</td>
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<td>SMQ</td>
<td>Southampton Mindfulness Questionnaire</td>
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<td>SNAP-IV</td>
<td>Swanson Nolan And Pelham-IV scale for ADHD in adolescents</td>
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<td>SOSI</td>
<td>Symptoms of Stress Inventory</td>
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<td>SRP</td>
<td>Stress Release Program</td>
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<td>STAI</td>
<td>State Trait Anxiety Inventory</td>
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<td>STAIC</td>
<td>State Trait Anxiety Inventory for Children</td>
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<tr>
<td>SWB</td>
<td>Subjective Well-Being</td>
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<td>SWLS</td>
<td>Satisfaction With Life Scale</td>
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<tr>
<td>TCI</td>
<td>Temperament and Character Inventory</td>
</tr>
<tr>
<td>TOVA</td>
<td>Test of Variables of Attention</td>
</tr>
<tr>
<td>TRSSC</td>
<td>Teachers’ Rating Scale of Social Competence</td>
</tr>
<tr>
<td>TSWLS</td>
<td>Temporal Satisfaction With Life Scale</td>
</tr>
<tr>
<td>UMCFM</td>
<td>University of Massachusetts Centre for Mindfulness</td>
</tr>
<tr>
<td>v</td>
<td>Version</td>
</tr>
<tr>
<td>WCS</td>
<td>Wisconsin card sorting test</td>
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<tr>
<td>WEMWS</td>
<td>Warwick-Edinburgh Mental Well-Being Scale</td>
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<tr>
<td>YP</td>
<td>Young people</td>
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<tr>
<td>Z-Stouffer's</td>
<td>Z-Stouffer's Z-score</td>
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<tr>
<td>$\chi^2$</td>
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Introduction

Background

Adolescence and young adulthood are often associated with the emergence of emotional and behavioural difficulties and mental disorders. A considerable proportion of the disease burden in this age group (15-24) relates to mental distress. In recent years this issue has begun to influence health policy in developed nations. While the need may be as great or greater in developing countries, the response has been limited there. This document will focus on the mental health of young people in Australia.

Significant resources have been devoted in recent years to enhance treatment services, including early intervention for mental disorders in this age group. Health promotion strategies may, in addition: reduce sub-clinical distress and dysfunction; avert development of clinical disorders; and provide long-term dividend as improved health and productivity in future years. Engaging young people themselves in the design of strategies to fulfil mental health policy objectives has been shown to be an essential element in ensuring real-world effectiveness.

To maximize access and encourage engagement by this age group, health promotion should ideally occur both in a face to face and an online format. The delineation between online and offline life is increasingly blurred for young people. The Internet is increasingly recognized not merely as a tool or medium used by young people, but as a setting in which they interact as well as form and express their identity.

A rapidly expanding evidence base over the past three decades attests to the benefits of mindfulness training (MT) in healthcare and health promotion. MT aims to provide an emotionally skilful orientation to day-to-day internal and external experience. The habitual tendency to be engrossed in thoughts about the past or future is lessened. Fully engaging with moment to moment experience is privileged ahead of automatic thoughts about experience. As a
consequence, emotional distress may be reduced in so far as it results from unnecessary preoccupations and unexamined emotional reactions.¹²

There is a well-established relationship between impaired emotional control and symptoms of distress in young people.¹³ The ability of MT to enhance emotion regulation¹⁴ renders it a particularly attractive tool for mental health promotion in this age group. Commonly used strategies to improve mental health, such as those derived from cognitive behaviour therapy (CBT), aim to treat or prevent mental illness. MT has not arisen from a clinical disorder treatment paradigm. It aims to enhance positive mental health and well-being directly, rather than through symptom reduction.¹⁵ It is thus well-suited to young people in a non-clinical context.

A review of the MT literature showed that:

1. Most published studies in MT involve adult participants and/or individuals with clinical disorders or other specific sources of distress (e.g. social disadvantage).
2. Where MT has been delivered to young people, programs have often been those previously trialled in adults without a clear explanation of modifications. Where a youth-specific program has been described, the rationale and process of development are not reported in detail. No current evidence is available regarding young peoples’ participation in program design. Scant qualitative data have been published regarding young people’s understanding and application of mindfulness.
3. Very few studies could be identified in any population, and none in young people, that concerned MT via the Internet.
Key questions and aims

Three unanswered questions formed the focus of this project:

1. What are the characteristics of an MT program, in both face to face and online editions, that is developed bottom-up – that is, with young people involved throughout the design process?
2. How do young people understand and apply the ideas and practices that constitute mindfulness?
3. What could be the mechanisms of benefit, from young people’s own perspective, that underlie changes reported in outcome measures used in quantitative studies?

Using a participatory program development process, the aim in this project was to engage young people in the design of MT delivered both face to face and online. A mixed methods evaluation was conducted, taking advantage of both quantitative and qualitative approaches, to: (1) derive optimal program design; and (2) shed new light on how young people understand mindfulness. Results were expected to add to knowledge about how MT could be delivered effectively to promote health and well-being in this population. Answering the above questions in this way was seen as necessary groundwork for future large-scale trials of MT, including on the Internet.

Overview of methods and results

A literature review and discussion with experts was conducted concerning youth health promotion, online intervention and mindfulness training. An initial set of ideal characteristics for a youth-specific MT program and a strategy for online translation were devised. An evidence-based local MT program designed for adults had many desirable characteristics and was used as a template.

A written summary and a schematic online version of the proposed Mindful Awareness Training and Education Version 1 (MATE v.1) was prepared. It was then used as the basis of a consultation study. Thirteen young people were
interviewed face to face or by telephone. Their views were obtained as to: (1) how the proposed program could be improved; and (2) whether the suggested evaluation strategy was relevant and acceptable. Participants saw mindfulness training, including online, as a desirable activity for young people. They offered valuable suggestions regarding length, structure and timing of presentation of various components. The findings were used to devise MATE v.2.

The live edition of MATE v.2 was tested in a pilot live group mindfulness training trial with 11 young people. Evaluation included outcome measures administered before, and at repeated intervals following, training. As well, a focus group was conducted with seven program completers. In-depth interviews were held with five. Written and online responses were collected at eight time points. The results indicated that mindfulness training was feasible for and acceptable to young people and may lead to benefits in terms of mental health and well-being. Some distress occurred in middle weeks of the program in three participants but this was a transient phenomenon. Results allowed further elaboration, building on the initial consultation, of specific strategies that may be required for mindfulness training to be optimally tailored to this age group.

The detailed qualitative data analysis shed light on how the participants understood and applied the ideas and practices associated with mindfulness. Data analysis and collection were conducted consistent with grounded theory methodology. This allowed an explanatory model of young people’s relationship with mindfulness to be developed. Results showed that before exposure to mindfulness participants were subject to frequent emotional tumult. They also tended to react to distress in ways that they recognized as unhelpful. With mindfulness practice, initially seen as a ‘stress management technique’, they gained a sense of calm, balance and control. Subsequently, and with ongoing practice, they developed a clearer understanding of themselves and others. They now saw mindfulness as a ‘mindset’, associated with greater confidence and competence in meeting day-to-day challenges. They thus believed that they were less likely to experience emotional turmoil in the future.
Informed by the two studies above, final face to face and online mindfulness training programs were devised as end products of this project. The live edition, Live MATE v.3, is available for immediate use in future research or service provision. In addition, optimal characteristics were defined and content generated for the MATE website, including a standalone e-health program, E-MATE v.3. This allows future development of an online platform to allow trial of efficacy and potentially large-scale dissemination.

**Outline of chapters**

In Chapter 1 a review of the relevant literature is presented on: mental health promotion as a concept and its importance and relevance to young people; the online environment as a setting for health promotion activities; the necessity for and best practice in engaging young people in program design; what mindfulness is and the role mindfulness training may have in promoting mental health and well-being; qualitative and quantitative research in mindfulness; and the ideal characteristics of a mindfulness training program for young people. The chapter ends with aims of the project.

Chapter 2 provides an overview of methods used in the project. First, the rationale for each project activity is presented. The approach to evaluation is then placed in context of the methodological literature. The chapter ends with ethical considerations and a description of training activities undertaken.

In Chapter 3 the process for devising MATE v.1 is described. This initial version is briefly outlined. Methods and results of the consultation with young people, Study 1, are then presented. The chapter ends with MATE v.2, the refined program that resulted from this study.

Chapter 4 contains methods and results for the pilot live trial of MATE v.2, Study 2a. Participant feedback on feasibility, acceptability and practical aspects of the program are presented along with changes in quantitative outcome measures.
In Chapter 5 methods for and results of the grounded theory analysis are described as Study 2b. An explanatory model is presented of young people’s understanding and experience with mindfulness itself. The chapter ends with a systematic comparison of qualitative and quantitative data regarding the effects of mindfulness practice.

*Chapter 6* outlines how findings from various stages of the project were integrated to arrive at a final version of the program. Characteristics of this version, MATE v.3, are outlined.

In *Chapter 7* data from the variety of participant groups and collection methods are discussed together to generate an integrated understanding. Findings are then contrasted with the MHP and MT research literature. In addition, participants’ experience of mindfulness is interpreted in light of the theoretical literature on mindfulness. Potential contributions to best practice in teaching MT to young people are next presented. The chapter ends with the limitations of this project.

*Chapter 8* includes conclusions that may be drawn from findings and their implications for future research and service provision. *References* are followed by *appendices* which contain a range of material developed for use in this project, the outcome measures used and the papers based on the work and published to date in peer-reviewed journals.
Chapter 1 Background and aims

This chapter will outline the relevance of mindfulness training (MT) to mental health promotion (MHP) in young people.* MHP includes, but is not limited to, the prevention of ill health, early intervention, and improvement of symptoms in those already ill. Promotion of positive health and well-being in all individuals, with or without clinical disorders or specific risk factors, are also within its scope. The term ‘mental health promotion’ is often used to signify efforts to influence social determinants of health. Its broader meaning, as any activity that aims to improve health, is used in this project.

Determining ways to define and improve positive mental health have been the subject of much research in recent years. This is exemplified by the field of ‘positive psychology’. Though biased towards individual psychological skills, positive psychology is also concerned, like MHP, with influencing institutions and society at large to support well-being.

Efforts to improve mental health in young people are warranted because of the high rates of mental distress and overt mental disorders. Effective health promotion in this age group is often conducted in non-health sectors (e.g. educational) and aimed at non-clinical populations.

Mindfulness training (MT) has been incorporated in medicine and psychology in recent decades influenced by spiritual and philosophical traditions. Such traditions have been less concerned with treating disease symptoms than with reducing the self-generated aspects of day-to-day emotional distress. MT is as such particularly suited to an MHP paradigm. Difficulties in emotion regulation are known mediators of distress in young people. MT, which can improve regulation, is an attractive form of MHP in this population.

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* See definitions on page 34.
A description of the approach to literature searching and the consultation with experts that informed the project are presented. Part 1 of the background to the project comprises an overview of the field of MHP in young people, including the use of the Internet and youth participation. Part 2 contains a conceptual review of mindfulness training followed by a review of the evidence base in intervention studies. Part 3 describes how what is know about MHP and mindfulness informs the optimal characteristics for an MT program for youth. The chapter ends with a summary of the background and the aims of the project.

1.1. Literature review and expert consultation

The key databases used to access the relevant literature throughout the project were MEDLINE, PSYCInfo and CINAHL. Formal literature review occurred in early 2009 and late 2011. This was before and following the studies which constituted this project. Automated email alerts were set up based on the search strategy used in 2009. This ensured that new publications were accessed as they became available throughout the project.

It was important that the initial search, based on which the project was to be designed, was particularly exhaustive. To this end, ISI Web of Science, Scopus, and the Cochrane Database of Systematic Reviews were also searched at this time. Consultation with experts (see below) and examination of references in key articles was another method used to locate relevant articles.

The general literature on mindfulness was first retrieved using indexing subject headings particular to each database. This was supplemented by a text search in titles and abstracts expressed in the following Boolean phrase: (mindful* OR meditat*) AND (“mental health” OR “mental disorder” OR “mental disorders” OR depress* OR anxi* OR substance* OR alcohol OR “illicit drug” OR “high prevalence disorders” OR “high prevalence mental disorders” OR flourish* OR well-being OR well-being OR stress OR coping OR cope* OR resilien* OR optimis* OR “positive emotions” OR “quality of life” OR “QOL” OR happiness OR “life satisfaction” OR “satisfaction with life” OR “negative affect” OR “positive affect” OR qualitative).
It was important that all qualitative, adolescent, youth and online studies in MT were uncovered. The following specific searches were performed in titles and abstracts to supplement articles found using subject headings:

- (mindful* OR meditat*) AND (qualitative* OR “focus group” OR interview)
- (mindful* OR meditat*) AND (youth* OR adolesc* OR young)
- (mindful* OR meditat*) AND (Internet OR online OR www OR “World Wide Web” OR “world wide web” OR computer*)

A total of 5419 articles were initially retrieved. These were imported into the Endnote X1 (Thompson Reuters, New York, 2009) program to allow automatic discarding of duplicates (i.e. articles that had been indexed in several databases). A total of 2756 papers resulted. These were sorted by title to allow visual inspection for relevance and to find duplicates not automatically detected. Relevant unique articles thus collated numbered 1234. All abstracts were reviewed and the full text of the 252 most relevant articles obtained.

The author’s supervisors had internationally recognized expertise in the fields of mental health promotion, youth mental health and positive psychology. Discussion was also held with the following local and international experts in the fields of mindfulness, health promotion, young people’s health, online mental health, and qualitative research. They suggested further references and contributed to project design:

- Dr Craig Hassed, School of Primary Health Care, Monash University
- Dr Belinda Khong, Department of Psychology, Macquarie University
- Dr Narelle Warren, School of Psychology and Psychiatry, Monash University
- Dr Michelle Blanchard, Cooperative Research Centre for Young People, Technology and Well-being, Melbourne
- Professor Nick Allen, Centre for Youth Mental Health, University of Melbourne
• Professor Anthony Jorm, Centre for Youth Mental Health, University of Melbourne
• Professor Andrew Mackinnon, Centre for Youth Mental Health, University of Melbourne
• Professor Helen Christensen, Centre for Mental Health Research, Australian National University
• Professor George Patton, Centre for Adolescent Health, University of Melbourne
• Professor Graham Meadows, School of Psychology and Psychiatry, Monash University
• Professor David Clarke, School of Psychology and Psychiatry, Monash University
• Professor Rob Moodie, The Nossal Institute for Global Health, University of Melbourne
• Professor George Vaillant, Department of Psychiatry, Harvard Medical School
• Professor Jon Kabat-Zinn, Centre for Mindfulness in Medicine, Healthcare and Society, University of Massachusetts Medical School
• Professor Mark Williams, Oxford Mindfulness Centre, Oxford University
• Ms Timothea Goddard, Openground, Sydney*
• Mr John Burchall, state head of training for meditation in the Theravadan Buddhist tradition (in the style advanced by S.N. Goenka), Melbourne

In this chapter sections on qualitative, youth and online MT studies represent systematic reviews based on the above strategy. Other sections aim to provide an overview of the literature based on theoretical, review and key trial publications. These were uncovered using literature searching, advised by experts below or referred to in other publications.

* Ms Goddard is sole practitioner accredited by the UMass Centre for Mindfulness to provide mindfulness teacher training in Australia.
1.2. Part 1: Promoting mental health and well-being in young people

Mental health is increasingly prioritized within the overall health promotion effort.\textsuperscript{30} Young people or transitional age youth, variously defined\textsuperscript{*} as 12 or 14 to 24 or 25, form a critical target group for mental health promotion.\textsuperscript{3} This argument is often made by citing the high incidence of mental disorder in this age group (e.g. more than 75\% of all mental disorders begin before age 25\textsuperscript{1}). Health promotion aims to go beyond dealing with illness however. Broader goals of MHP such as enabling individuals to realize optimal health and cope with adversity\textsuperscript{31} are of particular interest in this project and are discussed in detail below. An overview of the MHP concept is provided before focusing on MHP in young people.

1.2.1. Mental health promotion: An overview

MHP comprises ‘actions that (1) support people to adopt and maintain healthy ways of life and (2) create living conditions and environments that allow or foster health.’\textsuperscript{16p.406} Mental health promotion is an endeavour concerned with ‘collective action for sustained population-wide health improvement.’\textsuperscript{32p.2085} Within this rubric the World Health Organization defines health promotion as ‘action and advocacy to address the full range of potentially modifiable determinants of health’\textsuperscript{17p.1569}

The benchmark Whitehall studies of British civil servants\textsuperscript{33,34} demonstrated a clear relationship between health, especially as measured by mortality, and socioeconomic determinants. A well-replicated finding is that individuals’ place in the societal hierarchy, rather than their absolute income level, explains much of the variance in health status.\textsuperscript{35} Further studies, including in Australia, have demonstrated relationships with other social determinants such as: exposure in early life to high stress and hardship; social exclusion; high stress in the workplace; job insecurity; and low social support.\textsuperscript{36} Race, especially indigenous ethnicity\textsuperscript{37} and gender\textsuperscript{38} are other key modulators of health status.

\textsuperscript{*} See definitions on page 34.
‘Determinants of health’, broadly defined, are not limited to societal parameters, but they also include characteristics of individuals such as health behaviour and lifestyle. Another definition of health promotion describes it as ‘the process of enabling people to increase control over the determinants of health and thereby improve their health. To reach a state of complete physical, mental and social well-being an individual or group must be able to identify and realize aspirations, to satisfy needs and to change or cope with the environment.’

Mental health is intimately connected with physical health and health maintaining behaviours. Ways of thinking and reacting are closely related to a great part of what underlies or exacerbates ill health in wealthy nations. Besides emotional and behavioural disorders, ‘lifestyle diseases’ such as those related to smoking or excessive calorie intake are examples. Poor mental health, in its broadest sense, may also contribute to school and workplace bullying, domestic violence and crime which exert their effects on community health indirectly. Despite this, MHP, as compared with physical health promotion, is a newer and smaller field.

Health promotion and the public health approach have had major successes in related fields such as cardiovascular health and cancer (e.g. the Sunsmart campaign in Australia). MHP, having lagged behind for a number of decades, has gathered momentum recently and is benefiting from the lessons learnt in other areas of medicine.

**Challenges in definition and practice**

A guiding principle of MHP is the WHO definition of health as a ‘complete state of physical, mental and social well-being, not merely the absence of disease or infirmity’. Nonetheless, in academic and clinical discourse the drive towards ‘mental health’ usually signifies eradicating ‘mental illness’. The public’s view of what ‘health’ means is affected by this as illustrated by Canadian research published in 2007: 56% of 1840 participants thought ‘mental health’ meant
‘about’ or ‘exactly’ the same thing as ‘mental illness’.\textsuperscript{46} This is in contrast to ‘physical health’, which evokes images of fitness and vitality.\textsuperscript{47}

The health promotion effort has suffered from the lack of a clear consensus among stake-holders about the nature and breadth of MHP.\textsuperscript{48} For example, doctors in psychiatric specialty training in Australia studied by the author (2010)\textsuperscript{49} had a poor understanding of the MHP concept. This was despite their belief that they had adequate training and knowledge in the area.\textsuperscript{49}

Health promotion is not synonymous with prevention or early intervention:

\begin{quote}
'Health promotion and prevention are necessarily related and overlapping activities. Because the former is concerned with the determinants of health and the latter focuses on the causes of disease, promotion is sometimes used as an umbrella concept covering also the more specific activities of prevention.'\textsuperscript{50,711}
\end{quote}

MHP lies at an even more basic level than universal disease prevention. Just like the latter, its target is often the whole population, but it is concerned with maximizing the totality of well-being or of positive mental health rather than the prevention of a specific disease entity.

Traditionally concerned with alleviation of disease, health professionals have found it difficult to spare the time for preventative activities, even less to improve the health of those who may never get ill.\textsuperscript{43} Social welfare agencies, municipal councils and churches have thus often been at the forefront in MHP.\textsuperscript{51} Examples of activities in such non-health settings are: improving community cohesiveness and reducing isolation via facilitating social activities (e.g. Police and Citizen's Youth Clubs); provision of recreational facilities; and pastoral care aimed at improving coping mechanisms.\textsuperscript{51}

The MHP effort has been hampered by long-standing myths about its efficacy. It is commonly thought, for instance, that though correlations may be shown
between health status and putative determinants in epidemiological studies, interventions do not affect outcomes significantly. This has now been discredited by the wealth of evidence of beneficial effects of MHP activities. It remains true, nonetheless, that effect sizes in many studies are underwhelming. Though participants may report great benefits in qualitative feedback, quantitative data in randomized controlled trials (RCT) are often not compelling. Genuine control conditions may be difficult to devise, randomization and blinding may not be possible or ethical, and the outcome measures used may be geared towards symptom eradication and thus have a low ceiling.

While the RCT is seen as the gold standard in medical and psychological research, other approaches may also be necessary to investigate complex interventions such as those used in MHP. This can improve the ‘ecological validity’ of evaluations and better demonstrate real world effectiveness of strategies vis-à-vis research methods which attempt to show efficacy in controlled conditions. The use of qualitative methods to understand the meaning and process of changes brought about by interventions is particularly helpful.

**Conceptualizing positive mental health and well-being**

In this project helping young people drawn from the community (i.e. a non-clinical population) develop a better way of dealing with their emotions was the key focus. The chosen strategy, MT, aims to enhance the relationship with all experience, not just reduce distress. It was important therefore to understand how positive mental health has been conceptualized as a guide to appropriate quantitative measures and qualitative enquiry (see also ‘2.4. Choice of evaluation strategies’, page 109).

Words and phrases such as ‘well-being’, ‘positive mental health’, ‘flourishing’ and ‘happiness’ are often used in the literature to avoid the ‘absence of disease’ connotations of ‘mental health’. ‘Happiness’ as used here does not simply mean Plato’s ‘hedonic’ concept of greater pleasure than pain. Aristotle’s ‘eudaemonic
happiness' is closer to the aims of MHP. It encapsulates a sense of freedom to fulfil one's potential and live a life which feels meaningful and morally sound. Studying what is 'happiness' is important as a basis for the MHP effort.

The relationship between mental health and illness appears not to represent a linear continuum. Individuals who suffer from a diagnosed mental illness but experience aspects of positive mental health and are ‘flourishing’ (see page 29) may function better than ‘languishing’ persons without a clinical disorder. Research on stress biomarkers (e.g. salivary cortisol, adrenaline and blood pressure) in depression indicates that symptoms of illness and presence of measures of well-being, though related, do not completely overlap. Two separate, intersecting, continua may thus be conceptualized, one of illness symptoms and one of wellness indicators.

Health improvement interventions could be seen as completing a circle: one half is focused on the prevention and treatment of symptoms; the other on the promotion of optimal health. Building resilience, competence, empowerment and supportive environments are critical to this latter effort. They are particularly important in young people who may often feel disempowered or feel at odds with institutions and societal systems designed by adults.

**Why study and aim to improve positive mental health?**

It is not the case that all people who are not mentally ill know naturally how to gain or maintain optimal mental health. As Wilson and Gilbert (2005) elaborate in their ‘theory of affective forecasting’ people are often inaccurate in predicting how much and what kind of happiness events and actions will provide. They are thus often motivated by goals that do not effectively render them happier. Young people may be particularly vulnerable owing to their limited life experience.

Additionally, levels of happiness are influenced, but not entirely determined by, genetic factors. In one estimate based on published research 40% of the factors responsible for individuals' happiness were found to be amenable to intentional cognitive and behavioural change. The rest were dependent on: persistent traits
determined by inborn temperament (e.g. extraversion being favourable and neuroticism unfavourable; 50% of variance); and life circumstances (e.g. employment, social networks, marriage – 10%).66

Changes in circumstances tend to be quickly adapted to, as elaborated in the ‘happiness set point theory’.67 People return to their usual, baseline level of happiness soon after a positive event. This can lead to a circular pattern of pleasure seeking termed the ‘hedonic treadmill’.68 Concerted efforts aimed at modifying recurring behaviour and attitudinal patterns, on the other hand, tend to have more lasting effects on the baseline itself.66

A compelling case for the study of and attempts to promote positive mental health may thus be made.58 This is strengthened by evidence that positive mental health correlates with: lowered prevalence of symptoms of mental and physical disorder; appropriate treatment seeking if disorders are present; improved health maintaining behaviours; lowered limitations on activities of daily living; and better occupational, educational and relationship functioning.69 In addition, data from a British study of 4739 individuals followed for 20 years indicates that any one individual’s level of well-being can have a measurable impact on the well-being of nearby friends, family members and neighbours.70

A variety of operational definitions
Optimal mental health has been discussed as an outcome by academic psychologists for several decades (e.g. Rogers (1961),71 Maslow (1954),72 and Jahoda (1958)73). Recent attempts to operationalize definitions and devise rating scales have centred on emotional, cognitive, functional, social, physical and spiritual domains.74 A brief description of various current conceptualizations of optimal mental health has been provided below.

Well-being
Various authors have used this term to signify a positive sense of mental and physical functioning. The most widely used concepts are those of ‘subjective well-being’23 and ‘psychological well-being’.75 Cloninger’s ‘four dimensional
model' of well-being is also notable as an attempt to integrate various operationalizations in one.18

*Subjective well-being (SWB)* refers to individuals’ assessment of how well they are in themselves. Individuals with high SWB have a preponderance of pleasant over unpleasant affect as well as higher overall and domain-specific satisfaction with life.23 Domains such as satisfaction with work circumstances, relationships and interests are measured. Improvement in SWB has been shown to correlate with enhanced work productivity, better social support, improved social interactions and pro-social behaviour, improvements in immune function, greater longevity and lowered levels of stress.76 A commonly used measurement tool for SWB is the Satisfaction With Life Scale (SWLS, see also Appendix A).77

*Psychological well-being (PWB)* was conceived as an attempt to study the validity of and operational criteria for optimal mental health.75 It describes a state devoid of mental illness in which a person enjoys ‘subjective well-being’ (as in SWB) as well as eudaemonic well-being (e.g. self-acceptance, positive relationships, autonomy and purpose in life).75 Six factors constitute the PWB Scale (PWBS, see also Appendix A)75:

- **Self acceptance**: Possessing a positive attitude towards the self; acknowledging and accepting multiple aspects of the self including good and bad qualities; and feeling positive about the past
- **Positive relations with others**: Having warm, satisfying, trusting relationships with others; being concerned about the welfare of others; capability for strong empathy, affection, and intimacy; and understanding the reciprocity inherent in human relationships
- **Autonomy**: Being self-determining and independent; the ability to resist social pressures to think and act in certain ways; regulating behaviour from within; and evaluating the self by personal standards
- **Environmental mastery**: Having a sense of mastery and competence in managing the environment; controlling a complex array of external activities;
making effective use of surrounding opportunities; and an ability to choose or create contexts suitable to personal needs and values

- **Purpose in life**: Having goals in life and a sense of directedness; feeling there is meaning to life in the present and the past; holding beliefs that give life purpose; and having aims and objectives for living

- **Personal growth**: Having a feeling of continued development; seeing oneself as growing and expanding; being open to new experiences; having a sense of realizing one’s potential; seeing improvements in self and behaviour over time; and changing in ways that reflect more self-knowledge and effectiveness

The six factor model of PWB received initial support from factor analytic and intervention studies. However, studies examining the correlation between biological, psychological and socio-demographic factors have resulted in inconsistent findings.\(^{57}\)

*Cloninger's model of well-being*: Cloninger (2004)\(^{78}\) has proposed a construct that attempts to integrate subjective and psychological well-being with a person’s character. He suggests that ‘a person cannot feel good (as measured by positive emotions and satisfaction with life) without doing good (as measured by maturity of character and virtuous conduct)’.\(^{16p.3}\) The model comprises the following components:

- Preponderance of positive vis-à-vis negative affect (e.g. as measured by the Positive and Negative Affect Scale\(^{79}\) – PANAS, see also Appendix A))
- Life satisfaction (e.g. SWLS\(^{77}\))
- Mature character traits such as self-directedness, cooperativeness and self-transcendence (e.g. as measured by the Temperament and Character Inventory\(^{80}\) – TCI, see also Appendix A)
- Character strengths and virtues esp. hope, compassion and courage (e.g. as measured by the Values in Action Inventory of Strengths\(^{81}\) – VIA-IS, see also Appendix A and page 32)
Flourishing

In Keyes’ (2007)\textsuperscript{82} construct individuals may be located within a continuum from ‘flourishing’ to ‘languishing’. What is required to flourish is conceptualized as:

- **Positive emotions**: Positive affect and satisfaction with life
- **Positive psychological functioning**: Self-acceptance, personal growth, purpose in life, environmental mastery, autonomy and positive relations with others
- **Positive social functioning**: Social acceptance, self-actualization, contribution, coherence and integration

Keyes has devised the Mental Health Continuum-Short Form (MHC-SF) scale which is a composite measure of previously published psychological well-being,\textsuperscript{75} and social well-being\textsuperscript{83} measures as well as scales developed for emotional well-being and psychological functioning for the validation study of the MHC\textsuperscript{84} (see also Appendix A).

**Authentic happiness**

Seligman (2002)\textsuperscript{85} has proposed a tripartite model of happiness, the enhancement of which he sees as the central goal in ‘positive psychology’ (see page 32). Seligman emphasizes the importance of eudaemonic happiness in terms of self-actualization, engagement with life and a sense of meaning. He conceives of happiness as not resulting, in the main, from the pursuit of pleasure but most reliably through the development of individual strengths and virtues.\textsuperscript{85}

Originally, authentic happiness was suggested to comprise: (1) pursuit of the ‘pleasant life’ – activities that create positive emotions; (2) the ‘good life’ – where one’s strengths and virtues are used to engage effectively with circumstances; and (3) the ‘meaningful life’ – where one is driven by and develops a sense of meaning and purpose through employing one’s strengths and virtues.\textsuperscript{85} Recently, the model has been expanded to also include relationships and accomplishment (PERMA).\textsuperscript{86}
Quality of life

The WHO defines quality of life as, ‘an individual’s perception of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards and concerns’\(^{87}\) Early measures of quality of life were focused on how it was related to the presence and severity of illness (termed ‘health related quality of life’) and excluded social determinants of health\(^{88}\). The current construct is based on the balance of a variety of positive and negative factors in domains such as illness symptoms, coping, resilience, life satisfaction, sense of autonomy, housing situation, and social support among others\(^{89}\).

A measure of quality of life in common use internationally is the WHO-QoL scale, which is available in 100 and 26-item versions. It comprises a wide variety of inner (e.g. sense of meaning) and outer (e.g. physical environment) factors\(^{17}\) (see also Appendix A).

Other definitions

A recent Canadian optimal health framework\(^{90}\) uses the term positive mental health to describe:

- **The ability to enjoy life:** Related to genetics, personality and circumstances
- **The capacity to deal with life’s challenges:** Resilience and coping in the face of adversity and the likelihood of growing through these difficulties
- **Emotional well-being:** A prevalence of positive emotions and the ability to regulate emotions
- **Spiritual well-being:** Feeling connected to something larger than oneself and having a sense of meaning and purpose
- **Social connections and a positive relationship with culture, equity, social justice and personal dignity:** Each individual's respect for these elements is seen as a component of mental health; social, political and economic factors that impede their accessibility negatively impact health
The UK Mental Health Foundation (2006) asserts that *good mental health* is indicated by the ability to:

- ‘Develop emotionally, creatively, intellectually and spiritually,
- Initiate, develop and sustain mutually satisfying personal relationships,
- Face problems, resolve them and learn from them,
- Be confident and assertive,
- Be aware of others and empathise with them,
- Use and enjoy solitude,
- Enjoy life and have fun, and
- Laugh, both at ourselves and at the world.’

*Optimal health* is another relevant and concise construct: ‘a dynamic balance of physical, emotional, social, spiritual, and intellectual health’. Here the optimal state is not conceived of as a static place which one has either reached or not but which changes depending on the particular individual and their circumstances.

*How views of optimal mental health can inform effective program evaluation*

What has been presented constitute ways of capturing positive experience or change due to interventions over and above alleviation of what is negative or unwanted. Many (e.g. WHO-QoL or Cloninger’s model) include absence of negative experience to arrive at an overall picture of health. Perhaps of greater interest in an intervention project, where scales measuring negative indicators are included as a matter of course, are those which focus particularly on the positive (e.g. SWB, PWB and MHC). A composite measure informed by the above scales but also by concepts of optimal health focused on the general (rather than clinical) population is the Warwick-Edinburgh Mental Well Being Scale. It is discussed in detail in ‘2.4. Choice of evaluation strategies’, page 109.
Positive psychology: A convergence between psychology and health promotion

‘Positive psychology’ has brought together the scientific study of the attributes, measurement and the enhancement of mental wellness under one umbrella in the past decade.\textsuperscript{25,94,95} Traditional mental health promotion, has roots in medicine and public health. In contrast, positive psychology has grown out of research to determine the role of such factors as positive emotions and character strengths in individual subjects. The stated aims, in relation to positive mental health, are the same however in these two disciplines. Both are concerned with what makes individuals and communities thrive. Positive psychology can be conceived of as a subset of the overall MHP effort. Interventions in the former are commonly, but not always, person-centred. Influencing social determinants through ‘positive institutions’, for instance, is part of the overall aim in positive psychology.\textsuperscript{96} Nonetheless, approaches that target populations and social determinant are more commonly signified by the category ‘MHP’.

Foundational research in positive psychology concerned positive emotions (e.g. joy, interest, contentment and love).\textsuperscript{97} These were shown to ‘broaden and build’ individuals’ coping repertoire through generating new and innovative solutions. In contrast, negative emotions tended to have a narrowing effect (e.g. fear leading to escape).\textsuperscript{97} They have an ‘undoing’ effect on positive emotions that may have lingered after they have served their purpose.\textsuperscript{97} A preponderance of positive emotions in an individual has been shown to predict favourable functional and interpersonal outcomes\textsuperscript{76} while their cultivation can lead to better physical health.\textsuperscript{98}

‘Character strengths and virtues’ is another key area of positive psychology research. Peterson and Seligman (2004)\textsuperscript{81} have compiled a list of 24 such attributes (e.g. optimism, creativity, gratitude and leadership) based on a review of psychological, philosophical and spiritual literature and factor analysis of initial psychometric studies.\textsuperscript{81} Having certain characteristics (e.g. love, hope or curiosity) as signature strengths has been correlated with life satisfaction.\textsuperscript{99}
Learning to recognize and apply one’s strength has been shown to lead to improvements in measures of happiness and lowered depressive symptoms.\textsuperscript{100}

Two other concepts that are noteworthy within this brief overview of positive psychology are ‘flow’ and ‘savouring’. The former is the experience of full engagement in an activity (e.g. that of an artisan in their craft). Flow occurs often when there is a close balance of skills versus challenge. Having access to experiences of flow in daily life has been associated with improved well-being. \textsuperscript{101} ‘Savouring’ involves being attentive to, appreciating, and where possible enhancing the emotions associated with positive experience. This may be done as an anticipatory activity, in the moment and in reminiscence.\textsuperscript{102} The tendency to savour experience has been associated with higher self-esteem and an increase in the prevalence of positive emotions.\textsuperscript{103}

In a meta-analysis of 49 studies (n=4,212) interventions based on positive psychology constructs were found to have an effect size of 0.29 (Pearson’s $r$; between group unless uncontrolled study) on measures of well-being in a mixture of clinical and non-clinical samples.\textsuperscript{66} In the 25 controlled studies focused on depressed patients (n=1,806) an effect size of $r=0.32$ (between group) was found on depressive symptoms.\textsuperscript{66} Thus it appears that small to moderate effects can be expected on both positive and negative attributes of mental health with such interventions.

\textbf{Promotion of positive mental health as a background to this project}

The MHP strategy in this project was to design a program to improve well-being, even if participants do not suffer a specific health problem. This is thus part of a large and growing field. Mindfulness training has been categorized as an intervention within both MHP\textsuperscript{104} and positive psychology\textsuperscript{105} and shown to improve well-being\textsuperscript{106-123} and quality of life.\textsuperscript{124-137} It is discussed in detail below and the rationale for its selection in this project is presented (see ‘1.3. Part 2: Mindfulness training as a way to promote young people’s mental health’, page 47). Appraisal of the breadth of the MHP field also informed both the choice of
outcome measures used and the inclusion of extensive qualitative evaluation (see ’2.4. Choice of evaluation strategies’, page 109).

Having examined MHP in general and before focusing on MT, a survey of the rationale and practice of MHP specific to young people will now be presented.

1.2.2. Mental health promotion and young people

The WHO defines ‘young people’ as aged 15-24. Individuals in this age band are designated as ‘youth’ by the Australian Bureau of Statistics. Much of the data describing young peoples’ mental health is drawn from studies of adolescents. The words ‘youth’ or ‘young people’ are sometimes used to signify adolescents or even children in the literature. In this document both are used interchangeably, but specifically, to refer to those 15-24 years old. ‘Children’ is used to refer to those aged 0-12, ‘adolescents’, 13-17, ‘young adults’, 18-24, ‘adults’ 18-64 and ‘the elderly’, 65 and over.

The burden of mental ill health in young people

Youth mental illness accounts for a significant cost burden on society, estimated at A$10.6bn per annum in Australia. It has long-term implications for the young person and those around them for many more years of life than when illness begins in middle or old age. Examples are: under-engagement with the educational system; unemployment; loss of earnings; poor social adjustment; difficulties in being effective parents; and higher likelihood of substance abuse and associated criminal activity. In 2009, 49% of Australian young people were studying full-time, 31% were working full-time, 2% were engaged in part-time work and study and 19% were not engaged in any occupation. This represents the highest rate of unemployment of any working-age group.

Young people suffer a disproportionately high prevalence of mental disorders. Up to 24% of young people in Australia experience a mental illness in any given year, most commonly anxiety, depression and substance use. In a recent report from the Australian Institute of Health and Welfare (2011) mental health

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* The age band 12-25 was used in this study.
problems accounted for the highest burden of disease in adolescents and young adults. This burden has been estimated at 50% of all disorders. However, only 35% of those affected seek clinical care. Common reasons are: negative views of traditional mental health services; not finding the services user-friendly; and fear of the stigma associated with seeking help.

The burden of ill health and low rates of accessing care are compelling reasons for promoting the mental health of young people. They also form a rationale for: reaching young people before they become ill; designing services and programs with input from young people themselves (see '1.2.4. Engaging young people in program design', page 43); and using innovative approaches to engagement (see '1.2.3. The role of technology', page 41).

Beyond treatment of illness: From early intervention towards promotion

Recently, a focus on early treatment for mentally ill young people has been prioritized in mental health policy in Australia. This is in response to: the significant burden of illness, much of which is untreated; the evidence for a less severe illness course following early symptom improvement; and the potential of long-term cost savings. The focus on ‘early intervention’ has been criticized as: the evidence for long-term effectiveness of such interventions is still emerging; and since they may divert needed resources from treatment of established illness.

Early intervention is said to provide a high health yield for resources expended. Greater changes in quantitative outcome measures often occur when youth health promotion is indicated (i.e. for those who already have mild symptoms) or selective (for those who are at risk, e.g. identified as suffering family dysfunction) rather than universal (for young people of any mental health or risk status). This finding may be influenced by the fact that: (1) the former groups, beginning from a lower base, are more likely to show large

* 12-24 year olds.
improvements in scores; and (2) most outcome measures used are geared towards symptoms, rather than well-being, and thus have a low ceiling.\textsuperscript{150}

Even when scales measuring symptoms have been used, universal strategies have been at times shown to be the most effective. A meta-analysis\textsuperscript{148} of school-based programs aimed at prevention of anxiety found that, overall, universal programs were more likely to be effective than indicated or selective interventions. In all, 81\% of universal intervention trials were effective.\textsuperscript{148} Effect sizes ranged from 0.11 to 1.37 (Cohen’s $d$; between group unless uncontrolled study) on measures of anxiety.\textsuperscript{148} This finding may be due to a lowered sense of stigma or the creation of a health promoting atmosphere in the whole school as compared with targeted strategies where individuals are singled out for intervention.

At a population level the majority of illness occurs in individuals who did not have a full constellation of identifiable risk factors before first presentation.\textsuperscript{44} This is a well-established epidemiological finding, termed the ‘prevention paradox’.\textsuperscript{151} Thus an intervention with a small effect size, offered to a large group, may lead to more cases prevented than one which is very effective but applicable only to a selected sample.\textsuperscript{43}

Besides prevention of overt disorders, promotion activities may also improve sub-clinical distress and difficulties. Up to 75\% of the social and occupational impairment due to depressive and anxiety symptoms occurs in individuals who score in the \textit{sub-clinical, non-case}, range in rating scales.\textsuperscript{43} In young people, such symptoms are associated with: poor self-esteem; academic under-achievement; impaired coping skills; and reduced or problematic social interactions.\textsuperscript{152}

Cost-effectiveness of universal strategies is often questioned,\textsuperscript{153} even though looking through the health economic lens may not provide the most accurate view of such interventions’ worth.\textsuperscript{154} If an economic lens \textit{is} used then the wider economic benefits of such interventions would need to be measured. Accumulating data supports cost savings in terms of health service use.\textsuperscript{155}
Longer-term, broader effects with diffuse impact are more difficult to measure (e.g. improved prospects of employment and ability to act as better parents).\textsuperscript{156}

Strategies aimed at improving the mental health of all young people are thus an important complementary strategy to the current trend towards early intervention with those who are ill.\textsuperscript{6} Not only can they help in reducing the burden of illness and improving functioning but they also give importance to positive mental health with its own broad health implications (see 'Why study and aim to improve positive mental health?', page 25). Such arguments notwithstanding, most programs to date, both within and outside the health sector, have been targeted to a sub-sample of the population with specific clinical disorders or psychosocial disadvantage.

**Settings for youth health promotion**

It has been argued that school and other educational institutions are ideal settings for and should lead the delivery of MHP to young people.\textsuperscript{47,52,157} The UN Convention on the Rights of the Child highlights the breadth of outcomes for which education is necessary:

\begin{quote}
'The education of the child shall be directed to... the preparation of the child for a responsible life in a free society, in the spirit of understanding, peace, tolerance, equality of the sexes, and friendship amongst all peoples.'\textsuperscript{158}p.9
\end{quote}

The growth of ‘social and emotional learning’ programs (see page 39) is an attempt to address these priorities. The WHO Global School Health Initiative aims to use physical and human resources in schools as tools for health promotion.\textsuperscript{159} The Beyond Blue Schools Initiative, is an Australian example focused specifically on improving mental health.\textsuperscript{160} Critical to such approaches is design of school curricula and environments that are health promoting (e.g. in the sense of fostering individual identity balanced with social connectedness).\textsuperscript{52} A whole school approach where teachers and parents are involved appears to work best.\textsuperscript{52}
Crowded curricula and teachers’ limited expertise often make a whole school approach difficult. Therefore, where available, mental health professionals who have an ongoing affiliation with educational settings (e.g. school psychologists) have a key role. They would ideally engage in coordination and delivery of promotion programs rather than purely focus on treatment. Such professionals are, however, often employed on a part-time capacity if at all. Also, limited resources mean that often only the most distressed students fall within their remit.

A majority of social and emotional learning is indeed delivered within the school setting (73% in the meta-analysis by Durlack and Wells (1997)). However, these have often resulted from collaborations between health professionals, academic institutions and schools.

**Key targets in health promotion for young people**

Fostering positive peer relationships, improving family functioning and healthy school environments are likely to have a considerable effect on mental health. Social determinants, particularly family discord, are also important targets. Training individual skills is a critical and complementary approach. It has been shown to provide additional benefits to whole school- or community-focused programs. It is often assumed that young people will gain social and emotional skills ‘naturally’ and that specific training is not necessary. However, the high prevalence of social and emotional difficulties in this age group argues against such an assumption.

A key developmental challenge in young people is self regulation of emotions. Adolescents with poor emotional control are twice as likely to develop depression as they grow into young adulthood. Emotional control appears to be the key mediator accounting for the rise in emotional difficulties or diagnosable mental disorders correlated with pubertal stage in adolescents.
Impaired executive functioning* may in part explain this phenomenon.\textsuperscript{166} Difficulties with peer relationships and self-esteem may be secondary phenomena which are then associated with poor socio-occupational adjustment, conduct disorders and depressive illness.\textsuperscript{6}

Improved emotional control is associated with better social skills,\textsuperscript{167} a more positive appraisal of situations in day-to-day life,\textsuperscript{168} and enhanced decision making capacity, particularly in relation to risk behaviour.\textsuperscript{169} Emotion regulation is given a central importance in MT,\textsuperscript{14} the chosen strategy in this project. The two constructs in fact have a great degree of overlap.\textsuperscript{14} This is discussed in detail, along with the evidence of efficacy of MT in this population in ‘1.3. Part 2: Mindfulness training as a way to promote young people’s mental health’ (page 47). It is important to first examine the breadth of approaches however, to put MT in context.

An increasingly proactive approach to youth MHP, going beyond symptom reduction to encompass positive emotional development, has been taken in recent decades.\textsuperscript{143} The Collaborative to Advance Social and Emotional Learning (CASEL)\textsuperscript{27} have attempted to delineate, as much as possible based on available evidence, attributes that such programs should aim to foster:

- Awareness of oneself and others with particular reference to the ability to regulate emotions
- Decision making capacity
- Positive attitudes and values which are pro-social
- Social interaction skills

Most social and emotional learning (SEL) programs have been school-based, owing to factors discussed earlier. Recently a meta-analysis\textsuperscript{170} has been conducted of 213 such programs involving 270,034 children from kindergarten

* This set of cognitive processes involve some degree of conscious control of thinking that allows capacities such as behaviour inhibition and planning for goal-directed behaviour.
to high school. School performance compared to controls was found to have improved by 11% in the intervention group. Improvements occurred in attitudes towards the self, other children, and the school in general. Students were less likely to exhibit conduct and internalising problems and more likely to engage in pro-social behaviour. When programs were delivered by non-school personnel, as compared with teachers, mean effect sizes for improvement in SEL skills were greater (Cohen's $d=0.87$, $p<0.05$ vs. $0.62$, $p<0.05$). Gains in academic performance however, were greater when programs were teacher-led ($d=0.34$, $p<0.05$ vs. $d=0.12$, not statistically significant (NS)).

The PATHS (Promoting Alternative THinking Strategies) program is a well-established example of a teacher-led program for pre and early school children. It is based on the affective-behavioural-cognitive-dynamic model of development. This model proposes that cognitive and linguistic abilities are much slower to develop than emotional maturation. It thus aims to help children enhance cognitive processing and verbal strategies for dealing with emotional situations. Improvement in knowledge of emotions and social competence has been demonstrated in an RCT.

The ICPS (I Can Problem Solve) program is based on a suite of interpersonal cognitive problem solving strategies developed for pre and early school children. A recent trial of ICPS has demonstrated benefits in reducing introverted and improving pro-social behaviours (including reduced aggression) in 5 and 6 year old children compared with a non-intervention control group.

Although SEL programs are more common in high income countries, some advances in lower and middle income countries have occurred in this area in recent years. The Youth Life Enrichment Program in the Phillipines is one example. Self-awareness, positive relationships, communication and leadership skills are taught. The program has been in operation since 1975, though no formal quantitative evaluation has been published.
Mindfulness training is one form of SEL.\textsuperscript{176,177} It fulfils the CASEL criteria well and is a particularly attractive way to promote youth mental health for a variety of reasons as discussed in detail below (see page 64).

\subsection*{1.2.3. The role of technology}

There is a surge of interest in innovative modes of service delivery considering the relatively low uptake of face to face care by young people.\textsuperscript{2} Concerning mental health promotion specifically, a recent Australian state government discussion paper (2008)\textsuperscript{178} has emphasized the importance of using information technology.

Young people increasingly see the Internet not only as a portal to information or entertainment but also as yet another setting in which they live their lives.\textsuperscript{9,10} In this context, delivery of mental health interventions via the Internet can be both relatively cheap and easily accessible.\textsuperscript{179} Besides provision of mental health information or treatment, the Internet can be used to build individual skills of interest to the mental health promotion effort.\textsuperscript{180}

Young people commonly cite the following as barriers to seeking face to face care: fear of stigmatization; a lack of awareness of available resources; unavailability of suitable practitioners; a fear that clinicians may be unlikely to help; a preference to manage problems without the involvement of professionals (i.e. alone or with friends and family) driven by a sense that their problems are too personal to share; and fears about confidentiality or loss of privacy.\textsuperscript{181}

Young people report that using the Internet to obtain information and support breaks down at least some of these barriers, such as stigma and loss of privacy.\textsuperscript{182} The majority (74\%) of American college students surveyed in 2002-2003 reported having obtained health information from the Internet.\textsuperscript{183} This figure is likely to be higher now with increasing availability of Internet access and authoritative online health information. In Australia, a survey of over 8,000 young people found that, after family and friends, the Internet was the most likely source of health information.\textsuperscript{184} It was preferred to doctors and health
agencies including those that provide telephone helpline support. Following a brief school presentation regarding an Australian youth mental health promotion website, Reachout.com (see page 107), 50% of those later surveyed visited the site. Two thirds said that they would do so for help if they or a friend was suffering emotional difficulties in the future.

There is a well-established body of evidence demonstrating the efficacy of Internet-based psychological interventions, though most research has focused on adults. Spek et al. (2007) conducted a meta-analysis of 12 randomized controlled trials of online cognitive behaviour therapy interventions for depressive and anxiety disorders (n=2334). They calculated an effect size (between group) of $d=0.26$ for unguided and 1 for guided online intervention. While unguided interventions are less effective (seven persons needed to be treated to reduce symptoms beyond threshold for diagnosis in one) their low relative cost allows for much wider dissemination.

Local examples of e-health programs are www.moodgym.anu.edu.au and www.crufadclinic.org (formerly climategp.tv) which use online CBT. Positive psychology interventions (such as inculcating a sense of gratitude or hope) have also been successfully delivered via the Internet.

**Limitations of online psychological interventions**

The loss of face-to-face contact may lower the efficacy of a treatment or health education encounter. This is certainly the case for unguided interventions. Additionally there is a higher risk of the young person ceasing to engage as an emotional relationship with a professional has not been made. Attrition rates in online psychological interventions are generally higher than those in face to face trials. Dropout rates of up to 90% have been reported.

Appropriate computing facilities and an Internet connection may not be available to all young people. This is, at least in developed nations, an uncommon limitation.

*‘Guided’ signifies interventions where a program facilitator regularly contacted participant encouraging their progress but did not provide actual therapy.*
problem except where severe psychosocial disadvantage is present. In a 2008 study in Australia 95.1% of young people had internet access either at home or through community (e.g., public library) or educational facilities.

Privacy of client information and secure storage and transmission of documents may be more difficult to ensure online vis-à-vis when written records are used. This is particularly relevant to young people who often cite fears of breach of privacy as a barrier to seeking care in any setting.

The possibility of being a victim of cyber-bullying often concerns parents more than young people themselves. Though it may not be a direct barrier for young people, it is a genuine risk. A number of well-publicized youth suicides have been linked to cyber-bullying and at times led to criminal prosecution of perpetrators. It behoves service providers to ensure any forum where the – often emotionally vulnerable – users can communicate with each other is strictly moderated.

Online mental health information or therapy programs may trigger a critical mental state which may then not be appropriately responded to. It is important to provide and highlight clear information about emergency support (e.g., suicide prevention telephone helpline; how to access local face to face mental health services). Additionally, internet interventions should be clear about their limits and encourage young people to seek face to face care early in the treatment course if increased distress occurs.

Overall it may be best to conceive of online program delivery as an adjunctive or parallel activity to face to face intervention, rather than a replacement. In this way the benefits of the traditional approach are not lost while the potential of the new is exploited.

1.2.4. Engaging young people in program design

Health promotion is more effective when the population of interest is engaged in its planning and implementation. This is particularly so where young people
are concerned. Professionals are faced not only with the challenge to make programs consumer-friendly, but also youth-friendly.

There is a well-established body of adult participatory research concerning a number of marginalized groups and in health promotion generally. However until recently, young people have been involved in research as participants only. They are, as has increasingly been recognized in health promotion, a unique group facing significant developmental challenges. A participatory methodology respects this uniqueness. Its use to optimize MHP activities in this population has thus grown considerably in recent decades.

Formative feedback has been an integral part of program design in education since the 1960s. Its use in health promotion has been a later development, especially where young people are concerned. Empirical evidence that obtaining and implementing feedback leads to improvements in program outcomes is emerging. There is currently a strong drive to involve young people from the very earliest stages of intervention development.

There is evidence that when young people are involved in the design of an intervention the resulting product is more user-friendly and more effective. Moreover, young people involved at the design stage may also gain a sense of contribution or empowerment and learn new skills.

Most commonly young people's involvement occurs within the bounds of an adult agenda. This constitutes a diluted version of true youth participation where young people themselves decide on the agenda. This latter ideal may be achieved by: raising awareness among young people about the importance of research; inviting them as co-researchers on projects; integrating research in school curricula; and by training established researchers in working with and including young people. Additionally it is important that scientific publications do not simply present outcomes of programs but, where participatory methodology was used, detail the design process so as to aid other researchers in the field.
Key principles of participatory research with young people as elaborated by de Kort (1999)\textsuperscript{208} are: (1) maximizing control by participants over developing projects; (2) ensuring tangible benefits to young people; (3) aiming for an inclusive, equitable approach that respects the voices of all participants; and (4) creating a challenging and interactive process. In addition, Australian participatory research with young people has demonstrated the importance of: (1) meaning (i.e. a sense of contributing to something larger than oneself); (2) control; and (3) connectedness.\textsuperscript{209}

Kahane and Rapoport (1997)\textsuperscript{210} have developed a ‘code of informality’ which, applied to study design, creates a sense of authenticity for participants. Authenticity is seen as the sine qua non for young people to feel engaged in the research process. The key thrust of the ‘code’ is respect for individuals’ different senses of identity, preferences and contribution styles. It is recommended that as much as possible, programs are developed bottom-up (i.e. young people are encouraged to initiate and manage the process from the outset). Group interaction and facing conflicts that may thus arise are to be encouraged. The voluntary nature of contributions and the freedom to change the level of involvement should be iteratively emphasized.\textsuperscript{210}

While maximizing participant input is critical, clearly a balance must be struck with prior, evidence-based knowledge that researchers may have. As discussed earlier (see ‘Theory of affective forecasting’ on page 25) potential participants may mistakenly identify aspects of a program as beneficial when in fact they are unlikely to be so. This balance has been discussed in detail in ‘6.1.1. Giving consultees’ voices due regard’, page 202.

**Online delivery and the participatory approach**

When computerized education and training programs first became available formative feedback and consumer consultation had already gained an established place in educational program design. Perhaps for this reason,
actively seeking input from potential or current users has been a part of online program design from early in its history.\footnote{211}

According to the Technology Acceptance Model\footnote{212} both the perceived usefulness and ease of use of a system or program are likely to influence users’ engagement. This model has been revised in recent years to include perceived enjoyment as an intrinsic motivational influence.\footnote{213} There is evidence that usefulness and enjoyment may explain much of the variance in participant engagement.\footnote{214} All the above characteristics are best ensured through input from potential participants. Online health promotion for young people is both uniquely suited to and stands to gain significantly from a participatory research methodology.\footnote{215}

The user-developer relationship has become even more close with the development of Web 2.0. Here Internet content is increasingly created by end-users themselves.\footnote{216} ‘Computer-based learning’, which is restricted to information dissemination, has been superseded by ‘computer-supported collaborative learning’, sometimes referred to as ‘e-learning 2.0’.\footnote{217} In this paradigm knowledge is seen as co-created with learners. There is a significant focus also on encouraging interaction between them (e.g. through blogs, Internet forums, podcasts and sharing of images). This provides a unique opportunity for qualitative research. Continuously generated user feedback is a rich source of naturally occurring data which may be coded, analysed and incorporated into revisions of program design.\footnote{218}

\subsection*{1.2.5. Summary of Part 1: Mental health promotion and young people}

The importance of promoting mental health in all young people, regardless of clinical status, has been increasingly recognized in recent decades. MHP is an important complement to treatment of clinical disorders. Programs would ideally be available not only in a face to face but also online format so as to best meet young people’s needs and match how they conduct their lives. Engagement and likely benefits of MHP are greatly enhanced when a participatory approach to program design is used.
Training in mindfulness may be an effective way to meet some of the key goals of MHP in young people such as improved emotion regulation. Mindfulness and MT are described in detail below. It is aimed to clarify the rationale for MT in young people and set the stage for the program design and evaluation activities that constituted this project.

1.3. Part 2: Mindfulness training as a way to promote young people’s mental health

Being mindful involves non-judgmental awareness of moment to moment experience. Mindfulness training aims to make a mindful stance more prevalent in day-to-day life through discussions about and instructions in a variety of meditation methods (see ‘1.3.2. What is mindfulness?’, page 49). Two separate, yet related, lines of evidence suggest that mindfulness training has significant potential to promote mental health. These are best developed in adults but there is a growing body of research in children, adolescents and young adults also.

Firstly, higher scores on measures of mindfulness* have been positively correlated with scores on measures of constructs already known to underlie optimal mental health: psychological well-being; satisfaction with life; positive affect; and emotion regulation ability (see ‘Correlating mindfulness and mental health’, page 61). The latter construct is of particular relevance to young people as will be discussed below (‘1.3.3. Mindfulness and young people’, page 64).

Secondly, the intervention evidence indicates that MT leads to improvement in: improved emotion regulation; well-being; and quality of life; and reductions in measures of mental ill health such as depressive and anxiety symptoms.

In this section, an overall rationale for using MT as an MHP strategy is presented first followed by: a detailed description of what mindfulness and MT involve; see ‘2.4. Choice of evaluation strategies’ (page 109) for a discussion of the controversies surrounding the validity of psychometric measures of mindfulness.
their relevance to young people; qualitative and quantitative research evidence; and the use of the Internet in MT. Emphasis has been placed on qualitative research consistent with the primary orientation of this project: to arrive at a detailed understanding of young people’s views and experience about mindfulness and the optimal way to deliver MT.

1.3.1. Why mindfulness?

Research and clinical practice in MT is in a phase of exponential growth (e.g. 4, 14, 69 and 372 articles where ‘mindfulness’ appeared in the title were indexed in MEDLINE in each 5 year period from 1991 to 2010). A rapidly expanding body of empirical evidence in the past three decades has demonstrated a clear association between mindfulness meditation practice and mental and physical health. Also, with the development of operational criteria and assessment scales, the underlying psychological mechanisms underpinning these benefits are being elaborated.

Beginning over 30 years ago, initial studies were focused on populations suffering a wide range of clinical problems such as chronic pain, cancer, palliative care patients, coronary artery disease, diabetes, traumatic brain injury, psoriasis, depression, anxiety, substance abuse, post-traumatic stress, and eating disorders, among others. Several systematic reviews and meta-analyses have been published in recent years collating the evidence pertaining to MT in patients with physical and psychiatric disorders.

In the past 20 years MT has been increasingly recognized as a powerful tool for MHP in all people, regardless of clinical status. MT affects fundamental aspects of cognitive and emotional functioning such as: awareness and regulation of emotions; an ability to observe one’s thought processes with some degree of objectivity; familiarity with physical sensations and states (e.g. fatigue) as generating, reflecting or maintaining emotions and cognitions; and an enhanced ability to influence automatic cognitive and behavioural responses to experiences and emotions. It is, as such, of benefit to individuals with or
without overt distress or symptoms. A recent meta-analysis by Chiesa and Serreti (2009) attests to the benefits of mindfulness training in non-clinical participants (described on page 85).

MT does not appear to be associated with adverse events, except when individuals with a fragile mental state participate in an extended silent retreat. Applicants may nonetheless be excluded from weekly group MT programs if their mental state is deemed to interfere with group process or the ability to learn skills (e.g. active psychotic symptoms, severe substance dependence or significant cognitive impairment).

The theoretical and intervention literature supporting the benefits of MT will now be discussed in detail. The rationale for choosing MT specifically for young people has been discussed on page 63.

1.3.2. What is mindfulness?

The word ‘mindfulness’ has been used in the literature to refer to: (1) a theoretical construct; (2) the state of being mindful; or (3) the practices that foster this particular way of being (e.g. meditation as taught in MT). Jon Kabat-Zinn the figure most influential in bringing MT to the health care setting defines mindfulness as ‘the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment’.

Thoughts, judgments and emotional reactions about experience can seem inseparable from it. This may be all the more so when the experience is unpleasant, and can create an additional, unnecessary, layer of distress. Say for instance a young person injures their hamstrings in the long jump at a school athletics meet. In and of themselves the physical sensations over the next few days may be quite bearable and not cause impairment. She can continue to walk, attend school and socialize. What may be more troublesome are associated feelings (e.g. disappointment or fear) and thoughts (e.g. 'I’ll be dropped from the athletics team. The team won't want to hang out with me anymore. Athletics is all
I have...'). Thus her suffering is exaggerated greatly and she may indeed function less well as a result. A mindful stance involves: noticing when one is caught up in reactions to experience or thoughts about the future or the past; recognizing whether these are helpful or not; and developing the ability to disengage from them if desired.

The application of this seemingly simple idea in health promotion over the past 30 years has been heavily influenced by Buddhist philosophy. However, mindfulness in various guises has been advocated as a path to greater well-being in a broad range of Eastern and Western spiritual (e.g. Christianity, Judaism, and Islam) and philosophical traditions (e.g. Heidegger, Schopenhauer and Wittgenstein). Taken together with the extensive empirical evidence now available, this culture-transcending historical recognition of the benefits of mindfulness, adds to the argument for the utility of MT for achieving optimal mental health.

In the past 50 years the most compelling body of empirical evidence for psychological treatment, including in young people, has pertained to CBT. Here symptoms are challenged and actively extinguished. The recent popularity of MT reflects and extends the recognition that detailed awareness and acceptance of symptoms may have a transformative role in and of itself.

Awareness allows one to distinguish the relative contribution to unpleasantness of the sensory experience of a symptom (e.g. pain) from thoughts about it (e.g. ‘I’m not going to be able to play sport anymore’) or emotions triggered by it (e.g. fear). Acceptance is used here in the sense of not creating unnecessary distress and distraction by fighting the fact that something unwanted has happened (e.g. ‘Why me?’). It is not passivity or ‘giving up’ in the face of difficulties. Both general medical and psychiatric patients report feeling relieved, following MT, to find that letting go of reactions to their symptoms makes these more tolerable. Psychological strategies that emphasize these elements have been referred to as ‘third wave’ approaches, as distinct from purely behaviourist and cognitive behavioural methods.
Interestingly, mindfulness has been proposed as a common factor across all modalities of psychotherapy.\textsuperscript{256} This is both in the attitude that the therapist should ideally bring to the therapeutic encounter but also as a way of relating to experience that the patient is, often passively, inculcated with.\textsuperscript{256} At least part of the aim in most psychotherapeutic interventions is to enhance an individual’s ability to: appraise the reality of their situation clearly; respond to it as it truly occurs; and be less burdened by unnecessary automatic and often negative cognitive processing.\textsuperscript{256} These aims are addressed directly in MT.\textsuperscript{257} Discussing well-being, Cloninger (2008)\textsuperscript{18} sees self-awareness as essential to allow us to ‘let go of struggles, work in the service of others and grow in the awareness of our inseparable connection from one another and the world.’\textsuperscript{18p.6}

As detailed below, mindfulness concerns fundamental processes of internal and external experience such as attention to and attitude regarding perceptions.\textsuperscript{11,105} It may thus be seen as a foundational, ‘bottom of the pyramid’ mental and emotional skill, useful as a basis for other therapeutic\textsuperscript{258} and educational\textsuperscript{259} interventions.

**Characteristics of a mindful stance**

The definition above captures the tripartite model of intention, attention and attitude elaborated by Shapiro et al. (2006).\textsuperscript{219} Intention refers to two features: the underlying motivation or purpose behind practising meditation; and the purposefulness of the way attention and attitude are directed from moment to moment. Mindful attention is ideally focused on the present moment. Both stability (i.e. to stay on one object such as the breath) and flexibility (e.g. to shift between objects or from a broad to a single focus) of attention are cultivated. Attitude is one of ‘non-judgmental’ curiosity: seeing the reality of experience for what it is without becoming entangled in cognitive reactions towards it. Another attitudinal element is one of ‘non-striving’. The practitioner aims not to be rigidly attached to being a ‘successful meditator’ (e.g. being able to stay with the breath for any certain period of time). These three components act simultaneously and interdependently.
Information is available to awareness through the five physical senses and the ‘sense’ of one’s inner thoughts and feelings. Commonly in daily life the greater part of one’s attentional field is occupied by thoughts. Attention is paid to the physical senses only to the degree that is necessary for safe functioning. For example a young person may be driving to university to attend an end of semester examination. She is worried about the exam and her mind continuously generates and tries to answer potential questions. She is passively aware enough of sensory inputs to remain on the road.

In day-to-day life, there is often little awareness of the process of how one’s attention is moving from object to object. One is instead pre-occupied with the content or objects of attention. Mindfulness involves an intentional awareness of where one’s attention is directed. One remembers to be aware of awareness itself. Without elaborating this verbally in the mind, in effect one is asking the question, ‘What am I aware of right now?’ The ruminative thought or worry then instantly falls into perspective as one of the many streams of ‘sense’ data.

Say now the university student above is being mindful as she drives. She then remembers, as often as she can, to be aware of the range of inner and outer experiences as they unfold. At one moment she may notice the colour of the leaves of the trees lining the street. She knows that, that is where her mind is. At another she may catch herself worrying about not having studied enough. She notices this worry as yet another object that has attracted her attention. She is now not entirely pre-occupied by her worry, but is able to observe it occurring.

This faculty of meta-awareness allows for attention to both the object of attention (e.g. the worry), and the process of attending (i.e. where one’s mind is at each moment). As thoughts and feelings arise they may be seen as just another object of awareness. One is thus able to give thoughts and feelings their due weight, namely as ephemeral phenomena that do not in and of themselves define one or need occupy one entirely.
Mindfulness practice can thus help individuals to notice and avoid becoming entangled in unhelpful thoughts and emotions. Noticing what is going on in the mind allows a choice as to whether to engage with or let go of what one sees. If a certain thought is noted, for instance, and considered worthy of further attention it can be allowed elaboration. Thinking can become more of an active choice, rather than an experience of being caught up in thoughts.

Returning to the example of the university student, she may realize her mind is caught up in the thought, ‘I know I haven’t studied enough’. This awareness sets the stage for seeing the thought for what it is: unnecessary and unhelpful – she is about to arrive at the exam and has no opportunity for further study; based on judgments that may not be accurate – how much is ‘enough’?; and excessively categorical – does she really ‘know’? Unlike in a CBT approach she does not intellectually argue with or try to refute the thought. Clear awareness of what the mind is doing is enough to allow the thought to loosen its hold. Thinking about this thought, even to refute it, can easily have her become caught up in thoughts again and removed from awareness of her present experience.

With practice, negative emotional states and their associated thoughts are noticed earlier. Unnecessary emotion-driven cognitive elaboration is then reduced. A common example is, ‘Why do I worry so much?’ Inherent in this statement are value judgments about oneself and how much worry is reasonable. Arriving in adolescence suddenly means there is more to worry about, from sexual development to academic pressures of the final years of school. This is combined with an intense sensitivity to how one compares with peers. The ‘I’ and the ‘much’ exacerbate the underlying sense of anxiety. The ‘why’ sets up an unanswerable cognitive loop that can further worsen the triggering emotional state. Mindfulness allows one to notice and let go of such a thought. Being thus aware of emotions and choosing what the mind does in response greatly strengthens an individuals’ ability to regulate emotions.
**Mindfulness, meditation and mindfulness training**

The capacity and tendency to be mindful is an inherent part of day-to-day life and tends to grow with maturation. MT enhances rather than creates this tendency. The opposite tendency, of being caught up in ruminative mental content, is also an inherent part of most people’s lives. It takes a significant amount of commitment, practice and guidance for mindfulness to be cultivated as the predominant mode of being.

A person undertaking MT sees making mindfulness more prevalent in daily life as an aspiration. She recognizes that she will still most often not be in touch with present experience. She avoids creating unnecessary tension by eschewing self-blame about her mind wandering. Such blame and tension subvert the cultivation of an accepting attitude to whatever is experienced at each moment: being in this case an instance of noticing that one has reacted automatically.

Instruction in and discussion about two groups of practices comprise MT: (1) various forms of ‘formal’ mindfulness meditation (e.g. sitting with the eyes closed, while continually re-orienting one’s attention to one’s breathing; detailed awareness of movements during walking meditation or yoga); and (2) ‘informal’ practice – cultivating the habit to pay intentional attention to the sensory data available in each present moment while going about one’s daily business (e.g. as a young person types a text message she has some awareness of how she is holding her body).

Various strands of these practices have been formally used as, or have influenced development of, therapies in Western medicine in the 20th century. This was particularly so following the exposure of the military medical staff and civilian Peace Corps* to Eastern healing practices during the 1960s and 1970s.

Meditation can be divided into two broad categories:

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*A foreign aid volunteer organization established in 1961 and operated by the US government.
• **Concentrative** meditation (e.g. as emphasized in ‘transcendental meditation’\(^{261}\)) is aimed purely at cultivating focused attention on a single object (such as a mantra) to the exclusion of all others. The practitioner aims to be fully absorbed in the object. A by-product of such meditation can be states of very intense relaxation.

• **Mindfulness** meditation, while inclusive of attentional/concentration training, differs from concentration/relaxation-focused meditation since it: (1) emphasizes the attitude with which one is aware (i.e. of non-judgment); (2) encourages practitioners to remain aware of whatever experience naturally arises – expending attentional resources on creating an object of awareness (e.g. a mantra or visualisation) are generally discouraged; (3) uses an object such as the breath to generate *stability*, rather than absorption, of attention – so that mental processes can be observed; and (4) has broader aims, beyond concentration – ultimately geared towards greater insight into ‘how one’s world and self are constructed and inter-related’\(^{262}\).

Paying attention to the physical sensations produced when stretching may be used as a form of meditation in MT. However, the over-arching philosophy of MT differs from, and is less culture-bound than, yoga. Also, while relaxation may occur as a side effect of MT, it differs from ‘relaxation training’. The intention in MT is not to relax but to develop non-judgmental awareness of any inner state that happens to be present. During some meditation sittings this may be one of intense agitation.

Teaching meditation in Buddhism is centred on: (1) guided meditation; (2) discussion of themes that arise within novice practitioners’ experience; (3) sharing of the teacher’s own meditation experiences as a guide to novices; and (4) elaboration of mindfulness principles as applicable to day-to-day life. This method acts as a super-structure for modern MT, which in addition often includes:\(^{262}\)
• **Mindful movement and stretching**: Postures based on yoga poses are used. As in some schools of yoga practice the key aim in adopting various postures is to sharpen body awareness rather than gain greater flexibility or strength.

• **'Mindful enquiry'**: The teacher embodies a mindful stance by cultivating and expressing a deep curiosity about each participant’s experience. Rather than providing advice regarding difficulties, the participant is encouraged to notice patterns of thinking and behaviour. Understanding of and solution to their difficulties are given room to arise within the student’s mind. While in MT this is conducted in front of the group it is not a group discussion per se. It is held as an exchange between the teacher and each student. Other group members may be asked to reflect on related experiences, but are discouraged from trying to solve the student’s problems for them.

• **Recorded meditation instructions**: These guide meditation practice between sessions.

• **Formal presentations**: These are informed by modern cognitive psychology and neuroscience. Examples are modules on the cognitive processes that contribute to mood disturbance or the physiology of stress.

The most important ways in which participants in an MT group learn mindfulness are: (1) through their own practice; (2) by hearing about others’ experiences; and (3) through being exposed to how the teacher embodies a mindful stance in the way that the session is conducted and questions are dealt with. The teacher does not try to fix or change painful emotions that participants may express. She encourages greater awareness, rather than thinking about these. She may for instance guide a participant to notice and maintain attention on any body sensations associated with the emotion.

**Common mindfulness training programs in psychology and medicine**

**Mindfulness Based Stress Reduction (MBSR)** is the most commonly studied MT program. It was developed in 1979 at the University of Massachusetts (UMass) Medical Centre by Jon Kabat-Zinn. It was aimed at chronically ill general medical patients in whom possibilities for physical treatment had been exhausted. MBSR involves eight weekly 2.5-3.5 hour sessions and a 7.5 hour
weekend session. Sessions involve all components just outlined with an educational rather than therapeutic approach. It is usually delivered by one facilitator to groups of 10-30 participants. There is a requirement for home practice of various forms of meditation and other exercises for 45-60 minutes per day supported by a workbook and CD's.

A number of other Mindfulness Based Interventions (MBI) have been modelled on MBSR, notably Mindfulness Based Cognitive Therapy (MBCT). This program has been developed specifically to reduce the risk of relapse in depression. It is similar in structure and content to MBSR but does not include a weekend session. The cognitive model of depression and recent findings regarding how low mood can trigger ruminative spirals that trigger relapse are also presented.

Other examples of MBIs that follow the approach in MBSR are Mindfulness Based Relapse Prevention (MBRP) for substance use disorders, Mindfulness Based Eating Awareness Training (MBEAT) for eating disorders, Mindfulness Based Art Therapy (MBAT), and Mindfulness Based Cancer Recovery (MBCR).

The Stress Release Program (SRP) had been developed independently and used in Australia for the past 20 years in higher education and the general public. It has been internationally recognized as a pioneer in bringing MT to university students. The program involves six weekly sessions with 5-15 participants and one facilitator. Each session is one and a half to two hours long and includes a mixture of guided meditation, didactic teaching from the facilitator and mindful enquiry regarding formal and informal meditation experiences. Mindful movement is not included. Homework comprises 10-20 minutes of sitting meditation practice and various ways of bringing mindfulness into daily activities (see also ‘Description of the Stress Release Program’, page 127).

The SRP was the cornerstone of a mindfulness-based health enhancement program for medical students which had been part of the core mandatory
curriculum at Monash University since 2001. The effectiveness of this program was investigated in an uncontrolled study of 148 students. A comparable control group could not be included as the program was already offered to all students. Outcome data were collected at the beginning and towards the end of a semester. Statistically significant improvements were shown in the psychological subscale of the WHO Quality of Life instrument (within group effect size of \(d=0.18\)) and on the depression, hostility and global severity index subscales of the Hopkins Symptom Checklist (SCL-90).\(^{268}\) This is in sharp contrast to historical data that indicate increases in scores on outcome measures of distress from beginning to end of university semesters. This effect is thought to be due to examinations being generally held in the latter period.\(^{269}\)

MBIs are sometimes grouped together with Dialectical Behaviour Therapy (DBT)\(^{270}\) and Acceptance and Commitment Therapy (ACT)\(^{271}\) as ‘third wave therapies’.\(^{255}\) DBT has been specifically developed for patients with borderline personality disorder. It has been shown to reduce self-harming behaviour and overall psychopathology in this group.\(^{272}\) The program is held over several months and includes extensive telephone and individual therapeutic support tailored specifically to borderline personality disorder. ACT has been derived from ‘relational frame theory’.\(^{255}\) It has been shown to be of benefit in a number of psychiatric disorders, notably depression and anxiety.\(^{273}\) Patients are encouraged to clarify core values and commit to living in accordance with them. A number of cognitive strategies are also taught to foster acceptance of experience.\(^{255}\) Many aspects of ACT are similar to MT (e.g. helping individuals not identify with thoughts as defining the entirety of their personhood). Most skills are taught in a cognitive rather than experiential style however.

Grouping these modalities with the MBIs may not be entirely appropriate considering significant differences between them.\(^{274}\) DBT and ACT include mindfulness practices but do not, unlike the MBIs, give them a central position. These approaches do not require daily meditation practice from both participants and facilitators. Also they have been developed as therapy methods,
rather than education or training programs as is the case with the MBIs. ACT or DBT have not been included in the overview of the evidence presented below.

**Challenges in delivering and evaluation of mindfulness training**

The profusion of MT programs is not without drawbacks. The 'perceived need to reduce to a clinical algorithm the complexity of the practice and nuanced delivery of [MT can lead to it being]... seized upon as the next promising cognitive behavioral technique or exercise, decontextualized, and "plugged" into a behaviorist paradigm with the aim of driving desirable change, or of fixing what is broken'.

**Challenges in delivery**

There is a humility involved in teaching mindfulness. Teachers discuss how they themselves are beset by similar maladaptive habits of mind as participants. Participants are seen as having it within themselves to heal emotional difficulties rather than the healing occurring by the practice of some expertise upon them. Reflecting this humility it is critical that those who teach mindfulness have themselves an long-standing daily mindfulness practice. This has significant service delivery implications as MT facilitators need not only to be suitably trained, but also have a prior personal engagement with meditation. While recommendations regarding personal practice and professional training vary, those issued by the UMass Centre for Mindfulness (UMass CFM), where MBSR originated, stipulate:

- Daily practice of meditation as well as a form of body awareness such as yoga for a minimum of 3 years
- Previous attendance in at least two silent, teacher-led meditation retreats of at least seven days' duration and ongoing participation in future retreats
- Personal experience, as a participant, of the MT training course to be taught
- Attendance at a minimum of three different formats of teacher training, usually held as residential intensive programs lasting over a week and up to 13 hours per day
- Teaching at least the first two MT courses under supervision from an accredited teacher-trainer
- Minimum graduate level university qualification in health or related fields

On the one hand, such exacting requirements makes online delivery of MT attractive. Fewer qualified teachers are required to reach a larger number of people. Sites such as www.audiodharma.org and www.dharmaseed.org (see Appendix F) have made hundreds of audio-recordings of talks and meditation instructions from highly experienced teachers freely available. On the other hand, exposure to the teacher themselves, being able to raise difficulties with them and hearing about other novice practitioners’ challenges is traditionally considered an important part of MT. This argues for a more sophisticated approach to online MT than simply presenting recorded audio material.

**Challenges in evaluation**

The subjective experience of mindfulness is subtle and nuanced. The injured young person mentioned above may mindfully accept the pain in her hamstrings for instance. However, she also retains the motivation to take steps to redress it (e.g. seeing a physiotherapist or doing stretches). Assessing how participants engage with and benefit from the paradoxical dialectic of acceptance and growth is one of the many challenging aspects of research in mindfulness.

Credited with developing a mindfulness scale himself, Grossman (2008) has argued that the inherent complexity and subjectivity of mindfulness may render operationalization misleading. Furthermore, results of the necessarily reductionistic scale development process may communicate an inaccurately narrow view of what mindfulness is to future researchers and even teachers of mindfulness. Inclusion of qualitative evaluation and relying on putative consequences of mindfulness practice (e.g. greater self-compassion) has been thus advocated as a way to measure the relative value of MT programs.

MT facilitators are required to teach the group based on their own experience of moment to moment awareness. Manualizing interventions and analyses of
fidelity are thus difficult. The question of ‘are participants learning what we were teaching’ thus becomes doubly complex to answer: measuring what is being taught is difficult on the one hand and standardizing the teaching process is counter to authentic delivery. It has been suggested that researchers in MT also have a daily mindfulness practice. In this way research design and the treatment of study participants is embedded within a mindfulness paradigm.

**Correlating mindfulness and mental health**

The first scale to formally measure mindfulness was developed by Brown and Ryan in 2003. A large number of intervention studies had already been conducted by this point (since early 1980’s – see ‘1.3.5. Quantitative studies in mindfulness training’, page 67). It had been shown that MT can lead to improvements in measures of mental health. The aim to determine whether these changes were due to an increase in mindfulness or some other factor then stimulated development of scales of mindfulness. Characteristics of individual scales are detailed in Appendix A.

With the aforementioned caveats about measures of mindfulness in mind, it appears that scores correlate positively with established measures of mental health and well-being (Table 1). Most studies have been conducted in adult college students. Young adults (aged 18-24 – part of the youth age band (aged 15-24) of interest in this project) were thus over-represented in samples.

In the current project where MT was to be designed for a non-clinical group, correlation with well-being and positive affect were considered most important (see ‘Conceptualizing positive mental health and well-being’, page 24). Of particular relevance to young people is emotion regulation (see ‘1.3.3. Mindfulness and young people’, page 64) which again has been highlighted.

Table 1 concerns ‘trait’ mindfulness. This refers to individuals’ tendency to be mindful in everyday life. This tendency has been shown to be normally distributed in the population. A likely contribution from genetic and environmental factors has been posited to explain individual variation in this
trait.\textsuperscript{11} In contrast ‘state’ mindfulness refers to the degree to which one is mindful in a particular situation (e.g. during sitting meditation). While MT obviously helps participants create mindful states,\textsuperscript{107} the intervention evidence discussed later (see ‘1.3.5. Quantitative studies in mindfulness training’, page 82) concerns measurement of changes in trait mindfulness.
Table 1: Studies where trait mindfulness has been correlated with desirable psychological attributes

<table>
<thead>
<tr>
<th>Domain</th>
<th>Study</th>
<th>Measure of mindfulness</th>
<th>Correlated with…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion regulation</td>
<td>Roemer et al. (2009)²⁸¹</td>
<td>MAAS</td>
<td>Greater emotion regulation (DERS)</td>
</tr>
<tr>
<td></td>
<td>Feldman et al. (2007)²⁸³</td>
<td>CAMS</td>
<td>Lower frequency of worrying thoughts (PSWQ)</td>
</tr>
<tr>
<td></td>
<td>Baer et al. (2006)²⁸²</td>
<td>MAAS, FMI, KIMS, CAMS, SMQ</td>
<td>Greater emotion regulation (DERS)</td>
</tr>
<tr>
<td></td>
<td>Brown and Ryan (2003)¹⁰⁷</td>
<td>MAAS</td>
<td>Lower rumination (RRQ)</td>
</tr>
<tr>
<td>Well-being</td>
<td>Greco et al. (2011)²⁸⁴</td>
<td>CAMM</td>
<td>Better functioning and quality of life (SFS, YQLI)</td>
</tr>
<tr>
<td></td>
<td>Feldman et al. (2007)²⁸³</td>
<td>CAMS</td>
<td>Greater psychological well-being (PWS)</td>
</tr>
<tr>
<td></td>
<td>Baer et al. (2006)²⁸²</td>
<td>MAAS, FMI, KIMS, CAMS, MQ</td>
<td>Lower mental distress symptoms (BSI)</td>
</tr>
<tr>
<td>Affective balance*</td>
<td>Greco et al. (2011)²⁸⁴</td>
<td>CAMM</td>
<td>Better functioning (SFS)</td>
</tr>
<tr>
<td></td>
<td>Roemer et al. (2009)²⁸¹</td>
<td>MAAS</td>
<td>Lower tendency to worry or feel anxious (PSW, GADQ-IV)</td>
</tr>
<tr>
<td></td>
<td>Feldman et al. (2007)²⁸³</td>
<td>CAMS</td>
<td>Better overall mood (MASQ)</td>
</tr>
<tr>
<td></td>
<td>Baer et al. (2006)²⁸²</td>
<td>MAAS, FMI, KIMS, CAMS, MQ</td>
<td>Lower neuroticism (NEO-FFI)</td>
</tr>
<tr>
<td></td>
<td>Carlson and Brown (2005)²²²</td>
<td>MAAS</td>
<td>Better overall mood (POMS) and lower perceived stress (SOSI)</td>
</tr>
<tr>
<td></td>
<td>Brown and Ryan (2003)¹⁰⁷</td>
<td>MAAS</td>
<td>Lower depressive and anxiety symptoms (CES-D, STAI, BDI, POMS), greater positive emotions (PANAS), and lower neuroticism (NEO-FFI)</td>
</tr>
</tbody>
</table>

*Affective balance refers to the relative predominance of positive over negative emotions or symptoms of distress, depression, anxiety etc. BDI Beck Depression Inventory,²⁸⁵ BSI Brief Symptom Checklist,²⁸⁶ CAMS Cognitive Affective Mindfulness Scale,²⁸⁷ CES-D Centre for Epidemiological Studies Depression Scale,²⁸⁸ DERS Difficulties in Emotion Regulation Scale,²⁸⁹ GADQ-IV Generalised Anxiety Disorder Questionnaire-IV,²⁹⁰ FMI Freiburg Mindfulness Inventory,²⁹¹ KIMS Kentucky Inventory of Mindfulness Skills,²⁹² MAAS Mindful Attention Awareness Scale,¹⁰⁷ MASQ Mood and Anxiety Symptoms Questionnaire,²⁹³,²⁹⁴ NEO-FFI Neuroticism Extroversion Openness Five Factor Inventory,²⁹⁵ PANAS Positive & Negative Affect Schedule²⁹⁶ POMS Profile of Mood States,²⁹⁷ PSWQ Penn State Worry Questionnaire,²⁹⁸ PWS Psychological Well-being Scale,²⁹⁹ RRQ Rumination Reflection Questionnaire,³⁰⁰ SMQ Southampton Mindfulness Questionnaire,³⁰¹ STAI State Trait Anxiety Inventory,³⁰² SOSI Symptoms of Stress Inventory,³⁰³ SFS Symptoms and Functioning Scale,³⁰⁴ TSWLS Temporal Satisfaction With Life Scale,³⁰⁵ YQOL Youth Quality of Life Inventor,³⁰⁶
1.3.3. Mindfulness and young people

**Emotion regulation: a key challenge**

Adolescence and young adulthood is a time of significant transition. Occupational roles and responsibilities and the nature and salience of interpersonal relationships change rapidly in this period. This is often accompanied by stress, confusion, uncertainty and fears about competence.

These external life transitions are accompanied by neurobiological change. Processes such as synaptic pruning restructure connections between various brain regions. Executive control of emotions appears to be impaired during these processes. Thus there are both more potentially aversive emotional triggers to cope with compared to childhood and an impaired ability to cope, particularly as compared with adults.

In this context *regulating emotions* is challenge for young people. Difficulties in this area appear to be a key underlying factor in the increased incidence of psychiatric symptoms. Emotional volatility, interpersonal vulnerability and resulting socio-occupational impairment are other consequences.

**Mindfulness training may improve emotional functioning**

The youth MHP program characteristics stipulated by the CASEL (page 38) are close to the aims of MT. Greater awareness of emotions is among many factors that leads to improved decision making. Familiarity with one’s own emotional and cognitive content leads to clarity, and more likely application, of constructive values. Developing interpersonal awareness and sensitivity is a key skill taught in MT.

In particular, the importance of emotion regulation in this age group has led to MT being used as an approach to help young people to negotiate the vicissitudes of development. There is great overlap between the constructs of mindfulness and of emotion regulation. The latter construct is essentially concerned with how individuals modulate the experience of or response to...
emotions.\textsuperscript{168} For this to occur several factors are required: awareness of emotions; awareness of associated thoughts; and the ability to select adaptive cognitive and behavioural responses.\textsuperscript{168}

As detailed in Table 1 individuals with greater trait mindfulness have less difficulty in regulating emotions. Many intervention studies, including in young people, have demonstrated enhanced emotion regulation following MT.\textsuperscript{107,281-283,312,313} Some authors have suggested that changes in emotion regulation may in fact be a key factor in how MT leads to benefits.\textsuperscript{14,257,283,314-316}

Another way in which MT may be particularly helpful to young people is through its effects on executive functioning.\textsuperscript{317,318} As noted earlier problems in this domain often contribute to social and emotional difficulties.\textsuperscript{166} Meditation training allows participants to spend extended periods of time practising various strategies to regulate attention and influence thinking processes. Executive functioning underpinned by conscious control of thought may thus be enhanced.\textsuperscript{317,318} Alterations in prefrontal lobe activity, correlating with improved executive functioning, have also been found following MT.\textsuperscript{319}

\textit{Is mindfulness training suited to young people?}

A compelling desire for a sense of control of the inner world is paralleled by a wish for respect and autonomy in young people.\textsuperscript{320} Most social and emotional learning interventions are influenced by CBT,\textsuperscript{321} which has a directive approach to alleviation of symptoms. Mindfulness is a paradigm that privileges the practitioners’ first person experience and shuns an authoritarian style in its pedagogy.\textsuperscript{262} This makes it immediately attractive to young people.\textsuperscript{322} Through examining their own inner state participants discover for themselves the thinking and behaviour patterns that are constructive.\textsuperscript{242} A sense of agency may be created as they use both formal and informal meditation to interrupt harmful mental and emotional patterns.\textsuperscript{323}

Meditation and mindfulness are increasingly seen as worthwhile within contemporary Western youth culture.\textsuperscript{324} In a study of 67 American adolescents
with bowel disease for instance, while 20% were already using meditation as a way of dealing with symptoms, over 40% reported that they would consider doing so in future.\textsuperscript{324}

The popularity of generic MT programs such as MBSR has meant that they are often provided without attention to the unique needs of persons or populations of interest.\textsuperscript{325} While young people may indeed find traditional MT attractive and beneficial, their mode of delivery is arguably in conflict with current youth culture. Young people increasingly live busy lives balancing work, study and social responsibilities\textsuperscript{326} which may make regular attendance at sessions challenging. Finding time and a quiet space in the day to engage in formal meditation may thus be difficult. They are more prone than adults to spend significant parts of the day multi-tasking (e.g. checking Facebook on a smartphone while eating lunch and speaking with a friend).\textsuperscript{327} Novice practitioners can find mindfulness of daily activities difficult when attending to many tasks at once.\textsuperscript{328}

Calls have been made to integrate MT into school curricula as an MHP modality.\textsuperscript{329} It has also been suggested that classroom teachers receive suitable training to provide MT.\textsuperscript{329} Two research reports\textsuperscript{330,331} concern children taught MT as part of regular classes. This is highly desirable at first glance being a whole school approach to MHP. Nonetheless it presents logistical and fidelity difficulties. Standard accreditation criteria require that MT facilitators have their own daily meditation practice of many years and have attended several personal and teacher-training retreats.\textsuperscript{262} It may be inappropriate to expect all teachers in a school to have this background.

Thus MT may lead to improvements in mental health domains of interest in young people and appears to be acceptable to them as an MHP strategy. However, there are important challenges that need to be taken into account in program design.
1.3.4. Qualitative studies in mindfulness training

The challenges in evaluating MT have led to calls for the inclusion of rigorous qualitative assessment in MT studies. Qualitative enquiry offers a way of gaining greater depth and clarity about participants’ experiences of MT and its inclusion may as such enhance the validity of findings in MT studies. As the greater part of the evaluation in this project was to be qualitative (see ‘2.4. Choice of evaluation strategies’, page 109), qualitative studies of MT are reviewed and critiqued first and in greater depth than quantitative studies in this chapter.

Elliot et al. (1999) have developed a set of criteria for assessing qualitative research. The factors below are specific to qualitative research reports, and are in addition to those important in both qualitative and quantitative studies (e.g. clear elaboration of methods):

- **Owning one’s perspective:** An attempt is made to present authors’ theoretical, professional and personal background to the degree that it may bias interpretation of data.
- **Situating the sample:** Research participants and their life circumstances are adequately described so as to provide a context to data.
- **Grounding in examples:** At least one or two specific quotations or conversational sequences are presented to illustrate each theme.
- **Providing credibility checks:** Validity may be improved by such methods as coding and analysing data by more than one researcher or triangulation with quantitative evaluation.
- **Coherence:** Details and nuances of data are preserved even as an integrated picture is developed.
- **Accomplishing general versus specific research tasks:** It is made clear whether the aim is to arrive at a general understanding of a phenomenon or of the specific aspects of a particular case or group of cases. Appropriate detail and integration is provided depending on the aim.
- **Resonating with readers**: Data and interpretation are communicated in such a way as to generate a greater or clearer understanding of the subject for an informed reader.

In the review below, only four studies (Chadwick et al. (2011), Griffiths et al. (2011), Mackenzie et al. (2007) and Mason and Hargreaves (2001) – highlighted below), all of which were conducted in adults, met the Elliot et al. (1999) quality criteria.

All qualitative studies of MT, in all age groups, identified in the literature search have been discussed below. Studies in adults and the elderly are presented in Table 2 and those including participants younger than 18 in Table 3. High quality adult studies, along with the one study focused on young people (i.e. inclusive of both adolescents and young adults) are reported in greater detail.
Table 2 Qualitative studies of the mindful experience in adults and the elderly

<table>
<thead>
<tr>
<th>Study</th>
<th>Design and country</th>
<th>Key themes and findings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chadwick et al. (2011)</td>
<td>Interviews within a year of MBCT; n=12; age 24-58; patients with bipolar disorder ; UK</td>
<td><strong>Focusing on what is present:</strong> including a broadening of attention beyond negative thoughts; <strong>clearer awareness of mood state and mood change:</strong> led to a lessened sense of being overwhelmed by feelings; <strong>acceptance:</strong> including of mood changes, the diagnosis and of the self in general; <strong>mindfulness practice in different mood states:</strong> more active (e.g. yoga or walking) practices when in a low mood, sitting meditation when elated, initiating any practice more difficult when low, more informal practice when euthymic; <strong>reducing and stabilizing negative affect:</strong> anxiety, worry, guilt and shame became less extreme in duration and intensity; <strong>relating differently to negative thoughts:</strong> being able to see that they were not facts but simply one of many possible mental representations of experience; <strong>reducing impact of mood state:</strong> small mood changes less likely to self-reinforce and increased ability to take specific action to abort escalation</td>
<td>Appropriately chosen and clearly described interview design and data analysis procedure; thematic analysis with inductive derivation of themes which appeared to be consistent with and extended understanding of the data presented; long delay between MT and qualitative data collection (up to a year) may be a source of possible inaccuracy</td>
</tr>
<tr>
<td>Ando et al. (2011)</td>
<td>Interviews before and after MT delivered over two sessions over 2 weeks; n=28; mean age age 60; patients with cancer; Japan</td>
<td><strong>Before MT:</strong> <strong>effort to cope</strong> with the <strong>suffering</strong> of illness led to greater openness to looking back, <strong>spirituality</strong> and <strong>personal growth</strong>; following MT: <strong>adapted</strong> [i.e. adaptive] <strong>coping</strong> more prevalent with <strong>spirituality</strong> and <strong>personal growth</strong> remaining key foci; MT led to both a more <strong>positive meaning</strong> of illness and <strong>negative recognition</strong> (viz. awareness of negative attitudes and behaviours in relation to illness)</td>
<td>Difficult to compare findings with standard programs due to brevity of MT; data analysis process not clearly reported; apparent overlap between interviews and actual MT sessions; implications of Zen Buddhist background in elderly Japanese not discussed</td>
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<tr>
<td>Study</td>
<td>Design and country</td>
<td>Key themes and findings</td>
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<td>Szanton et al. (2011)</td>
<td>Three focus groups post MBSR; age 60-90; low-income elderly from cultural minorities; US</td>
<td>Stress-management: program and home practice as soothing or relaxing space away from stressors (e.g. medical tests); applying meditation to their daily lives and stresses: through brief meditation practices or recalling facilitator’s voice; social support: positive group experience unrelated to the program content as MT</td>
<td>Grouping of categories within identified themes (e.g. ‘spiritual’ in stress management) not explained; boundaries between themes unclear; limited detail of experiences of mindfulness itself (e.g. vis-à-vis generic group factors) perhaps since focus groups used as exclusive data collection strategy</td>
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<tr>
<td>Allen et al. (2009)</td>
<td>Interviews one year post MBCT; n=20; age 37-66; patients with history of depression; UK</td>
<td>Control: e.g. in ability to better detect and abort likely depressive relapse; acceptance: depressive thoughts as symptoms of a disorder rather than a defining aspect of identity and feeling less stigmatized by others; relationships: improvements in relationships with themselves and others; struggle: effort in relation to mindfulness practice and difficulty with dialectic of acceptance and growth</td>
<td>Rigorous data analysis process; elaboration of themes cogent and well supported by data presented; 54 people were interviewed but only data from final 20 reported; how initial interviews informed last 20 not discussed in detail; discarding information from initial interviews unusual and may have limited data richness</td>
</tr>
<tr>
<td>Griffiths et al. (2009)</td>
<td>In-depth interviews within 6-12 weeks of MBCT; n=6; age over 45; patients in cardiac rehabilitation; UK</td>
<td>Development of awareness: including of the relationship between mind and body generally and thoughts and cardiac problems specifically; within group experience: not specific to the MT content and at times negative; commitment: awareness of the need for and the difficulty in having the discipline required for mindfulness practice; relating to the material: reflections on the relative usefulness of various practices presented; acceptance as an outcome: also led to an improvement in mood</td>
<td>Appropriately and rigorously applied and reported methodology; used IPA; attendance of a non-participant observer may be a limitation*</td>
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<td>Dobkin (2008)</td>
<td>Two focus groups following MBSR; n=8; age 37-70; patients with cancer; Canada</td>
<td>Acceptance, regaining and sustaining mindful control: improved ability to cope with illness and changed attitudes to day-to-day situations; taking responsibility for what could change: including recognizing limitations in ability to change situations; spirit of openness and connectedness: to day-to-day experience; shared group experience, as distinct from content related to mindfulness also highlighted</td>
<td>Highly structured (6 questions given 15 minutes each) approach may have impaired eliciting full breadth of experience; rationale for grouping of categories within stated themes unclear (e.g. ‘better perspective of things and living in the moment’ within taking responsibility for what could change)</td>
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<tr>
<td>Carroll et al. (2008)</td>
<td>Text analysis of 38 written stories where MBSR mentioned; stories collected over 4 years in a therapeutic community for drug and alcohol rehabilitation; US</td>
<td>Utility: useful tools (e.g. using the breath as a point of focus for attention during a difficult situation); portability: ability to apply skills learnt in class in day-to-day life; sustainability: potential long-term benefits of program for recovery from drug and alcohol misuse</td>
<td>Number of participants (and characteristics e.g. age) that generated stories not reported; text analysis method unclear; validity is explained by ‘parallel roles of the researchers for all aspects of the analysis’341 p.108 leaving it unclear whether independent coding was used; likely changes in the community program and characteristics of members during long study time-span not discussed</td>
</tr>
<tr>
<td>Matchim et al. (2008)</td>
<td>Interviews between 10 weeks and 9 years following MBSR; n=9; age 19-69; patients with a variety of health difficulties</td>
<td>Sense of peace and relaxation; health awareness and self-care concerns; self-management and responsibility; sense of giving and sharing; fulfil a basic need for health and well-being</td>
<td>Method of recruitment not reported; wide variation between the time elapsed since MT; possible influence of some participants’ extensive prior meditation experience not discussed; themes analysed between interviews but how this influenced future interviews not discussed; quotes presented separately from explication of themes making degree of inductive interpretation used difficult to assess</td>
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<td>Mackenzie et al. (2007)</td>
<td>Interviews and focus groups (including with facilitators) following MBSR; n=7; age 43-77; patients with cancer; Canada</td>
<td><em>Opening to change:</em> in perceptions, attitudes and behaviours both towards illness and treatment leading to better ways of dealing with emotions and external actions supporting coping; <em>self-control:</em> better recognition of situations which they could not change and letting go of the effort to change them as the most helpful step; <em>shared experience:</em> supportive emotional environment and benefits in consolidating mindfulness skills; <em>personal growth:</em> richer relationship with the self, the ability to see illness as a motivation towards improving relationships with others, and enriched sense of personal <em>spirituality</em> including practical activities such as prayer and shifts in orientation towards others (e.g. greater gratitude, compassion and equanimity)</td>
<td>Used grounded theory; methodology and results reported with clarity; derived themes well supported by data; only study identified where the various elicited themes were linked and integrated together to illustrate the progression of experiences with ongoing mindfulness practice</td>
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<td>Smith et al. (2007)</td>
<td>Interviews following MBCT; n=29; age 65-88; patients with history of depression; UK</td>
<td>17 themes identified including <em>pain:</em> impact on the ability to practise meditation and reduction due to practice; <em>changes in identity:</em> including being viewed differently by others</td>
<td>Large number of interviews analysed; qualitative analysis paradigm and data coding and theme generation procedure unclear; categories presented mostly without reference to quotations; all categories except the two noted here corresponded closely with generic aspects of the mindfulness construct as discussed in theoretical literature</td>
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<td>Chadwick et al. (2008)³⁴⁴</td>
<td>Interviews following 6-week MT; n=4; age 54-77; patients with cancer in palliative care</td>
<td><em>Motivation and hope</em> [regarding undertaking MT]; <em>benefits of mindfulness; relating to the facilitator; relationship to mindfulness</em> [i.e. their understanding of the construct]; <em>group process; hospice context; practice outside the group</em></td>
<td>Used IPA; rigorous process to ensure interpretative validity using three independent coders, including one unfamiliar with mindfulness; contrary to IPA practice³⁴⁵ themes appear to be based on areas of research enquiry rather than inductively derived from participant experience</td>
</tr>
<tr>
<td>Fonteyn and Bauer-Wu (2005)³⁴⁶</td>
<td>Interviews following MT delivered as fortnightly 1:1 30-40 minute sessions with an instructor, before and during hospital admission; n=19; mean age 51; patients undergoing bone marrow transplantation</td>
<td>MT was reported to be calming; suggestions for program improvement were for scheduled rather than unplanned visits from the instructor, a choice of male and female voices and soothing background sounds (e.g. ocean waves) requested on the CD provided for between-session practice</td>
<td>MT intervention designed for this study and not reported elsewhere but several aspects not described (e.g. the total number of sessions; content of sessions; duration of meditations; presence of instructions regarding informal meditation); data drawn from four structured 20 minute interviews over three months – brevity and structure may have limited depth; verbatim quotations and integration of reported categories omitted</td>
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<td><strong>Mason and Hargreaves (2001)</strong>&lt;sup&gt;336&lt;/sup&gt;</td>
<td>Interviews following MBCT; n=8; age 24-59; patients with a history of depression; UK</td>
<td>Core category: ‘the way participants develop understandings of their mental and physical “selves” over time, and the role that mindfulness practice has in helping them manage their difficulties better’;&lt;sup&gt;336&lt;/sup&gt;p.201 Themes: pre-conditions (e.g. attitudes and coping styles) and a stressful change in circumstances or health were the trigger for original experiences of distress and depression which provided an emotional and life-story context for MT; pre-conditions impacted on course expectations which affected the way the program helped in coming to terms with emotional difficulties; previous distress and depression were often brought to the surface in MT leading to initial negative experiences which was modulated by and further constructed their course expectations; ultimately benefits occurred by bringing it [i.e. mindfulness practice] into everyday esp. through informal mindfulness practice to deal with stressful situations and recognizing and taking appropriate action in relation to warning bells of potential depressive relapse</td>
<td>Used grounded theory; four initial interviews led preliminary set of themes which were further developed following four more interviews with different participants; methodology appears rigorous and was reported clearly; detailed attempt made to derive themes based on participant experience and arrive at an integrated synthesis of various themes</td>
</tr>
<tr>
<td><strong>Brennan and Stevens (1998)</strong>&lt;sup&gt;347&lt;/sup&gt;</td>
<td>Interviews following MT provided by a nurse and a volunteer within a hospital setting; n=6; age not reported; patients with cancer; Australia</td>
<td>Overall findings were: patients ‘knew every aspect of their story [of cancer] in great detail’;&lt;sup&gt;347&lt;/sup&gt;p.25 ‘motivation to change unhealthy behaviours... is strongest when a client is actually feeling the effect of the disease’;&lt;sup&gt;347&lt;/sup&gt;p.25 meditation fostered taking control; nursing staff were not mentioned; oncologists may be blind to viewing health improvement in some of the ways that patients did</td>
<td>Details of MT program not reported; used grounded theory; limited attempt to ensure validity or trustworthiness of derived themes; ‘theories’ as presented by authors (and noted here) were difficult to separate from derived themes and commentary on data</td>
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<td>Sears et al. (2011)</td>
<td>Text analysis of weekly reports about benefits of and doubts about MT which comprised 12 weeks of 10-15 minute meditation at the beginning of psychology classes and longer discussion sessions; n=65; age 18-41; college students; US</td>
<td>Benefits: <em>increased attention/awareness; improved clarity of thought; change in quality of thought; increased calmness/relaxation/peace; decreased anxiety/stress; and increased energy/spirit/refreshed; spirituality/oneness</em> [all sic]; doubts: <em>difficulty maintaining cognitive focus; physical issues</em> [e.g. discomfort related to prolonged sitting]; finding time to meditate outside of class; finding motivation to meditate outside of class; does meditation really work; am I doing it right?</td>
<td>Limited detail provided regarding MT program; two closed, specific questions may have limited expression of subjective experience; grounded theory mentioned as qualitative paradigm but no explanation provided as to how this approach was used; data categories strongly informed by prior knowledge of Buddhist constructs (e.g. the ‘five hindrances’ faced by mindfulness practitioners); data categories presented as a list without integration.</td>
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</table>

*MT is grounded in an egalitarian philosophy. Facilitators themselves are expected to speak from their own experience and share how they work with personal emotional difficulties. Including observers is not standard practice in MT as reported in the literature or by experienced teachers (Goddard, T., personal communication). Inclusion of an observer in this study, particularly one visibly taking notes, may have limited free and open expression of inner thoughts and feelings by participants. Further, it may have subverted communication of the key underlying paradigm in mindfulness that ‘we are all equal in suffering’. IPA Interpretative phenomenological analysis.
## Table 3 Qualitative studies of mindfulness training in children and adolescents

*italics indicate themes identified in reviewed studies*

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<th>Study</th>
<th>Design and country</th>
<th>Key themes and findings</th>
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<tr>
<td>Baltimore group *&lt;sup&gt;351/352&lt;/sup&gt;</td>
<td>Interviews within a month of MBSR; n=10; age 13-21; HIV-infected youth; US</td>
<td><strong>External stressors</strong> and unhelpful <strong>reactions to stress</strong> (e.g. avoidance through: staying in bed, watching excessive television, and playing computer games for lengthy periods; or expression through: anger and hostility) before the program esp. in relation to schoolwork and social relationships; <strong>perceptions of and experiences</strong> with mindfulness (e.g. increased attentiveness to moment to moment experience; more open-minded and non-judgmental attitude; calmness and reduced stress); sitting meditation more difficult than body scan practise * or brief mindfulness breaks; * challenge in finding appropriate and quiet context for meditation of any kind; most used meditation in a flexible way to deal with stressors as they occurred rather than as daily practice; <strong>positive changes in coping with daily stressors</strong> (e.g. becoming immediately aware of, and circumventing unhelpful emotional reactions); <strong>shifts in perspective</strong> led to improved relationships (e.g. through being less judgmental towards others) and better care of their personal needs (e.g. by taking physical exercise); <strong>transformational shifts in sense of self and life orientation</strong> esp. in relation to having a physical illness</td>
<td>Inclusion of quantitative data in one of the research reports is a strength; richly detailed qualitative data and derived themes presented; further analysis to integrate themes, which were presented in a descriptive style only, may have enhanced understanding of participants' experience; integration and comparison of qualitative and quantitative data not reported</td>
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<td>Coholic (2011)</td>
<td>Interviews with children (n=31) and parents (n=18) spanning over 3.5 years following arts-based MT; age 8-12; children referred by child protection and child mental health agencies because of low self-esteem and anger; Canada</td>
<td>Core category: 'the groups were “fun”'; key benefits were 'to develop self-awareness and to feel better about themselves' and 'to learn emotional regulation and the healthy expression of feelings'; program length extended from 6 to 12 weeks during study as 6 weeks was 'insufficient time for them to learn skills such as emotional awareness and regulation, especially since time had to be spent developing listening skills, group cohesion and functioning, and managing challenging behaviors'</td>
<td>Limited description of MT program used; parents included after first 11 interviews with children as little information was obtained without them; key benefits outlined appeared supportable based on data presented but data were interwoven with discussion of the analytical method and results making limits of participants' contributions difficult to discern; grouping and integration of data unclear; differences in content of children's reported experience between when parents were present and when not was not reported</td>
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<td>Mendelson et al. (2010)</td>
<td>12 focus groups with children (n= 3-7 each group) and 4 focus groups with teachers (n=4-5 each group) post MT involving 45 minute sessions at school for 4 days per week for 12 weeks; age 8-11; children with psychosocial disadvantage; US</td>
<td>Students highlighted: ability to reduce stress; teachers noted: improved ability of students' ability to pay attention and lowered level of behaviour disturbance</td>
<td>Qualitative and quantitative assessment conducted; extremely brief reporting of qualitative data and method of analysis; no integration and comparison of qualitative and quantitative data reported</td>
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<td>Dellbridge and Lubbe (2009)</td>
<td>analysis of facilitator notes during MT sessions of unknown duration/frequency, interviews with the participant, and her diaries and drawings; n=1; age 17; no clinical problem reported; South Africa</td>
<td>Participant’s experience was compared with a priori themes from theoretical literature: present-centred attention and awareness; attitude and heart qualities; self-regulation; universalism of mindfulness; mindlessness [i.e. what is considered an opposite way of relating to experience vis-à-vis mindfulness]</td>
<td>Characteristics of the MT program not reported; number and duration of interviews and boundaries with MT not reported; pre-determined themes used rather than allowing emergence from data which may have curtailed understanding of subjective experience; why these particular a priori categories were chosen is unclear and categories used not contrasted with formal typologies of mindfulness (e.g. the intention, awareness and attitude model)</td>
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*The same qualitative data drawn from the same participant group has been presented slightly differently in two publications (Kerrigan et al. (2011) and Sibinga et al. (2011)) and are discussed together here. Involves focusing attention systematically on parts of the body usually while lying down. Where, in day-to-day life, attention is brought momentarily to the breath and other sensations as a way to ground oneself in an awareness of present experience.*
Summary and limitations of qualitative studies

As detailed in the preceding tables, the majority of qualitative studies of MT have been conducted in adults with specific clinical or other difficulties. Only two studies with children,\textsuperscript{331,353}, one with adolescents\textsuperscript{354} and one with young people \textsuperscript{352/351} could be identified. Only one study in adults\textsuperscript{348} and one with an adolescent\textsuperscript{354} concerned participants without a clinical disorder or psychosocial disadvantage. The most common themes describing the experience of mindfulness across all studies may be integrated into the following seven domains:

- **Present-moment awareness of experience:** Of thoughts, emotions and sensory information\textsuperscript{333,334,342,343,348,351-354}
- **Effects on experience itself:** Reducing symptoms or distress;\textsuperscript{331,333,334,338,341-343,347,348,351-354} reducing impact of symptoms on life;\textsuperscript{333,336,338,340,344,351,352} improved interpersonal relationships;\textsuperscript{339,351,352}
- **Perspective:** Seeing internal and external phenomena in a broader context and not as a complete definition of the self (e.g. 'I have an illness' vs. 'I am ill')\textsuperscript{333,339,343,347,348,351-353}
- **Acceptance:** Of experience in general;\textsuperscript{334,343} of being ill, symptoms or distress in particular\textsuperscript{333,336,339,340}
- **Agency:** A sense of control or responsibility for changing reactions to experience\textsuperscript{335,339,340,342,343}
- **Work:** Some degree of effort was required to practise meditation\textsuperscript{334,339,348,351,352}
- **Importance of being in a group:** Apart from its content as MT\textsuperscript{334,335,338,342,344}

There are thus many themes that are common to studies in adults and those with younger persons. Some themes (such as ‘fun’ in children\textsuperscript{353}) appear unique. Such examples do not support the existence of overall clear differences in the experience of older versus younger participants. Within the relatively small evidence base available there is great difference in the number of studies conducted in different age groups, and much heterogeneity of findings within
each age group. These factors disallow determining whether the age of participants leads to a difference in the experience of mindfulness practice.

In only two studies with adult participants (Mackenzie et al. (2007) and Mason and Hargreaves (2001)) an integrated theory or explanatory model of participants’ experience was developed. Presentation of data in other studies often took the form of descriptive lists of themes with a limited attempt to integrate and draw links between them.

Experienced mindfulness practitioners commonly state that the process of understanding and applying mindfulness is an ever-changing, life-long process. Only in the study by Mackenzie et al. (2007) were changes in experience of mindfulness with ongoing practice discussed. Other studies appeared to treat mindfulness as a static skill that participants gained following initial exposure.

The cognitive and emotional state one brings to mindfulness practice can have a strong influence on both the trajectory and experience of practice. Only two studies (Mason and Hargreaves (2001) and of young people in Baltimore) presented data about participants’ emotional lives before MT. This enriched the understanding of their mindful experience greatly by placing it in an emotional context.

In most studies, derived themes had strong resemblance to the construct of mindfulness as discussed in the research or pedagogic literature. It is difficult to discern the relationship between: possible theoretical bias on behalf of researchers; influence on participants’ words in interviews and focus groups by words they had heard from mindfulness trainers; and their genuine understanding and engagement with mindfulness. An example is the theme opening to change identified as describing initial experience of MT in the study by Mackenzie et al. (2007). It is very similar in content to experiencing new possibilities, which is a critical and well-publicized aim for participants at the beginning of MT programs.
The two studies with participants without clinical disorders or psychosocial disadvantage used unusual and limited methodology. This made validity of findings questionable. The adolescent study\textsuperscript{354} was based on a single case only. It aimed narrowly at demonstrating how the participant’s experience fit the authors’ theoretical construct of mindfulness, itself inadequately justified. The adult study\textsuperscript{348} used written feedback only. Furthermore, rather than asking participants to write about their experience in general, it perhaps limited their feedback by asking two specific questions.\textsuperscript{348} Mindfulness was taught at the beginning of psychology classes rather than within a formal MT program as in most of the intervention literature. This may have ‘decontextualized’ mindfulness and students may have mistakenly seen it ‘as the next promising cognitive behavioral technique or exercise’\textsuperscript{12p.145} (see page 59).

Other common limitations of the qualitative studies reviewed were: the delay between MT and qualitative data collection was often lengthy (up to nine years\textsuperscript{342}) or not reported; data analytic methods, particularly tests of validity, were often not reported in adequate detail; limited explanation of why certain categories related to certain themes were provided; a limited number of quotes or conversation sequences were provided to support categories or themes; with few exceptions only one type of data was relied on (e.g. text or focus group only).

Obtaining qualitative and quantitative data in the same study is a common form of ‘methodological triangulation’\textsuperscript{355} (see page 109). It can allow for inferences as to the mechanisms that may underlie quantitative change.\textsuperscript{355} With few exceptions,\textsuperscript{331,340,351,352} the studies reviewed were purely qualitative. In those which had included quantitative measures a systematic comparison or integration of quantitative and qualitative data was not reported.

The body of qualitative evidence currently available is small. High quality studies are uncommon. No studies have been reported of the experience of a group of ‘healthy normal’ young people. The one study available is a case report. Thus a
very limited understanding of how such young people, of interest in this project, understand and apply mindfulness can be obtained from previous research.

1.3.5. Quantitative studies in mindfulness training

A much larger body of quantitative than qualitative studies has been published concerning MT. The evidence base relevant to the age group of interest in this project (15-24) is presented. First, findings in adult populations are overviewed based on recent meta-analyses and systematic reviews. These include participants aged 18-24 and thus have some relevance to young people. This overview places in context the much smaller body of evidence specific to young people which is then reviewed in detail. Adolescent studies are also reviewed as again there is an overlap with the youth age group. Studies specifically focused on children (<12) or the elderly (>65) were deemed less relevant to this project and are not reviewed. Studies of online MT, of particular interest to this project, are discussed separately.

Mindfulness training in adult clinical populations

The ability to notice reactions to experience and choose not to become caught up in them is particularly relevant in chronic physical illness. Distressing thoughts and associated anxiety and depressive symptoms are continually generated in this context and may worsen outcomes. Addressing such associated psychological morbidity may lead to improved health outcomes and reduced health care costs, both directly and through enhanced patient self-management. The empirical studies in MT thus began with general medical patients suffering from a range of chronic conditions. A significant portion of the evidence-base to date remains in such populations.

Bohlmeijer et al. (2009) conducted a meta-analysis of eight RCTs (n=667) of MBSR for patients suffering chronic medical illness. Seven studies used a waitlist control group and one an education and support program. All except one study reported attrition rates below 25%. The analysis revealed a between-group effect size of $d=0.26$ for measures of depression ((95% CI: 0.18–0.34), $Z=6.2$ [p<0.001]) and $d=0.32$ for overall psychological distress ((95% CI: 0.13–0.50),
Z=3.36 [p<0.001]) both without heterogeneity (I²=0) and d=0.47 for measures of anxiety ((95% CI: 0.11–0.83), Z=2.57 [p<0.05]) with considerable heterogeneity (I²=53.95).

Ledesma and Kumano (2009)²³³ conducted a meta-analysis of studies of MBSR for patients suffering cancer. Ten studies (n=583) were included, only four of which were controlled. Six studies included patients with various cancer types in MT groups, while in four all patients suffered from the same malignancy. Breast cancer was the most common type across all studies. Mean attrition rate was 23%. A within group effect size of d=0.48 ((95% CI: 0.38–0.59, p<0.0001 [two tailed]) with adequate homogeneity ($\chi^2=-13.34, \text{df}=6$)) in mental health and $d=0.18$ ((95% CI: 0.08–0.28, p<0.0003 [two-tailed] with poor homogeneity ($\chi^2=28.72, \text{df}=7$)) in physical health measures was found.

Chiesa and Serretti (2011)²³⁵ conducted a systematic review of controlled studies of MT in chronic pain. They included 10 studies (n=951), four of which were RCTs. Four studies included an active control (CBT, progressive muscle relaxation, massage or group support). MT appeared to lead to a non-specific (e.g. possibly related to factors such as the shared group experience) beneficial effect on measures of pain and depression. A specific effect on pain acceptance or tolerance, day-to-day stress and quality of life was found. Beneficial effects were observed during follow-up for up to three years.

In psychiatric conditions, research in MBIs began 20 or so years later than in chronic general medical illness. Now, some of the most compelling MBI data relates to the prevention of relapse in previously depressed patients. Teasdale et al. (2000)²²⁸ performed a rigorously designed and well-reported RCT of MBCT in patients with major depressive disorder in remission. Patients with two or more previous episodes of depression in the MBCT group had a 37% relapse rate over the 60-week follow-up period as compared with 66% in the treatment as usual group. These results have since been replicated in another well-conducted RCT (36% vs. 78% relapse rate).²²⁷
Hofmann et al. (2010)\textsuperscript{240} conducted a meta-analysis of effects of MT on depressive and anxiety symptoms in a variety of medical and psychiatric patients. The meta-analysis included 39 studies (n=1,140). A pre-post within group effect size of $d=0.63$ for anxiety and $d=0.59$ for depressive symptoms was found. Higher effect sizes occurred for either symptom where patients suffered from a primary anxiety ($d=0.97$) or depressive ($d=0.95$) disorder. Sixteen studies included a control group, five of which were active – most commonly an illness education program. A previous meta-analysis by Grossman (2004)\textsuperscript{236} reported effect sizes of $d=0.54$ on overall psychological measures (between group in 10 controlled studies) and $d=0.70$ for anxiety (within group, 8 studies) and $d=0.86$ (within group, 5 studies) for depression.\textsuperscript{236}

Toneatto et al. (2007)\textsuperscript{229} conducted a systematic review of 15 controlled studies of MT where scales for depression and anxiety symptoms were used. They found that most studies reported improvements vis-à-vis no treatment. However, when active control conditions were used no significant additional benefit from MT was discernable.

Zgierska et al. (2009)\textsuperscript{239} reviewed studies of MT for substance use disorders. They identified 22 studies, seven of which were RCTs. The latter involved 383 patients followed for an average of 38 weeks post entry. A majority of RCTs reported positive findings (83%) when in per protocol analysis. This dropped to 50% if assessed with an intention to treat method, consistent with the very high dropout rate in this population. MT was beneficial in reducing substance use and overall psychological distress. The authors could not conclude however that MT was an effective form of treatment for substance use because of: the heterogeneity of the programs reported; the variety of methods used in assessment of outcomes; and differences in patient types.\textsuperscript{239}

Winbush et al. (2007)\textsuperscript{358} reviewed 38 MT studies that measured changes in sleep as an outcome. Only uncontrolled studies reported a statistically significant improvement in measures of sleep quality and duration. It is noteworthy
nonetheless, that improvement in sleep is one of the benefits most commonly reported by people who take up a new meditation practice.\textsuperscript{222}

\textit{Mindfulness training in adult non-clinical populations}

Most MT studies in all age groups have to date concerned clinical populations. Studies in non-clinical samples have been a relatively recent development with most dating from the late 1990s. Improvement in a variety of domains associated with enhanced mental health and well-being have been shown in intervention studies with mentally healthy participants. Examples are: overall psychological distress (measured using the Hopkins Symptom Check List-90,\textsuperscript{359} see Appendix A),\textsuperscript{360} depressive symptoms (SCL-90),\textsuperscript{360} anxiety symptoms (State-Trait Anxiety Inventory,\textsuperscript{299} see Appendix A)\textsuperscript{360} and relationship satisfaction and partner acceptance in couples (Quality of Marriage Index,\textsuperscript{361} among other measures including a daily relationship diary).\textsuperscript{362} Reduction in systolic blood pressure\textsuperscript{363} and enhancement of the immune response to vaccination\textsuperscript{319} are examples of salutary physical effects.

Chiesa and Serreti (2009)\textsuperscript{243} conducted a meta-analysis of 10 controlled studies of MT in healthy adults where a measure of stress was included. MBSR appeared to be at least as effective as established CBT-based relaxation training in reducing stress. In the subset of seven RCTs, a pooled effect size of $d=1.4$ was found for MT on measures of stress (vs. control conditions – $d=0$). The other benefit most commonly found across studies was reduction in symptoms of anxiety. The overall quality of RCTs was poor however due to absence of blinding and inadequate disclosure of randomization procedures used.\textsuperscript{243}

One study is notable as, unlike other research in non-clinical populations an active control condition was used. Jain et al. (2007)\textsuperscript{364} compared MT with a relaxation-focused intervention designed specifically to simulate it in structure and a no-intervention group (total n=83). MT and relaxation training were similarly superior to the no-intervention condition in improving measures of psychological distress. MT showed superior efficacy to the relaxation condition in increasing positive mood and reducing distracting, ruminative thoughts and
behaviours. Considering a three-way comparison was conducted, the sample size in this study is relatively small, which renders the validity of findings questionable.

**Quantitative studies of mindfulness in adolescents and young people**

While most MT studies concern adults a rapidly increasing body of evidence is accumulating for the benefits of MT in children and adolescents. A number of systematic reviews have now been published.\(^{329,365-367}\) No studies have specifically focused on young people (aged 15-24). A number of adolescent studies have included participants up to age 21\(^{313,352,368}\). These studies have the greatest overlap with the age group of interest in this project and are discussed first and in greater detail before adolescent studies are reviewed.

**Mindfulness training in young people**

Four studies could be identified that included both adolescents and young adults, thus loosely matching the population of interest in this project. They are considered individually.

Sibinga et al. (2011)\(^{352}\) conducted an MBSR program for HIV-infected and at risk urban young people (aged 13-21) in Baltimore (Maryland, US). In the 19 participants where complete pre-post data was available statistically significant improvement occurred in the hostility subscale of the SCL-90 (mean pre=54.7, post=45.6, p=0.02, SD not reported) and the discomfort subscale of the Child Health and Illness Profile - Adolescent Edition (CHIP-AE, pre=19.4, post=21.6, p=0.01, SD not reported). The study was conducted over 3 years with a diverse group of young people. Reporting of the method of statistical analysis was limited. Findings in this study are thus difficult to interpret.

Britton et al. (2010 & 2005)\(^{368,369}\) included five sessions of MT of 45 minutes duration within a six week intervention for sleep disorders in substance users (aged 13-19) in Tucson (Arizona, US).* The program also included cognitive

*The two papers cited represent different analyses of the same data set and are discussed together.
therapy, sleep hygiene education, bright light exposure, and stimulus control instructions. Twenty three of 55 original participants completed the study. A control group was not included. Scores on the Global Appraisal of Individual Needs – General Mental Distress Index improved following the intervention and maintained at up to one year follow-up (F (3, 37)=13.3, p<0.001; means not reported; ANOVA used to derive F-test score). No significant effect was found on sleep, except when comparing the subgroup who meditated as per homework assigned with those who did not. Of note was an increase in substance use initially. At 12 months follow-up however participants were found to have reduced substance use compared with other clinic attendees. It is difficult to determine how much of the effect in this study was due to MT. A number of disparate components had been included and no control group used.

Broderick and Metz (2009) conducted an MT program with 120 healthy adolescent girls (and 17 controls) aged 16-19 years (Suburban school in Pennsylvania, US – city not specified). It involved six weekly group sessions during which the following mindfulness skills were taught: body awareness; understanding and working with thoughts; understanding and working with feelings; integrating awareness of thoughts, feelings and bodily sensations; reducing harmful self-judgments; and integrating mindful awareness into daily life. Sessions included a short introduction followed by group discussion, in-session mindfulness meditation practice and debriefing. Participants were encouraged to practise at home with the aid of workbooks and CD's. Compared to the control group, participants showed enhancement in positive affect (PANAS – positive subscale effect size (ES); d=0.41), reduction in negative affect (ES d=0.57) and enhanced emotion regulation (DERS; ES d=0.28) following the intervention. The large disparity in group sizes makes interpreting findings difficult.

**Mindfulness training in adolescents**

All studies, including those with children, which included participants older than 12 and used a quantitative outcome measure have been summarized in Table 4.
Table 4 Quantitative studies of mindfulness interventions in children or adolescents which have included participants older than 12 years. Statistically significant findings only are presented; findings refer to pre-post data unless otherwise specified; effect sizes (Cohen’s d) presented where either reported by authors or could be calculated based on data provided; effect sizes are between group except in uncontrolled studies.

<table>
<thead>
<tr>
<th>Population</th>
<th>Study</th>
<th>Study design and country</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clinical or other specific difficulties</td>
<td>Schonert-Reichl and Lawlor (2010)(^{176})</td>
<td>RCT; waitlist control; n=246; age 9-13; 10 weekly MT sessions; Canada</td>
<td>Improvement in self-rated optimism (RI; (d=1.28)) and teacher-rated socially competent behaviour (TRSSC; (d=0.22))</td>
</tr>
<tr>
<td></td>
<td>Huppert et al. (2010)(^{114})</td>
<td>Waitlist controlled; non-randomized; n=155; age 14-15; 4 weekly sessions of MT; Britain</td>
<td>Improvement in well-being (WEMWBS) and resilience (ERS)</td>
</tr>
<tr>
<td></td>
<td>Barnes et al. (2004)(^{363})</td>
<td>RCT; health education control; n=73; age 11-13; 10 minutes of daily meditation in class for 3 months; US</td>
<td>Lowered resting and ambulatory systolic blood pressure; lowered ambulatory diastolic blood pressure; Lowered heart rate</td>
</tr>
<tr>
<td>ADHD</td>
<td>Zylowska et al. (2008)(^{312})</td>
<td>Uncontrolled; N=7; mean age 15.6 (mixed with 17 adults mean age 48.5); MBSR adapted for ADHD; US</td>
<td>Improvement in ADHD symptoms (SNAP-IV &amp; ARS-IV pooled results reported; (d=0.8))</td>
</tr>
<tr>
<td>PTSD</td>
<td>Catani et al. (2009)(^{371})</td>
<td>RCT; narrative exposure control; n=31; age 6-12; 6 sessions of meditation-based relaxation; Sri Lanka</td>
<td>PTSD recovery 81% in exposure, 71% in meditation</td>
</tr>
<tr>
<td>Learning disability</td>
<td>Beauchemin et al. (2008)(^{330})</td>
<td>Uncontrolled; n=34; age 12-18; 5 weekly MT sessions; US</td>
<td>Improved anxiety, social skills and academic performance</td>
</tr>
<tr>
<td>Population</td>
<td>Study</td>
<td>Study design</td>
<td>Findings</td>
</tr>
<tr>
<td>-------------------------------</td>
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<td>-------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td><strong>Academic difficulties</strong></td>
<td>Semple et al. (2010)(^{177})</td>
<td>RCT; waitlist control; n=25; age 9-13; 12 weekly sessions of MT; US</td>
<td>Reduced attentional difficulties (CBCL; (d=0.42)) in total sample, maintained at 3 months; reduced anxiety (MASC, STAIC) in those with elevated anxiety at pre-test (n=6)</td>
</tr>
<tr>
<td></td>
<td>Lee et al. (2008)(^{372})</td>
<td>Uncontrolled; n=25; age 9-13; 12 weekly sessions of MT; US</td>
<td>Improved total score and externalising problems on CBCL</td>
</tr>
<tr>
<td><strong>Externalising disorders</strong></td>
<td>Bögels et al. (2008)(^{373})</td>
<td>Non-randomized, waitlist controlled trial; n=15; age 11-18; adolescents with mixed diagnoses (ADHD, conduct disorder or autism) and parents; 8 sessions of MT; Netherlands</td>
<td>Self-report (CBCL) reduction in externalising behaviours ((d=1.1)), social ((d=0.6)) and attention problems ((d=1.1)); parent-report data not statistically significant</td>
</tr>
<tr>
<td><strong>Hypertension</strong></td>
<td>Barnes et al. (2008)(^{374})</td>
<td>RCT; n=66; age 14-16; African American adolescents; 10 minutes of daily meditation in class for 3 months; US</td>
<td>Lowered systolic blood pressure during and after school; lowered heart rate during school</td>
</tr>
<tr>
<td><strong>Psychiatric outpatients</strong></td>
<td>Biegel et al. (2009)(^{375})</td>
<td>RCT; health education control; n=102; age 14-18; 8 weekly sessions of MT; heterogeneous diagnoses; US</td>
<td>Improved anxiety (STAI present (d=0.71); STAI past (d=0.65)), depression (SCL-90 (d=0.74)) somatization (SCL-90 (d=0.91) obsessionality (SCL-90 (d=0.93); all (d) pre-f.u.)</td>
</tr>
<tr>
<td><strong>Incarcerated youth</strong></td>
<td>Himelstein et al. (2012)(^{376})</td>
<td>Uncontrolled; n=32 (data from 17 used); age 14-18; 10 weekly sessions of MT; US</td>
<td>Improved emotion regulation (HSRS (d=0.59)) and reduced perceived stress (PSS (d=0.29))</td>
</tr>
</tbody>
</table>

\(^{177}\) SNAP-IV Swanson Nolan and Pelham-IV scale for ADHD in adolescents;\(^{377}\) ARS-IV ADHD Rating Scale-IV;\(^{376}\) CBCL Child Behaviour Check List;\(^{379}\) ERS Ego Resiliency Scale;\(^{380}\) GAF Global assessment of functioning;\(^{381}\) MASC Multidimensional Anxiety Scale for Children;\(^{382}\) PSS Perceived Stress Scale;\(^{383}\) HSRS Healthy Self-Regulation Scale (West, 2008, unpublished) RI Resiliency Inventory (Song, 2003, unpublished); STAIC State Trait Anxiety Inventory for Children;\(^{384}\) TRSSC Teachers’ Rating Scale of Social Competence;\(^{385}\) WEMWBS Warwick-Edinburgh Mental Well-being Scale;\(^{93}\) f.u. follow-up
Summary, integration and limitations of quantitative evidence

Common to both adult and adolescent studies are positive effects of MT on depressive and anxiety symptoms, well-being and quality of life. Reductions in symptoms of specific disorders are also noteworthy (e.g. hyperactivity in adolescents and physical symptoms associated with cancer in adults). Symptoms of anxiety were reduced across both clinical and non-clinical populations in adult studies. Improved emotion regulation and behavioural outcomes were particularly highlighted (or measured as such) in the younger age groups studied. Few studies used active control conditions. MT was slightly to moderately more effective when compared with active control (most commonly relaxation training), with the exception of the PTSD study in adolescents where it was inferior to exposure based treatment.

As detailed in Table 4, only three studies could be found for younger participants without diagnosed clinical disorders or academic or behavioural difficulties. While improvements in similar domains occurred, considering the small number of studies, overall comparison with clinical studies is not meaningful.

No epidemiological studies have been performed in young people to study developmental changes in trait mindfulness or its correlation with the emergence of psychological morbidity. As discussed earlier, mindfulness is a tendency that grows with maturation. Executive functioning and emotion regulation ability are known to improve markedly in this period also. It may thus be difficult to separate the effects of MT from normal maturation on improvements in measures of either mindfulness or these other attributes of interest.

No meta-analyses of MT studies in adolescents or young people have as yet been reported. This is understandable considering the small size of the evidence base. High quality RCTs are yet to be performed in those less than 18 years of age. As such, it is difficult to be confident about measurable benefits of MT for younger persons. While currently available studies are suggestive of such benefits they
often have: small sample sizes; no control groups; no or limited random allocation (e.g. dividing a school into classes which are then randomized to intervention or control conditions); and MT programs which are designed for and thus unique to the study – often with limited description provided. It is also therefore difficult to quantify differences, if in fact present, in efficacy of MT between younger and adult participants. Future studies with a large sample size and rigorous RCT design are required to determine the true degree of benefit from MT in younger persons. A large sample size is particularly important when long-term follow up is used so that the relative contribution of maturational effects noted above may be examined.

The body of quantitative evidence in MT in adults has also attracted considerable criticism on methodological grounds such as: small sample sizes; lack of control groups; use of non-intervention control groups thus disallowing detection of a specific effect from mindfulness; inadequate follow-up; use of non-standardized measures; absence of measures of mindfulness; and a lack or inadequate reporting of randomization and blinding.

In addition, meaningful comparison between trials is made difficult by: inadequate description of programs when previously described MBIs (e.g. MBSR or MBCT) were not used; differences between exactly how MT was delivered (e.g. session length or program duration); heterogeneity of participants between (and sometimes within) studies; and variability of effects within the same population.

Evidence is conflicting about the relationship between several aspects of MT and effectiveness: duration of training sessions; engagement with homework practice; and overall amount of meditation experience. In the meta-analysis noted above, of studies that included measures of depressive and

* See ‘Challenges in evaluation’ (page 60) for a discussion of the difficulties in measuring mindfulness accurately.
* The evidence regarding the length of home meditation practice is discussed in greater detail in ‘7.4.2. Home practice: Balancing authority and flexibility’, page 242.
anxiety, Hofmann et al. (2010) found no overall effect from duration and frequency of meditation practice. In most of the studies reviewed in this chapter participants’ engagement with homework was not reported. In the one study of adolescents where it was, a positive correlation was found between improved well-being and amount of meditation practice.

Groups of up to 30 participants may be conducted by one facilitator, which suggests that it may be a relatively low-cost intervention. However, the best researched example, Mindfulness Based Stress Reduction (MBSR, see page 67), is extremely resource intensive. It requires 27 contact hours with participants and highly trained facilitators with their own personal mindfulness practice of several years’ duration. No compelling evidence as yet exists regarding the cost-effectiveness of MT. An encouraging result is provided by one study in which the reported number of medical visits in patients suffering chronic physical illness in the year following an MBSR program was reduced by 27% (p=0.03). The possibility of an experienced facilitator reaching a large audience using the Internet makes online delivery of MT attractive from a cost perspective.

1.3.6. Mindfulness training and the Internet

[This is a rapidly changing area. This project was begun and ethics applications completed based on information available until mid 2009. Below, information available until mid 2012 has been collated.]

Instructions for mindfulness meditation or applying mindfulness in daily life are quite simple and can be presented in text, video or audio format. Mindfulness teachers require extensive personal and professional training (see ‘Challenges in delivery’, page 59). Considering the potential that MT has as a community-wide health promotion approach, the Internet may seem, at first glance, to be a useful medium to maximize dissemination.

The World Wide Web is in fact replete with opportunities for learning mindfulness meditation. Over 349,000 hits resulted using the text string ‘mindfulness meditation exercises’ in the Google search engine (June 2012).
Almost all teaching is offered free of charge. Information is very rarely modular (i.e. structured as a program with activities scheduled over days and weeks). This contrasts with most face-to-face mindfulness training programs which have a structured mixture of didactic teaching and homework that change over several weeks.\textsuperscript{254}

In an attempt to provide MBSR to those who cannot attend classes, an online program is available at www.mindfullivingprograms.com at a cost of US$495. Classes are facilitated live by a suitably certified teacher and include 27 hours contact time as in face to face MBSR. The program thus uses the Internet as a video-conferencing tool to allow a regular MBSR course to be held. This does not represent an ‘online program’ as such. That usually signifies educational resources being available on the Internet for use at any time. Other examples of quality online mindfulness training available to the public have been collated in Appendix F.

Engagement with mindfulness practice takes effort. Part of the benefit of MT programs is in being part of a group. The motivating and otherwise supportive influence of a live facilitator and group are difficult to replicate online. Also a key part of the learning process is discussing difficulties with the facilitator and learning from such discussions the facilitator may have with others in the group. These potential difficulties, in light of the fact that such a volume of training resources are actually available, makes evaluation of benefits a priority. Also, modular programs designed with a view to overcoming these challenges and informed by preferences of potential users would seem desirable. Surprisingly, there were very few published evaluations of the efficacy of teaching mindfulness online before this project was established (2009). These are discussed first before studies that have since become available are summarized.

**Research on online mindfulness training available to inform project planning**

Two doctoral theses and one refereed journal publication had reported mindfulness training via the Internet prior to mid 2009. Only abstracts were
available for the theses. Both authors were contacted via email. One responded initially but soon after was no longer contactable. The other did not respond.

- **Houghton (2008)** conducted an RCT with 25-55 year old female participants using an eight week program designed to simulate MBSR. Improvements in participant anxiety level and subjective well-being were reported.

- **Arana (2006)** conducted an RCT with 22 patients diagnosed with social anxiety disorder. She was able to demonstrate reduced social anxiety, reduced general anxiety symptoms, reduced depressive symptoms and improvement in subjective well-being following the intervention.

The only published study, by Meyer et al. (2009), involved an RCT with 396 depressed patients using a CBT program with a small MT module included. There was a 55% retention rate in the study as a whole. Statistically significant reductions in participants’ depressive symptoms (Beck Depression Inventory) and improvements in psychosocial functioning (Work and Social Adjustment Scale) were found and maintained over six months follow-up. MT was not the central aspect of the program which thus cannot be classified as an MBI. Results are therefore not directly informative regarding the efficacy of teaching mindfulness online but add to the evidence base regarding online psychological interventions in general (see ‘1.2.3. The role of technology’, page 41).

*Research reports available following establishment of this project*

Studies published since project design was submitted for approval by the institutional ethics committee have been summarized in Table 5. Currently in progress are two large trials of online Mindfulness-Based Cognitive Therapy (eMBCT; Segal, Z., personal communication, 2012) and online Mindfulness Based Stress Reduction for patients living with cancer (eCALM; Carlson, L., personal communication, 2012).

*See ‘Common mindfulness training programs in psychology and medicine’ (page 56) for a discussion regarding what constitutes a true mindfulness based intervention.*
A key concern regarding delivery of online MT is adequate engagement and retention of participants.* The pattern in the studies found in this review is mixed and appears highly dependent on the study methodology:

- Mitchell et al. (2012)\textsuperscript{397} who recruited a large number of 'healthy normal' volunteers through public advertising on the internet and provided a fully automated intervention, found an attrition rate of 89%.
- Gluck et al. (2011)\textsuperscript{398} also used an automated program but found an attrition rate of 5% only. The duration of this program was shorter and participants were mainly recruited through emails to personal networks of researchers.
- Ljótsson et al. (2010 & 2011)\textsuperscript{399,400} found low rates of dropout in both the initial and 15-18 months follow-up periods (5% at each stage). They interviewed each patient by telephone however, and only a subset of initial applicants (n=198) were entered into the study.
- Thompson et al. (2010)\textsuperscript{401} reported drop out of 25% in their mixed sample of telephone and internet delivery of MT. In both groups participants had the opportunity to discuss difficulties with each other and the facilitator which may have encouraged engagement.
- Krusche et al. (2012)\textsuperscript{402} reported results from the first 100 participants who completed the program. No data is presented as to how many participants began but later withdrew. The aim was to evaluate an online MT program just established by a well-known charity in the UK. The study was unusual in that participants were charged a fee of £40 for the program. This is likely to have selected a motivated sample. Any member of the public was free to undertake the program and all were required to provide consent to anonymous data being used in any way desired by researchers.

* This is an important issue in all e-health interventions and is discussed in detail ‘Limitations of online psychological interventions’, page 42.
Table 5: Studies of online mindfulness training published June 2009 to June 2012

<table>
<thead>
<tr>
<th>Population</th>
<th>Study</th>
<th>Design and country</th>
<th>Mindfulness program</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>No clinical disorder</td>
<td>Krusche et al. (2012)</td>
<td>Uncontrolled; n=100; age 28-72; UK</td>
<td>10 sessions over 4-6 weeks based on MBSR and MBCT; fully automated with extensive video content supplemented by automated emails</td>
<td>Reduced stress pre-post and at 1 month follow-up (PSS)</td>
</tr>
<tr>
<td></td>
<td>Mitchell et al. (2012)</td>
<td>RCT; MT vs. two positive psychology interventions vs. waitlist; n=623 (72 complete data sets); age 18-79; Australia</td>
<td>3 weekly modules 10-20 minutes each; fully automated text, graphics and audio</td>
<td>MT only intervention to lead to improvement in anxiety (DASS; pre-post and up to 3 months); pre-post improvements in satisfaction with life (SWLS), psychological well-being (PWBS, PWI; maintained at 3 months) and stress (DASS) also occurred in MT as well as other active groups</td>
</tr>
<tr>
<td></td>
<td>Gluck et al. (2011)</td>
<td>RCT; MT vs. waitlist; n=49; age 20-73; Switzerland</td>
<td>12 modules of 20 minutes duration over 2 weeks; fully automated text, video and audio</td>
<td>Improvement in stress (PSQ) and mood (PANAS)</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>Thompson et al. (2010)</td>
<td>RCT; MT vs. waitlist; n=40; age &gt;18 (mean=36); US</td>
<td>MBCT; 8 weeks; delivered by telephone conference or online video conference; online content supplemented by online discussion forum and phone and email access to facilitator</td>
<td>Improvement in depressive symptoms (BDI) vs. control; no difference between telephone and online delivery</td>
</tr>
<tr>
<td>Irritable bowel syndrome</td>
<td>Ljótsson et al. (2010; 2011)</td>
<td>RCT; MT vs. online discussion forum; n=85; age 20-61; second paper reported 15-18 months follow-up, n=75; Sweden</td>
<td>10 week program including MT and CBT modules specific to education and coping with IBS symptoms;</td>
<td>Improved IBS symptom severity (GSRS-IBS), quality of life (IBS-QoL), depressive symptoms (MADRS-S) in MT group vs. control; maintained at up to 18 months follow-up</td>
</tr>
</tbody>
</table>

BDI Beck Depression Inventory, DASS Depression Anxiety Stress Scale, IBS-QoL Irritable Bowel Syndrome Quality of Life Instrument, GSRS-IBS Gastrointestinal Symptoms Rating Scale-Irritable Bowel Syndrome, MADRS-S Self-Assessment version of Montgomery Åsberg Rating Scale for Depression, PANAS Positive & Negative Affect Schedule, PSQ Perceived Stress Questionnaire, PSS Perceived Stress Scale, PWI Personal Well-being Index, SWLS Satisfaction With Life Scale.
Summary and limitations of online mindfulness training studies

The evidence base regarding online MT remains extremely small. Studies vary greatly in rates of attrition, methods of recruitment, and MT program design, duration and delivery. These factors make confident interpretation of findings difficult. Published studies could not be located: with participants younger than 18; where qualitative evaluation was reported; or where program development rationale and methodology were described.

With the above in mind, it appears however, that improvements on a similar range of domains as in face to face studies have been found (e.g. depressive, anxiety and stress symptoms as well as quality of life). Rates of attrition appear to be modifiable depending on recruitment method and program design.

1.4. Part 3: Defining optimal program characteristics

Quantitative and qualitative studies that included participants between 15 to 24 years were reviewed to uncover ways in which MT had been tailored to young people. Almost all studies had either used an adult MT program, or components from it, often without reporting specifically regarding modifications. This has been pointed out as a concern in published reviews of the literature.\textsuperscript{366} Where de novo programs had been devised for youth, the process of program development and the rationale for inclusion of various components had not been delineated.\textsuperscript{313,409} Published reports of an iterative or participatory approach – where feedback from potential or previous users informed design – were not available.

Where reported, common characteristics of MT for younger participants that appeared to distinguish them from adult programs were as follows:

- Expectation for home meditation practice was reduced in comparison with adult programs (e.g. 0-15 min/d versus 45-60 minutes in MBSR\textsuperscript{312,410}).
- Session duration was shorter (e.g. 45 min versus 2.5 hours in MBSR\textsuperscript{411,412}).
• Session discussion content was relevant to daily life concerns of young people, though these were often not specified in detail (e.g. Beigel (2009)\textsuperscript{375}).

• Parents were included (though common in studies with children,\textsuperscript{329} it was reported in only one study that included adolescents\textsuperscript{373}).

Thompson and Gauntlett-Gilbert (2008)\textsuperscript{409} have made recommendations as to how adult programs should be modified for children and adolescents. Their suggestions are based on a review of published studies and extensive clinical and MT experience:

• \textit{A greater ratio of explanatory to experiential teaching}: It can often be fruitful to ask adults to participate in a group exercise without any prior explanation (e.g. mindfully eating a raisin as is done in the first session in MBSR). Young people however, would seem to engage better if the rationale had been clearly explained first. Additionally, use of age-appropriate metaphors may help communicate concepts associated with mindfulness more effectively (e.g. seeing the wandering mind as a puppy which one is training to sit still – there is no benefit or justification for being angry with it when it becomes distracted and runs away\textsuperscript{409})

• \textit{Foci of mindfulness practice which are age-appropriate and attractive to a younger audience}: Examples are receiving and sending mobile phone text messages mindfully, or using pieces of music to help enliven a mindfulness of sounds practice.

• \textit{Ensuring variety}: Working with one meditation practice from one session to the next can help consolidate the skill taught. Striking a balance with variety can help maintain interest and motivation. It appears that greater variety is required when teaching younger participants.

An established local model of MT designed for adults appeared to have many of the characteristics just outlined. The Stress Release Program,\textsuperscript{252} noted above

\begin{itemize}
  \item In this form of meditation attention is repeatedly returned to sounds instead of, for instance, the breath.
\end{itemize}
introduces participants to: how stress was generated in day-to-day life; how mindfulness could lead to its reduction; meditation practices such as awareness of the breath, body sensations and sounds; and specific ways to apply skills learnt in day-to-day life. It had been designed by Dr Craig Hassed, a general practitioner and Senior Lecturer at Monash University. He had over 20 years’ experience in teaching meditation including to high school and university students.

The SRP is a simply structured program vis-à-vis common adult programs (e.g. MBSR). It is shorter (6 vs. 8 weeks in MBSR), and requires less contact hours (12 vs. 27), and less homework (10-20 minutes vs. 45-60). It focuses on teaching the core skill of mindfulness meditation and its application to daily life. It does not include some of the practices (e.g. yoga) or exercises (e.g. clarification of values) presented in MBSR. This simplicity was thought to be of more appeal to young people and improve flexibility and usability. It also reduced human resource requirements and costs. This was of particular interest in this project which aimed to develop a program in both live and online editions.

Another attractive feature of the SRP was that its author, Dr Hassed was available and eager to both help tailor the program for the youth population and to facilitate a pilot version. The program was thus chosen as a blueprint for this project. Dr Hassed’s previous extensive experience of teaching mindfulness with this age group enriched the process of adaptation of the SRP for young people as described in ‘Tailoring the SRP to young people for live and online delivery’, page 128.

1.5. Summary and integration of background

Young people, that is those aged 15-24, face important and often stressful transitions in roles and relationships. At the same time the brain is undergoing changes that may make regulation of associated emotions more difficult. These are key factors among many contributing to disproportionately high rates of distress and overt psychological disorder in youth. Many do not seek
care, as they fear being stigmatized and often do not find services suited to their needs.

Mental health promotion is thus particularly important for this age group. In its broadest sense MHP includes improving positive mental health and well-being of all young people as an important complementary strategy to illness-focused prevention, treatment and early intervention. Health promotion is best not limited to the health sector, particularly when concerned with young people. Aiming for health promoting educational environments is desirable but is associated with human resource and curricular challenges. Youth MHP is ideally conducted in a flexible way, in a variety of settings, informed by professionals from different disciplines.

Young people relate to the Internet as a setting in which to conduct life rather than merely as a tool. To be most relevant to the lives of young people, modern MHP and treatment of mental health problems can take advantage of technology. The evidence for benefits of online psychological interventions is compelling. Accessibility, cost and fear of stigma are among some of the barriers to the face to face approach that may be overcome online. However, to be borne in mind are drawbacks such as: high attrition rates; fears about information privacy; the risk of cyber-bullying; and difficulty in responding to critical mental states. Overall it may be best to conceive of online program provision as an adjunctive or parallel activity to, rather than replacement for, face to face delivery.

A participatory approach to designing MHP programs can lead to a higher likelihood of uptake by youth. Greater user-friendliness and higher efficacy can result as well as a sense of contribution for participants. This is the case in both face to face and online approaches.

Mindfulness is a way of living that gives primacy to awareness of present-moment experience. Greater awareness of thoughts and emotions allows letting go of unhelpful cognitive elaborations of and reactions to experience.
While an inherent tendency, it may be enhanced by training in a variety of formal and informal meditation practices.\textsuperscript{29} It has roots in spiritual and philosophical traditions concerned with the well-being of all, rather than based on a therapeutic paradigm focused on those who suffer clinical disorders.\textsuperscript{15} The fundamental goals in MT are as such similar to MHP.\textsuperscript{241}

Positive correlation between measures of mindfulness and mental health have been demonstrated.\textsuperscript{107} Intervention studies have shown that mindfulness training can lead to a variety of benefits with comparable efficacy to established psychological interventions.\textsuperscript{243} Greater well-being, improved quality of life and reduced symptoms of anxiety and depression are the most common results of MT.\textsuperscript{11} While the evidence base in young people is much smaller, a similar range of benefits to those in adults has been found.\textsuperscript{329}

Mindfulness and emotion regulation are overlapping constructs.\textsuperscript{14} MT has been shown to improve emotion regulation, including in younger persons.\textsuperscript{329,365} It has been advocated as particularly relevant to young people because of the critical nature of emotion regulation at this developmental stage.\textsuperscript{14} MT can lead to improvements in decision-making ability and interpersonal skills\textsuperscript{309,311} which are other important aspects of ‘social and emotional learning’.\textsuperscript{27}

There are possible conflicts between commonly studied adult MT programs and current youth culture (e.g. busyness,\textsuperscript{327} and a tendency to multi-task\textsuperscript{326}) Nonetheless most MT studies in young people have used adult programs without significant modification or elaboration of the rationale for changes made.\textsuperscript{366} No published reports are available that describe a participatory approach to MT program design for youth.

There are important challenges in evaluating MT authentically.\textsuperscript{279} Mindfulness is best understood experientially.\textsuperscript{12} It is a multi-faceted tendency that does not lend itself well to quantitative measurement.\textsuperscript{278} Qualitative methodology is as such critical to meaningful evaluation of programs.\textsuperscript{279} However, few qualitative
studies, a number of which have significant limitations, have been undertaken in MT particularly in young people.

Currently available qualitative data indicates that there is a great degree of overlap between the experience of adults and younger persons. The commonly described effects of MT include greater awareness and acceptance of, and a broader perspective on, present-moment experience. Reduced distress and its impact on life, and the benefits of participating in a group have also been highlighted. No previous qualitative studies of a group of young people without a specific clinical or other problem could be found in this review. Limited reports are available in any age group of systematic comparisons of qualitative and quantitative data to shed light on possible mechanisms underlying changes in scale scores.

Accreditation as a mindfulness teacher requires significant personal and professional preparation over a number of years.\textsuperscript{262} The possibility of a teacher reaching a wide audience makes online MT an attractive prospect. Despite the wide availability of MT on the Internet formal evaluations have only recently begun to emerge. They indicate that this modality can indeed be effective in improving measures of mental health. Published reports of online MT in young people are not available. No studies in any age group could be found that had taken advantage of a participatory approach to design in order to enhance user-friendliness and efficacy.

1.6. Aims

Critical questions regarding MT in young people remain unanswered: What shape would a program take when co-designed with young people? How would a group of young people, not chosen because of a specific clinical or other problem, understand and apply mindfulness practice? What could be the mechanisms that underlie any effects associated with mindfulness training?
The aim in this project was to design an MT program suitable for any young person* (aged 15-24 years) in both face to face and online editions. It took advantage of the opportunity to collaborate with: (1) an internationally recognized leader in MT, Dr Craig Hassed; and (2) the Inspire Foundation, a pioneer in online MHP and the participatory approach, (see page 107).

An evaluation of feasibility, acceptability and experience of MT in this age group was a central element informing design. Specific objectives were:

1. To devise an MT program for young people, including an online edition, informed by a review of the literature and discussion with experts.
2. To consult with a group of young people naïve to mindfulness to obtain and integrate their views about the feasibility, acceptability and ideal characteristics of the proposed program and evaluation strategy.
3. To conduct a pilot trial with a group of young people to:
   a. Test the feasibility and acceptability of the draft program and evaluation strategy;
   b. Obtain feedback about how the program may be improved for future face to face delivery and online translation;
   c. Shed light on the lived experience of young people working with the ideas and practices of mindfulness, through a qualitative analysis of interviews, a focus group, and text data obtained through repeated administration of questionnaires; and
   d. Obtain video footage that can be used as content in a future online version.
4. To integrate the results of (1)-(3) above and define the optimal characteristics of an MT program for young people in:
   a. A live edition, ready for delivery; and

* Consistent with the universal health promotion paradigm that informed this project the program is not designed for those with a particular clinical or psychosocial problem but aims to have broader applicability. Nonetheless the program would not be suitable for those with very severe mental or other disorder or inadequate command of English which can interfere with participation (see also ‘4.1.1. Sampling’, page 156).
b. An online edition, to guide future development of a professionally constructed website.

As discussed in this chapter, high quality, large scale RCTs in adolescents and young people are highly desirable to expand the limited evidence base currently available.\textsuperscript{329,365-367} No study previously reported has included a thorough development phase responsive to the needs of this particular population. Fulfilling the above aims was considered necessary as a foundation to improve the quality and validity of future RCTs of MT in youth.
Chapter 2 Overview of methods

This chapter first outlines the rationale for the various project activities. Collaboration with the Inspire Foundation, a youth MHP organization, is then discussed followed by how a participatory approach was applied in this project. Evaluation strategies used are described both to illustrate why they were selected and to provide technical details. The chapter ends with ethical considerations and the training undertaken by the author to inform the project.

2.1. Rationale for project activities

To answer the research questions (see page 102) a participatory, mixed methods research program with several components was devised. Several stages of design and feedback were envisaged to ensure that the final MT program would be feasible for use in and acceptable to young people in both live and online editions.

- **Study 1: Designing the Mindful Awareness Training and Education (MATE) program** An initial version of both face to face and online editions was required as a background and aid to consultation. Using freely available web design tools, a prototype website for the online version was constructed. To minimize bias, young people naïve to MT were recruited for initial consultation. This meant that before being tested in a pilot trial, the program was already informed by young people. Input from young people about not only the training content but also the approach to evaluation was sought, as the resulting MATE Version 2 was intended to allow continuing research.

- **Study 2a: Pilot trial of Live MATE Version 2** The program informed by initial consultation was then trialled, in its face to face edition, with a newly recruited pilot group of participants. Quantitative and qualitative data were used to evaluate the feasibility and acceptability of the program. An initial analysis of qualitative data focused on feedback regarding optimal MT program design and its translation to the online environment. This data, from participants who had practised mindfulness, expanded what was learnt from
mindfulness-naïve consultees in Study 1. Video-taping generated content for a potential future website for the program.

- **Study 2b: Developing an explanatory model of experience** An in-depth analysis of qualitative data about the experience of mindfulness itself rather than that of the MATE program was then conducted. The aim was to shed light on the participants' understanding of mindfulness as a construct and a practice. This enhanced the delineation of possible mechanisms for reported benefits or adverse effects.

- **End product 1: The Live MATE program** Integration of data from Studies 1 and 2 allowed a refined *live* edition of the MT program, built bottom-up, to be designed. It is now available for use in service delivery or research by a suitably qualified facilitator.

- **End product 2: An outline of optimal web design for online MATE** Previous literature (see page 45) indicated that a professional and robust 'look and feel' is essential for the *online* edition of such a program to be acceptable to this age group. The feedback from participants in both Studies 1 and 2 confirmed this. Necessary funds, time and resources were beyond the scope of this project. Although a pilot trial using the draft website created for the consultation (Study 1) was possible, this was not undertaken as results were likely to be misleading. Considering its draft nature, it did not have some of the features essential to ensuring attractiveness to young people. Feedback

*The necessary elements are: high quality video, audio and graphics; automated registration process; individualised feedback about outcome measure scores; automated email reminders; online data collection that was reliable and communicated securely with database management software – to prevent data loss and to satisfy ethical requirements for research data security; and adequate bandwidth to allow streaming and downloading of video and audio content by simultaneous users. Cost estimates to allow inclusion of above were obtained from Information Technology (IT) service providers at the institution where this project was held and researchers experienced in e-health program development. These ranged from A$40,000-$100,000 to deliver MT with the necessary specifications derived in this project (see page 212).*
obtained in Studies 1 and 2 were used to help define characteristics of an optimal online program. Text, audio and video material developed for or obtained in the pilot trial formed the intellectual content. The collaboration with the Inspire Foundation means that in future professional IT personnel could take advantage of the design blueprint and content material thus created. Such a professionally developed program could then be piloted to allow a useful understanding of how young people engage with online MT and inform refinements.

These studies prepare the ground for rigorous RCT evaluation of both the live and online editions in future.

2.2. Collaboration with the Inspire Foundation: Reachout.com

The Inspire Foundation was established in Australia in 1996. It aims to use information and communication technology for mental health promotion. An initial focus on suicide prevention was soon expanded to include: mental health literacy (over 200 fact sheets); forums for peer support and moderated sharing of information; online games to build emotional skills; and guidance for young people wishing to access face to face mental health services.\(^{415,416}\) From the outset the Foundation strategy was to engage young people at all stages of design of resources to ensure user-friendliness and relevance.\(^{182}\) A large number of paid staff came to be young people themselves, including those who had used Inspire resources for their own mental health difficulties previously.

Between going live in 1998 and 2007, Reachout.com, the flagship website of the Foundation, had recorded 7.3 million unique user visits.\(^{182}\) Fifty percent of Australian young people had heard of Reachout.com by 2009 and 80% of users reported finding it helpful and that they would refer a friend to it (Graham, K. – Executive Director of Inspire Foundation – 2009, personal communication). The site includes a sophisticated online game, Reachout Central, aimed at enhancing emotional, social and coping skills. It has been shown to improve mental health literacy and help seeking behaviour in a sample of 266 participants.\(^{415}\)
Reachout has been adopted in Ireland (ie.reachout.com) and the US (us.reachout.com) following its success in Australia. The Foundation also previously hosted beanbag.com.au and actnow.com.au that provided opportunities for young people to share experiences of their difficulties and engage in community and volunteer activities.

At the commencement of this project, one of the co-supervisors (Associate Professor Jane Burns) was the Director of Research at Inspire. The Foundation aimed to include an increasing variety of modules focused on positive mental health on their site. This could reduce any stigma associated with visiting the site (i.e. young people would recognize that they did not have to be unwell to want to engage with Reachout). More importantly, it addressed a vision to provide true mental health promotion (i.e. to improve health, well-being and function even for those who did not suffer clinical disorders).

A participatory approach to design of a well-being intervention, as envisaged in this project, matched the established practice and future strategy at Inspire. As noted in the Introduction, one of the project aims was to arrive at a design blueprint for an online edition of the MT program being developed. This could be used in future by Information Technology (IT) staff at Inspire to establish a mindfulness module for Reachout. The Foundation executive thus eagerly approved for study advertisements, information about mindfulness and an online forum to be hosted on Reachout.com.

2.3. Applying a participatory paradigm

This project began with a researcher agenda informed by a review of the literature. The following a priori assumptions were held: (1) well-being is important to or a worthwhile objective for young people; (2) they would be interested in a formal course or intervention to improve it; and (3) MT would be an acceptable form of intervention in face to face and online editions. To ensure that these assumptions were not misguided, and to obtain initial suggestions regarding optimal program design, the project began with the consultation in Study 1.
Inherent to the consultation process is a balance of power biased towards adult researchers.\textsuperscript{207} They determine the questions to be asked and how to use the information thus obtained. Nonetheless young people, when asked about their views of consultation research, saw this form of participation as very valuable.\textsuperscript{205} Best practice in consultation with young people should ideally be: inclusive of a wide variety of participants; motivated by a genuine interest in making use of their views; have a clear purpose that is well communicated to them; and is respectful of them as making an important contribution.\textsuperscript{205}

It was aimed to address these issues in Study 1 by: a recruitment strategy that was broad in reach; providing clear and extensive written and verbal communication about the scope and value of the process; incorporation of participants feedback into the eventual program; and a research article that elaborated how this was conducted (see also ‘3.1.2. Consultation with young people’ in Study 1, page 138). Importantly not only program content, but also the proposed evaluation strategy was included in this consultation. In this way some attempt was made to involve young people as co-researchers.

In Studies 2a and 2b data were collected in a wide variety of ways from participants in the pilot trial of the MT program that resulted from Study 1. Learning from participants how the program could be improved was stated as an overt goal at commencement. Input was sought about all aspects of the program from the way participants had been recruited to the evaluation strategy itself. What was learnt from all three studies was incorporated into the final design thus ensuring that all elements were in part shaped by young people.

\textbf{2.4. Choice of evaluation strategies}

As discussed previously, little qualitative research regarding MT in young people has been conducted leaving important gaps in knowledge. In this project, a mixed methods approach, sometimes termed ‘methodological triangulation’,\textsuperscript{355} was deemed ideal. It was the best way to shed light on mechanisms of
benefit of mindfulness as well as to facilitate the participatory approach to program design and refinement.

Mixed methods research uses two or more methods of data collection or analysis to answer complex questions.\(^{417}\) Most commonly, both quantitative and qualitative evaluation is used simultaneously within the one study.\(^{418}\) The increasing application of mixed methods indicates a growing recognition of the limitations of quantitative research.\(^{419}\) Addition of qualitative enquiry is likely to: clarify aspects of participant experience which may be otherwise obscured; and confirm the validity of quantitative findings.\(^{420}\) Mechanisms of changes in outcome measure scores could also be better understood using qualitative methods.\(^{421}\) As discussed above (see page 24), use of qualitative methods is particularly important in MHP research.\(^{54}\)

**2.4.1. Qualitative evaluation**

Qualitative enquiry had two separate though related aims in this project: (1) to obtain feedback regarding program design; and (2) to understand how young people experienced mindfulness practice. Four separate activities were planned to achieve these objectives:

1. *Initial consultation with MT-naive young people:* Semi-structured interviews to gain insight into the ideal design of a potential MT program
2. *Focus group and in-depth interviews with MT pilot trial participants:* Another iteration of program design feedback; data on participants’ experience and understanding of the mindfulness concept and meditation practice
3. *Online questionnaire:* Designed following initial qualitative enquiry in (2) to both check validity of findings and to gather additional data
4. *Written feedback:* Collected before, weekly during, after, and at six week following the MT program.

* NB Two different groups of young people were separately recruited for 1 (i.e. Study 1) and 2-3 (Study 2).
Thematic analysis was chosen as a way to categorize data regarding ideal program design in Studies 1 and 2a. 'Thematic analysis' has variously been used to signify: (1) iterations of discerning patterns or ‘themes’ in data used as part of any qualitative paradigm (e.g. in grounded theory as below); or (2) an analytic paradigm in its own right. In the latter sense, as used here, it involves a search across the entire collection of text that constitutes the body of data to determine the presence and boundaries of any patterns of meaning.

In contrast, to help arrive at an explanatory model reflecting young people's experience of mindfulness itself in Study 2b, a grounded theory (GT) approach was chosen. Such a model could contribute to understanding the mechanisms of any changes reported as a consequence of practice. GT was devised by Glaser and Strauss (1967) as a way to extend pure ethnography. It goes beyond detailed descriptions of participants and delineation of patterns to generate a unifying story or explanatory model termed ‘theory’. Theories thus derived allow a deeper understanding of what had been observed.

Two schools of GT application each led by either Glaser (1978) or Strauss and Corbin (1990) have evolved. The former emphasizes induction, and the latter a systematic approach to ensuring validity. GT has been criticized as an interpretative exercise that may add an additional layer of bias to that already inherent in descriptive qualitative research.

In Study 2b the approach of Strauss and Corbin (1990) which aims to address this issue. It does so through an iterative process. Each stage of data collection is followed by a preliminary analysis and derivation of emerging themes (or ‘categories’ as termed in GT) and possible over-arching explanatory models (i.e. ‘theory’). These then inform the next stage wherein they may be modified or refuted by participants. The eventual explanatory model is thus likely to have some validity grounded in participants' own contribution to the analytic process. A multiplicity of data collection approaches and time points were planned in this study to allow this iterative process to occur.

* Including transcripts of interviews or focus groups.
The choice and characteristics of the key data collection strategies will now be outlined. The analytic process has been presented in detail in the methods sections in the chapters relevant to Studies 1, 2a and 2b.

**Individual qualitative interviews**

**Why were interviews chosen?**

Interviews can provide rich insights into people’s views and feelings about experiences and the meanings they ascribe to those. They are the most common data collection method in qualitative research. The gold standard for reducing bias and maximizing detail are interviews conducted face to face, audio-recorded and transcribed.

The social sciences were originally concerned with observation of interactions and behaviour. The use of interviews has been influenced by an increasing interest in the last century in people’s unspoken or unacted inner world. An interview allows relative privacy and the intimacy of a one to one social context. Arguably a deeper understanding of an interviewee’s inner life can be gained than if observed in day-to-day life or even as a participant in a focus group. While a respectful and considerate approach is necessary in all interviews this is particularly important when the interviewee is a member of a group with specific needs, such as a young person.

The predominance of interviews as a qualitative research tool has been criticized in comparison with ‘naturally occurring data’. The latter is gained by observing and noting people’s speech and behaviour, ideally without them being aware. The researcher’s presence thus has less or no influence on such data. People can be studied as they truly are rather than in the contrived social atmosphere of an interview. Interviews are commonly used nonetheless, either because it is not practical or ethical to observe people’s behaviour in the context of interest. Also, at times the research question necessitates eliciting people’s subjective account of their behaviour or experience.
Interviews were deemed necessary in this project as: (1) participants' inner thoughts and feelings were highly relevant to the researchers' understanding of their experience of mindfulness practice; and (2) they may have been uncomfortable with discussing their experience in the group (e.g. out of a desire to conform or in the interests of privacy). Further, it allowed generating an explanatory model using grounded theory methodology, as emerging categories in one interview could be used to inform the next.

**Key considerations in individual interviews**

The initial consultation, Study 1, relied entirely on individual interviews. Although a focus group may have enriched the data, geographical separation of participants precluded this. Interviews in this Study were semi-structured. It was important to clarify very specific points (i.e. rather than deeper meanings) that researchers were interested in regarding program design. In a semi-structured interview the interviewer may develop an interview ‘guide’ beforehand. The aim is for it to be more a memory cue about key concepts rather than include specific wording of questions. Open-ended questions are preferred. Answers from the interview may be clarified or expanded by simple prompts such as ‘How so?’ or ‘Tell me more?’

In the past 30 years researchers have increasingly used an unstructured interview style. This ensures that interviewees’ voices are emphasized and minimizes bias introduced by the interviewer. This shift appears to reflect an influence from postmodern, feminist and narrative theory. It challenges the traditional assumption that if the right question was asked, the right answer would be provided. Like any social occasion, an interview is a context within which meanings are co-constructed between the interviewer and interviewee. This new perspective is particularly apt where understanding deeper meanings and ways of thinking that frame a participant’s experience is the aim.

Thus to investigate young people's experiences of engaging with the ideas and practices of mindfulness in Study 2b, an unstructured, in-depth interview style was chosen. This was deemed appropriate to: (1) influence participants’ views
about mindfulness as little as possible; (2) the ideas and practices of mindfulness can relate to core inner thoughts and emotions about the nature of self, of emotions and of distress; (3) this form of qualitative interview has great similarity to ‘mindful enquiry’[^432] and may thus be a potentially beneficial extension of MT; and (4) it allowed a maximum richness of data that could be used to generate an explanatory model of young people's experience within a grounded theory approach.

In an unstructured in-depth interview the interviewer eschews leading the or imposing an agenda. Input is best restricted to guiding the interviewee to remain generally concerned with the topic of interest or to seeking clarification. Preparation is needed in terms of familiarity with the topic and comfort with ways of asking particular questions. However, a formal interview ‘guide’ is usually not used. The interviewer aims to create a context of conversational intimacy so that the participant can feel comfortable to tell their story as they see it.[^433]

**Focus groups**

**Why was a focus group considered?**

Focus groups are a useful way to learn about participants’ experiences in and obtain feedback about health interventions.[^428] Focus groups function particularly well when participants have shared an experience and thus have knowledge of each other.[^434] However, it is best that they are not friends or family members as this can limit openness.[^434]

Participants in a focus group are able to ‘spark off one another.’[^435] p.140 They may thus raise issues that individuals on their own may not have thought of. This is both advantageous for the researcher but also can benefit participants. They often come away from a focus group feeling that they have learnt something from other group members.[^428]

[^432]: Described on page 56.
Sensitive issues may paradoxically be easier to discuss for some participants in a group setting. Knowing that others have experienced the same thing may normalize their own experience. Focus groups can also enlarge the number of participants from whom data may be gathered. Many people who do not volunteer for an interview are amenable to a group discussion (as occurred in Study 2).

A focus group was thus considered an appropriate way to debrief and learn from pilot trial participants in Study 2. It was therefore conducted in addition to interviews. This allowed: (1) data capture from more participants; (2) a context where participants may learn from others’ experience and be stimulated to generate and express new ideas of their own – besides providing valuable data, this could extend the process of training in mindfulness also; and (3) to supplement, in relation to program design input, the interview method used in Study 1.

Key considerations in focus groups

Careful selection of location and timing are important to ensure privacy, accessibility, comfort and convenience. In this project the same environment and timeslot as used for the MT program were chosen. This was thought to create a sense of comfort and familiarity for participants and enhance group interaction. However, the room was arranged differently to when the MT sessions were run, with a large table placed centrally. Holding a round-table discussion, rather than in a circle of chairs, has been noted to lead to better participant engagement and reduce drowsiness. It was felt that the change in the physical arrangement would also indicate to participants that the ‘task’ in the focus group was different to the one in the MT sessions.

The stance adopted by a focus group facilitator is ideally: respectful; open-minded; non-judgmental towards participants and their responses; and sensitive to participant needs. In addition, the facilitator aims to strike a balance between providing leadership for the group and being a patient listener. Leadership entails ensuring focus and avoiding imbalance (i.e. certain members
dominating discussion). The facilitator minimizes their own input to allow more room for the participants’. Open-ended questions are the ideal way to stimulate discussion. However, certain research questions require the addition of secondary questions which may be relatively closed or direct. An example would be where specific information or preferences about a health intervention is sought as was the case in this project.

The facilitator may use a variety of techniques to: (1) generate enthusiasm (e.g. with a provocative or controversial statement or question); (2) broaden focus (e.g. by inviting a brainstorm); (3) help the group consider alternative points of view and elicit participants’ rationale for agreement or disagreement (e.g. by ‘playing the devil’s advocate’); (4) provide the group with a formal chance to refine their collective output (e.g. by writing some key themes that have emerged on cards and seeking participants’ comments); and (5) ensure a balanced discussion occurs (e.g. by asking participants the same question in turn).

A large volume of sometimes simultaneous speech needs to be recorded in a focus group. Audio or video recording with subsequent transcription is necessary. Relying on memory or contemporaneous notes is likely to lead to a great degree of data loss and distortion. Field notes are necessary in addition to audio-recordings to: capture relevant visual information (e.g. body language, aspects of the setting); and who was present and when (e.g. when participants arrive or leave at various time through the group).

**Researchers’ backgrounds and perspectives**

The design, implementation and analysis of qualitative research is necessarily influenced by the researchers’ unique background. Personality as well as professional and personal past experience shape their approach. While bias may be reduced, it cannot be eliminated. It is thus critical that qualitative researchers clearly state and reflect on the perspectives they may bring.
The author

I have had a daily personal practice of formal and informal mindfulness meditation for a number of years. A personal commitment to mindfulness may have meant that: (1) I was intellectually biased in favour of the project showing positive effects from MT; (b) I was emotionally attached to the program’s success to reinforce or justify my identity as a practitioner; and (c) I may view participants’ reported experiences with mindfulness with reference to my own.*

I have training and experience in basic laboratory research and clinical medicine. This may make me sceptical about and thus perhaps more rigorous in the application of qualitative methods. As a practising psychiatrist however, I feel that quantitative operationalization of mental health and illness is a Procrustean and at times misleading exercise. This has in turn made me enthusiastic about qualitative methodology. A commitment to rigorous data triangulation is a way for me to balance these perspectives.

I am an Iranian-born Australian male in his mid 30s from a middle-class background. Participants in this study were all much younger and from diverse backgrounds. The emotional experience of being with persons very different to me may have been a source of bias. For example, I may have experienced less resonance with interviewees’ responses the further from my own background they were. In such a situation I may not have adequately encouraged elaboration.

Supervisors and key collaborators

The principal supervisor, Professor Helen Herrman, is a psychiatrist with a public health background. She has extensive clinical experience of working with young adults. Dr Dianne Vella-Brodrick, co-supervisor, is an academic psychologist with extensive experience with young adults and adolescents as students and research participants. Associate Professor Jane Burns, co-supervisor, is an academic psychologist who specialized in youth research.

* An online discussion maintained by the author about the experience of ‘being a mindful researcher’ can be viewed at mindfulnessinresearch.wordpress.com.
All have some experience of qualitative research but do not specialize in the methodology. None is a regular mindfulness practitioner although all have some prior knowledge about it. These last two factors may have either or both: (1) decreased analytic bias due to the absence of emotional investment in MT or qualitative methods – the primary evaluation strategy used; or (2) reduced research design quality because of limited methodological expertise and since mindfulness researchers are recommended to have a meditation practice themselves.279

Dr Hassed was involved in the draft program design in Study 1 and facilitated the MT program in Study 2. He has been practising and teaching mindfulness meditation for more than two decades. He was not involved in qualitative data analysis.

Dr Khong supervised qualitative research design and was involved in the analysis to provide a check of validity. She is an academic psychologist with extensive clinical experience, including with young people. She also has several years’ personal and teaching experience with mindfulness practice. She may have thus been biased in favour of MT seeming beneficial.

Dr Norrish independently coded qualitative data. She is an academic psychologist without clinical experience with young people. She has extensive experience in qualitative research and has acted as an independent coder in previous studies. She does not have a personal mindfulness practice. These factors were thought to reduce bias in her analysis of data.

2.4.2. Quantitative evaluation

Intended sample sizes in this program development project were low. Qualitative enquiry was considered the most appropriate evaluation methodology consistent with the participatory approach. Previous studies of MT in young people, using larger samples sizes and randomization, have demonstrated benefits using quantitative measures (see page 86).
Nonetheless it was considered important to include quantitative evaluation in the trial of Live MATE v.2 so as to: (1) enrich findings through triangulation with qualitative evaluation; and (2) allow trialling of chosen scales of measurement. Understanding utility of measurement tools could then inform large-scale future quantitative studies of the MATE program as developed and refined in this project.

**Domains of assessment and choice of measures**

Domains of assessment both proximal and distal to mindfulness were considered necessary. Distal measures (e.g. of symptoms of depression) were of functional, real-world relevance. Proximal measures (e.g. changes in trait levels of mindfulness) could shed light on factors that mediated between MT and distal effects. Relevant distal domains were considered to be: (1) *well-being, quality of life* and *functioning*; and (2) *common symptoms of distress*. This could allow both positive and negative mental health outcomes to be measured. The proximal domain of interest was deemed to be the *mental and emotional skills* that were thought to be taught by MT directly or indirectly. In both Studies 1 and 2 it was intended to seek young people’s input regarding the relevance of the domains above.

Measurement of *well-being and quality of life* was seen as critical considering the MHP paradigm that informed this study. *Functioning* was important as, ultimately, the aim was to have an impact on individuals' day-to-day lives. In young people work and study performance and relationships with others was thought most important. Participants were recruited from non-clinical settings. MT was advertised not as a treatment for disorder but as a way to lower stress. As such, measures with a high ceiling were deemed necessary. This could reveal improvements in participants who began MT largely free of symptoms.

As previously discussed, sub-clinical symptoms of mental disorder account for a significant degree of dysfunction. While amelioration is desirable in and of itself, it may also potentially prevent the emergence of overt clinical disorders.
Anxiety and depressive symptoms were chosen as they have the highest community prevalence of any set of sub-clinical psychiatric symptoms.444

The *emotional and mental skill* of immediate relevance to the intervention was mindfulness. A related ability, emotion regulation, is of particular relevance to young people as already discussed.

Self-report, rather than clinician- or researcher-rated measures, were considered ideal. In the pilot project it was aimed to discover if they were acceptable and relevant to young people undergoing MT. If this was in fact the case, the choice to use self-report measures would reduce the costs and time required in any future large-scale trial. The MT program devised in this project was intended to have comparable live and online editions. Self-report measures could allow data collection to occur entirely via the Internet. This would dramatically reduce cost and person-power requirements in a future online trial.

Appendix A includes a tabulated list of the 50 self-report outcome measures relevant to the above domains considered for inclusion. Scale characteristics and practical details outlined informed the eventual choice of measures used. These are discussed in detail in ‘4.1. Methods’ in Study 2a, page 156. They are included in full in Appendix D, along with demographic and survey questionnaires specifically designed for this project.

The choice of measures was based on the factors below:

- Time taken to complete the scale*
- Established evidence of reliability and validity
- Copyright and cost
- Likely appropriateness and relevance to young people
- Evidence of previous use in participants below 18 years
- Use in previous MT research

* Data from Study 1 confirmed this as a critical issue, as detailed on page 149.
• Use in previous MHP research
• Sensitivity to change over the 12 week study period particularly pre to post intervention
• Time duration during which participants are asked to record ratings*
• Sensitivity to change because of MT

Choice of the primary outcome measure was guided by the above factors as well as:

• Broad relevance to key study outcomes of enhanced well-being and reduction of sub-clinical psychiatric symptoms
• Adequate proximity to mindfulness, that is its ability to test psychological variables likely to be influenced by MT

Besides the domains above, resilience, personality, and self-efficacy were considered as potentially relevant. They were not included for the following reasons:

Resilience is a construct relevant to MHP in young people.\textsuperscript{445} However, central attributes are thought to arise mainly from childhood and congenital factors.\textsuperscript{446} Commonly used scales tend to measure an enduring sense of self (e.g. The Resilience Scale;\textsuperscript{447} see also Appendix A). In these scales the time period over which respondents are asked to rate their self-view far exceeded the length of the intervention and follow-up in this project. Both a much longer follow-up period and possibly intervention boosters were thought to be necessary to demonstrate effects. In addition, some authors hold that resilience can only be understood as a difference between individuals when considered over the life-span.\textsuperscript{448} This is because adult experiences can affect resilience in relation to childhood experience.\textsuperscript{448} Although ‘resilience’ has

\textsuperscript{*} E.g. a cross-sectional or past week measure would be more appropriate than past six months in this study.
been discussed as a putative benefit of mindfulness training,\textsuperscript{353} the word has usually been used in its lay rather than technical meaning.

- **Personality** characteristics (e.g. as measured by *The Ten Item Personality Inventory*;\textsuperscript{449} see also Appendix A) are possible moderators of both engagement with, and outcomes from, MT. **Self-efficacy** (e.g. as measured by *The General Self-Efficacy Questionnaire*;\textsuperscript{450} see also Appendix A) is another potential moderator but also possibly amenable to change following MT. Measures for neither was included as: (1) the time limit for scale completion arrived at based on Study 1 – 10-15 minutes maximum – meant they would have to displace one of the key domains of assessment; and (2) the small sample size planned for the pilot trial precluded meaningful statistical inferences of moderator effects.

### 2.5. Ethical considerations

As noted previously, there are no reports of significant or lasting negative adverse effects on participants in MT.\textsuperscript{11} The exception is when a person with a fragile mental state or history of psychiatric disorder undertakes an intensive residential meditation retreat.\textsuperscript{11} These commonly last for 7-10 days and participants are silent for the majority of the time.\textsuperscript{29} They are as such markedly different from standard MT which is weekly and discussion-based.

Some degree of distress may occur in participants in mental health research whatever intervention is used. This may be related to the process of reflecting on negative emotional content during the evaluation process. A systematic review has been conducted by Jorm et al. (2007)\textsuperscript{451} to investigate the extent of such an effect in psychological intervention research. The authors identified 46 studies (total n not reported) conducted since 1970 in which the emotional effects of being a research subject was specifically assessed. Although participation occasionally led to increased temporary distress, this was the case for a minority of participants only.\textsuperscript{451} Further, there was no evidence that lasting harm could result.\textsuperscript{451}
2.5.1. Managing potential risks to participants

The program to be devised in this study was not advertised as a clinical treatment intervention. All potential participants in the pilot trial were advised to seek appropriate assessment and treatment if suffering low mood, anxiety or other significant distress during the program. They were not to rely on the program to eradicate psychiatric symptoms.

It was deemed unlikely that the program itself would lead to a worsening of any clinical disorder already present. It was thus inappropriate to deny participants who suffered from a disorder the potential benefits of participation in the program. This was in keeping with the MHP paradigm of improving mental health from whatever level it was at. If, however, disorder severity was of such a degree to affect participation in the group and acquisition of skills, then the potential participant would be advised not to take the program at this time.

Participants in all project stages were advised that they could withdraw from the study at any time. The author’s telephone number was highlighted in the plain language statements prepared for each stage as a point of contact. Participants were advised to contact him should any distress arise as a result of participating in the program. Based on an initial assessment of a distressed participant’s experience, they were to be provided with appropriate information regarding community and health services. This is detailed in Table 6 below. Help in accessing such resources was to be provided if necessary.
**Table 6 Information to be provided to participants about avenues for help seeking if distressed**

<table>
<thead>
<tr>
<th>Mental illness and help seeking information available online</th>
<th>If you are in a crisis: People you can telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beyondblue.com.au 1300 22 46 36</strong>&lt;br&gt;is an Australia-wide referral service to doctors and other professionals in your local area who can help with mental health problems. The website also has plenty of information about mental illness, especially depression and anxiety.</td>
<td><strong>Lifeline 131114</strong>&lt;br&gt;is a 24 hour counselling service staffed by highly trained volunteers. They can help if you are very upset and especially if you have thoughts about life not being worth living or of taking your own life.</td>
</tr>
<tr>
<td><strong>Reachout.com</strong>&lt;br&gt;provides a youth friendly environment where information about mental health issues is presented and discussed by other young people and where you can find out how to seek help or how to find a mental health professional that may be able to help you.</td>
<td><strong>Face to face help in an urgent crisis:</strong>&lt;br&gt;Depending on your age, location and what time in the day you require help mental health doctors and nurses may be able to come to where you are to talk with you. You can find out if this service is available and how to reach it by telephoning your nearest hospital emergency department. Otherwise, you can either go to your own doctor or GP if it’s during the day or your nearest hospital emergency department.</td>
</tr>
<tr>
<td><strong>Anxietyonline.org.au</strong>&lt;br&gt;provides online assessment and treatment for anxiety.</td>
<td></td>
</tr>
<tr>
<td><strong>Moodgym.anu.edu.au</strong>&lt;br&gt;provides online assessment and treatment for depression.</td>
<td></td>
</tr>
</tbody>
</table>

The online edition of the program was used to aid consultation. It was not intended for trial within this project. It was devised as a blueprint of structure and content that, with the aid of appropriate input from IT professionals, could be used to establish an online program. The risk management approach envisaged as part of this blueprint involved the following:

- Potential participants were to be encouraged to contribute their experience and any difficulties they may be having to the Reachout.com online forum designed for the program. Reachout.com forums are moderated by Inspire Foundation staff consistent with Foundation policy.
- Any participants identified to be having an at risk mental state based on their comments on the online forum were to be directed to seek help consistent with Foundation policy. In addition, the information in Table 6, including live
links, would be available to participants via a radio button titled, ‘If you’re feeling really bad click here’.

### 2.5.2. Approval by institutional ethics committee

Two separate applications were submitted to and approved by the University of Melbourne Human Ethics Sub-Committee: (1) consultation about program design with young people (approved Oct ’09); and (2) pilot trial (approved Sep ’10). Participant information and consent forms are provided in Appendix D.

### 2.6. Training undertaken

The author undertook the following formal training courses in research methodology:

- Qualitative research software (NVIVO-9; QSR, Melbourne, 2010) training (University of Melbourne, six hours, April 2011).
- Qualitative research methods lectures and associated training meetings with course coordinator Dr Belinda Khong, Department of Psychology, Macquarie University (18 hours, April 2011).
- Literature review, overview of research practice and thesis preparation (University of Melbourne live and online courses, 2009 and 2011).
- Qualitative research short course held by the School of Primary Health at the University of Melbourne (16 hours, Sep 2009).

The importance of researchers’ own mindfulness training and practice\textsuperscript{12,278} has been discussed (page 59). The author underwent a number of formal training experiences during this project. These were delivered by experts in teaching and evaluation of MT:

- Advanced mindfulness teacher training course Florence Meleo-Meyer and Bob Stahl (Director of Training and Senior Teacher Trainer respectively at the UMass CFM, 70 hours, training held in Sydney, Jan 2012).
• Training course in skills for teaching mindfulness meditation held by Dr Maura Kenny and Ms Timothea Goddard (Accredited by UMass CFM, 70 hours, Sydney, July 2011).

• Neuroscience of mindfulness, two day workshop by Dr Ric Hanson (16 hours, Melbourne, May 2011).

• Teacher training course in parallel with an 8-week mindfulness course for lay participants (50 hours including participation in lay course, Melbourne, July-September 2010).

• Training course in skills in teaching mindfulness meditation held by Drs Kabat-Zinn and Santorelli (Founder and Director, respectively of the UMass CFM, 80 hours, Sydney, Nov 2009).

The requirement for personal practice extends to attendance at a minimum number of meditation retreats. The author attended an eight day silent retreat in June 2012 and a 10 day silent retreat in Dec-Jan 2009-2010. He had previously attended a 10 day silent retreat (July 2007). During this project he engaged in formal meditation practice for an average of 5.5 hours per week.
Chapter 3 Study 1: Designing Mindful Awareness Training and Education Version 1 and consultation with young people

The literature review and discussion with experts led to an understanding of what constitutes best practice in this area.* In this chapter the steps taken to develop a draft mindfulness training program, in live and online editions, are outlined. This ‘Mindful Awareness Training and Education, Version 1’ (MATE v.1, outlined in Table 7) program was then used as the basis for a consultation with a group of MT-naïve young people. The second version of the program (MATE v.2), informed by the consultation, is presented at the end of the chapter. It is used as the basis for Study 2. This study has been published in part in the peer-reviewed scientific journal Health Promotion International (see Appendix E).

3.1. Methods

3.1.1. Designing MATE v.1

The Stress Release Program252 (see page 56) was chosen as a guide for reasons already outlined (page 92). Extensive discussion was held with the meditation teacher and academic physician who established the SRP at Monash University (Dr Hassed). The aim was to consider the possibility of integrating what had been learnt from the literature and expert consultations about optimal characteristics of youth MT with his teaching experience in this age group.

Description of the Stress Release Program

This program, intended for adults, is typically held for six consecutive weeks on the same day with a group of 5-15 participants. Each session is one and a half to two hours long and includes a mixture of guided meditation, didactic teaching and mindful enquiry* regarding meditation experience. At program commencement two CD’s and a book are distributed. The first CD contains a general discussion about mindfulness. The second CD continues the discussion

* See ‘1.4. Part 3: Defining optimal program characteristics’, page 97.
* Described on page 56.
and also includes meditation instructions. The book, *Know Thyself: The Stress Release Program*,\textsuperscript{252} describes the program content and rationale in detail.

Participants are expected to engage in homework. This initially comprises 5 minutes of sitting meditation practice twice a day and application of a weekly ‘mindfulness task’. In latter weeks of the program longer meditation sittings of up to 20 minutes are suggested. ‘Mindfulness tasks’ signify particular ways of being mindful in day-to-day activities. They thus provide a structure to informal meditation. Examples are becoming aware of how *perceptions* of experience colour one’s emotional response or *listening* to others mindfully. These are described in detail in Hassed (2006)\textsuperscript{252} along with the six other tasks presented in SRP: *letting go and acceptance; presence of mind; limitations; self-discipline; emotions; and expanding self-interest*.

**Tailoring the SRP to young people for live and online delivery**

The MATE v.1 outline used in discussion with participants in Study 1 is presented in Table 7 later in this chapter. To generate a program that was attractive and relevant to young people changes were made to SRP structure and content to arrive at MATE v.1.

**Adjustments in structure**

A number of structural changes were made to the SRP to improve youth-friendliness. For the live edition of MATE v.1, session duration was shortened to 1-1.5 hours instead of 1.5-2. This is consistent with literature on effective youth MT as discussed above (see page 97). Sessions for younger audiences are generally shorter than those designed for adults. The six week length of the program was retained, as a minimum necessary time to allow both adequate exposure to mindfulness, adequate opportunity to implement skills learnt in daily life between sessions and to allow time to overcome initial difficulties (see page 241 for detailed discussion of this issue). The homework expectations in the SRP are already limited compared with standard adult programs. These were not altered in MATE v.1. The language used by the program facilitator was modified to be readily understood by young people of various ages and educational attainment. Session procedure was changed to allow more
Incorporating themes relevant to young people: ‘Manualizing’ mindfulness training?

Mindfulness based interventions aim to train participants in a particular way of relating to all moment to moment experience. The ‘content of experience’ (e.g. an argument with a friend) is of secondary importance to the ‘relationship to experience’ (e.g. the automatic thought that one is unlovable). Examining process, rather than content, is prioritized in mindfulness practice.

The teaching plan is intentionally lean to allow moment to moment responsiveness to what arises in sessions. This approach to teaching mirrors mindfulness practice itself. Whatever content then arises in sessions is mindfully worked with by the facilitator. Tightly controlling session content is counter to the facilitator’s own meditative practice of curiosity and non-judgment towards moment to moment experience. This is an important form of embodiment of mindfulness by the facilitator. This embodiment is itself one of the key ways participants are exposed to and learn mindfulness (see page 56). It demonstrates to participants that no matter what situations they may be dealing with, these provide an opportunity for practising a better way of relating to all experience. The teaching agenda is thus to a great degree set by participants.

This approach is contrasted with where a facilitator may say, for example, ‘Today we are going to talk about exams.’ Participants may mistakenly believe that there is a peculiar mindfulness technique that is about to be taught. The fact that a mindful stance is fundamentally the same no matter what the situation is, may be missed. Alternatively a conversation that naturally arises about exams in the group can be an opportunity for the facilitator to demonstrate how ‘this too’ is an informal meditation opportunity. Applicable aspects of mindfulness (e.g. of

* See ‘Characteristics of a mindful stance’ on page 51.
* See ‘Challenges in delivering and evaluation of mindfulness training’ (page 59), for a critique of a reductionistic approach to MT that sees it as a collection of techniques.
noticing and accepting that one is anxious) are in this way given a suitably broad context.

Nonetheless, the facilitator’s sensitivity to issues important to young people was considered likely to improve mindful responding. Issues were selected in discussion with experts and based on literature review, especially of studies where young people themselves had been consulted (e.g. Mission Australia (2008)452; Sawyer (2001).453) and are detailed below:

- Peer relationships
- Peer group inclusion
- Intimate relationships
- Natal family relationships
- Body image
- Sexuality and sexual orientation
- Exposure to and choices about drugs and alcohol
- School or university study and examinations
- Taking on new, adult roles with increasing responsibilities
- Benefits and pressures of engaging with online social environments
- Early career choices or career building activities

The flexible nature of MT precludes rigid standardization and highly prescriptive manuals.12 Flexibility is a fundamental attentional quality in mindfulness (see page 51). Balancing flexibility with intervention fidelity is a key challenge in developing MT programs for rigorous research.278 To arrive at such a balance, a list of key topics pertaining to mindfulness and a proposed order for their presentation was prepared based on the SRP, expert discussion and literature review. This ensured that, whatever the particular discussion content came to be, the key relationship-to-content skills were covered:

- Overview of what mindfulness is
- The rationale for learning mindfulness skills
- Ways to enhance the ability to be more mindful in daily life:
Formal sitting meditation practice: guided in sessions and required as homework aided by the CD
- Breath awareness
- Body awareness
- Awareness of sounds

Informal meditation:
- Making a gentle effort to remember to return to the present moment using the breath as an anchor in day-to-day life
- Using mundane tasks (e.g. brushing teeth) as an opportunity to train attention on moment to moment physical sensations
- Specific ‘mindfulness tasks’ as described on page 128
- Physical reminders for practice in easy to see places (e.g. greeting on mobile phone; screen saver; stickers; elastic band around wrist)

Suggestions for continuing practice beyond program completion such as further reading and courses

Draft evaluation plan used in consultation

Domains of measurement (see page 119) were presented to participants as summarized in Table 7 below. Participants were asked to assess these for relevance and suggest additional areas of interest. The plan to conduct qualitative enquiry was also discussed with consultees. A one year follow-up period was initially envisaged pending feedback in the consultation. This was chosen so as to both allow assessment of relatively long-term effects and to account for effects of annual cycles of examinations and summer holidays.

An RCT was not planned as part of this project, the core aim of which was program design and refinement. However, the consultation provided an opportunity to learn how young people would feel about randomization and various control conditions. In this way, a refined MT product from the project could be optimized for future large scale trial. Not only training content but the suggested evaluation strategy would be youth-friendly.
Adapting to the online environment

It was intended that the online edition of MATE v.1 simulate the experience of face to face group training. Almost all the evidence for the benefits of MT has been generated in studies where participants were taught meditation as a group. Such a simulation which used the Internet as a teleconferencing tool is already available for MBSR (see page 92). It requires facilitator and course participants to be present at set times. This method provides the closest experience to a live course. It does not however take advantage of the Internet’s capacity for automated content delivery and cost reduction.

To achieve this, pre-recorded video was chosen as the key teaching medium in the online edition of MATE v.1 (E-MATE v.1). Videos would be provided sequentially over 6 weeks. They would include highlights of each of the six 1-1.5 hour Live MATE sessions. Each video would be edited to be 30-45 minute in duration. This approach was thought to be superior to presenting the full session. It allowed removing irrelevant or distracting material. It also took into account possible limitations in bandwidth and download limits for both end-users and the hosting agency. A shorter presentation was likely to better match the short attention span for online vis-à-vis live experience. This has been demonstrated in adults but is of particular relevance to young people.

Between-session mindfulness meditation instructions would be provided via MP3 download. In place of the full *Know Thyself* book (95 pages), downloadable Portable Document Format (PDF) files would be provided. This was thought to be more likely to be read by young people and more accessible also.

The opportunity to discuss experiences of mindfulness practice with others is a cornerstone of group-based live MT. An online forum was proposed to allow E-MATE participants to have a similar experience. This would operate as a bulletin board, rather than real-time, to allow moderation of comments. Young

* This was the case when the project was established in 2009 and largely remains so in both qualitative (see page 67) and quantitative studies (page 82).
people could post questions or experiences and respond to others' posts. The collaboration with the Inspire Foundation allowed such a forum to be hosted on Reachout.com. This was designed to take advantage of the relevant risk management and moderation policies employed by site staff.

An MT facilitator would be available to review and respond to posts on a daily basis during weekdays. This could boost program engagement and benefits. It would on the other hand significantly increase program costs and reduce its automated availability. It was included in the draft design so that its potential value could be canvassed with consultees. The structures of the E- vs. Live MATE v.1 programs are summarized in Table 7.

*Proposed participant progress through E-MATE v.1*

Figure 1 illustrates the super-structure for the online program. Upon first accessing the website participants would undergo a registration procedure. They would be provided with a plain language explanation about the study. This would be followed by a formal consent procedure. Ticking that they had read the information and clicking on an 'I agree' button would indicate informed consent. Baseline information such as age and gender as well as the first round of outcome data would then be collected. Randomization could be used at this stage if required.

Data collection and tracking of participant progress would occur while minimizing the need for participants to provide identifying information. Requiring information such as name, date of birth and address may reduce eagerness to participate. An email address was deemed to be the minimum necessary, which would also allow reminder messages to be sent.

The site would detect outcome measure scale scores higher than a predetermined threshold. It would automatically suggest to the registrant that they seek formal help and direct them to relevant online links. As discussed in ‘2.5. Ethical considerations’ (page 122), such participants would not be barred from continuing to access the site, considering the benign nature of MT. However, it would be clearly stated at various points in the site that E-MATE is not intended
as a clinical intervention. Participants would be asked to seek professional help if undue distress or clinical disorder is present or suspected by them.

Participants undertaking the online intervention would be directed to complete the six modules sequentially and a week apart. The website would be programmed to make the next module available within the week following completion of a previous one. Participants would receive a weekly email reminder. They would be encouraged to schedule a specific time in their diaries each week for undertaking online modules.

Each time participants logged on to the program they would be automatically directed to the next module page. They would be able to access any previous modules they would like to review as well as the online forum, via a side bar. Before completing each next module participants would be asked to answer two brief questions: ‘How much time have you spent meditating in the past week?’ and ‘Tell us about your experience of mindfulness practice?’

Construction of demonstration website

The web address www.mateprogram.org was registered via the godaddy.com address registrar for three years from late 2009. A demonstration version of the program and a study email address (mail@mateprogram.org) were set up by the author. The freely available programs Google Sites (Google Inc., Mountain View, CA, 2009) and Survey Monkey (SurveyMonkey.com LLC, Palo alto, CA, 2009) was used for this purpose. This demonstration website took advantage of videos from YouTube and draft text describing mindfulness. It was used as an aid to discussion with consultees in conjunction with the information in Table 7. Screen shots of this initial demonstration site have been presented in Appendix B.
Figure 1 Overview of the design of the online edition of the MATE v.1 program

E-MATE Mindful Awareness Training and Education-Electronic edition, MHP Mental Health Promotion
MATE v.1 summary presented to consultees

Table 7 outlines characteristics of the draft program used in the consultation along with the demonstration website. What was presented to participants was deliberately simple. This was aimed to minimize the imposition of the researchers’ agenda and preferences on consultees. Greater space for consultee contributions would then be available.*

* This rationale is discussed in more detail in ‘1.2.4. Engaging young people in program design’ (page 43) and ‘6.1.1. Giving consultees’ voices due regard’ (page 202).
Table 7 Outline of the MATE v.1 program presented to mindfulness-naive consultees See Appendix B for screenshots of the online prototype

<table>
<thead>
<tr>
<th>Domain</th>
<th>Live MATE v.1</th>
<th>E-MATE v.1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weekly education sessions</strong></td>
<td>Six sessions: facilitator-led meditation practices and discussion of themes ~ 1-1.5 hours</td>
<td>Core information presented over six weeks in video format: edited recording of a live training group ~ 30-45 minutes</td>
</tr>
<tr>
<td><strong>Discussion of meditation experience</strong></td>
<td>Following each meditation practice and in relation to homework in the prior week facilitator encourages group discussion of the experience of mindfulness practice</td>
<td>Online forum set up to allow sharing experience of the program and to ask questions from other participants or facilitator; facilitator would review responses and questions and contribute to the discussion on a daily basis during weekdays</td>
</tr>
<tr>
<td><strong>Text material</strong></td>
<td>Know Thyself, the SRP workbook</td>
<td>Downloadable PDF files which summarize teaching for each week</td>
</tr>
<tr>
<td><strong>Homework</strong></td>
<td>Meditation instructions on CD</td>
<td>Meditation instructions provided via downloadable MP3</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Meditation at home in between weekly sessions: for 5 minutes increasing to 20 in successive weeks Everyday 'mindfulness tasks' (i.e. a variety of ways of remembering to bring present moment-focused awareness to routine activities such as walking to school, doing homework or socialising; a new task presented each week)</td>
<td>Outcome measures covering the following domains:</td>
</tr>
<tr>
<td></td>
<td><em>Well-being:</em> How well do you feel in yourself? How satisfied do you feel with your life?</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Unpleasant emotions:</em> Feelings of anxiety or low mood</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Functioning:</em> How are you getting on socially and in your work or studies?</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Mental skills:</em> How mindful and in control of your feelings do you feel you are?</td>
<td></td>
</tr>
<tr>
<td>Qualitative evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future options of randomization and waitlist control</td>
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</tr>
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</table>
3.1.2. Consultation with young people

The aim in this stage was to shed light on young people’s views about: whether they were open to MT as an MHP strategy; how weekly session content in MATE v.1 could be made more relevant and attractive; how the content and length of homework could be improved; what outcomes were of most interest; how best could changes in these be evaluated; specific ways to improve program retention; and how MT could be advertised to generate interest in participation. Young people naïve to formal mindfulness training were chosen as the population of interest. This could mean that they would not be biased in favour of MT, in possible contrast with researchers.

Sampling and recruitment

The population of interest for this phase included all residents of Australia aged 15-24. The collaboration with the Inspire Foundation provided a convenient and cost-free way to reach young people in any Australian location via Reachout.com. This website has been advertised widely as an MHP space (see page 107).

Young people visiting such a site are unlikely to be representative of the population at large. They are likely either to: have suffered emotional difficulties themselves; have a friend or family member who had; or at the very least have a strong interest in improving their mental well-being. However, the MATE program itself was deemed likely to attract a similar group of young people. MT is traditionally advertised as a ‘stress reduction’ method. Common packages such as MBSR or SRP in fact have the word ‘stress’ in the title. A ‘distressed healthy sample’ of the population was thus likely to enrol.

The sample was limited to persons with an adequate command of English as the eventual program was to be delivered in this language. Arranging interpreters

* See ‘7.1. Study participants ’ (page 218) where this issue is explored in detail in relation to participants who ultimately undertook the pilot Live MATE v.2 program.
for interviews would have been costly. This was especially the case in relation to interstate or rural residents who needed to be interviewed by telephone.

An advertisement about the study was placed on the Reachout.com website for four weeks in Nov 2009. To aid recruitment, potential participants were offered a cinema voucher. Twenty-one young people responded to the advertisement via the study-dedicated email address (see page 132).

**Consultation process**

An interview, rather than focus group, was chosen for this qualitative study. Australia-wide recruitment was planned making travel costs prohibitive. Three local participants were interviewed face to face and 10 interstate or rural respondents by telephone. Interviews were 30-90 minutes in duration.

Before interview participants were sent, via the study email address:

- **Basic information about mindfulness**: An article was co-prepared by the author and Inspire Foundation staff for Reachout.com. It briefly introduced mindfulness in language and terms that young people could engage with.*
- **MATE v.1 outline**: An intentionally sparse outlook on how researchers felt mindfulness should best be taught was presented as above (page 136).
- **Demonstration E-MATE v.1 website**: Interviewees were sent a link to the E-MATE demonstration website (screen shots in Appendix B). They were asked to view the site before and during the interview where possible.

A semi-structured interview was then conducted. It allowed participants ample room to suggest any spontaneous or original ideas not triggered by standardized questions but still sought some specific information.* A variety of strategies

*The original version is included in Appendix D. Its current iteration is viewable at http://au.reachout.com/What-is-mindfulness (note that the author has had no editorial control over this content since it was first posted in 2009).

* See ‘Key considerations in individual interviews’ (page 113) for a detailed rationale.
were employed in to reduce the ‘power imbalance’* inherent in a consultation: provision of a minimal amount of draft content so as to ‘lead’ interviewees as little as possible; a minimum number of standardized questions; and allowing flexibility in responding to interviewee material by additional questions.

The overall theme of the interview was introduced to participants as, ‘What do you think of the idea of teaching mindfulness meditation to young people?’ Supplementary questions were then asked with the following theme: ‘In what way can the program’s [subject of interest] be improved?’ Key subjects were: structure, content, homework, measurement strategy, advertising plan and enhancement of participant engagement and retention.

Question wordings as approved by the institutional ethics committee and used as an interview guide are provided in Appendix D. As discussed in ‘2.4.1. Qualitative evaluation’ (page 110), wordings were not intended to restrict interviewing. They were suggestions, which could be modified depending on interview circumstances. For example a different level of formality may have arisen in the interaction depending on the age and background of the interviewee.

Additional, unscripted questions were asked to clarify statements by interviewees or encourage them to elaborate. As more participants were interviewed, unscripted questions allowed deeper exploration of themes suggested by previous participants. Little new information was obtained in interviews subsequent to the first nine indicating data saturation.

The author conducted all interviews. Detailed contemporaneous notes, as much as possible verbatim, were kept of all face to face and telephone interviews. The author had extensive experience in taking contemporaneous notes of consultations as a psychiatrist. Written notes were deemed a reasonable recording strategy as:

* See ‘1.2.4. Engaging young people in program design’, page 43.
• Specialized equipment required to record telephone conversations with adequate quality for transcription was not available.
• Bias towards responses from face to face interviewees could be reduced if the same recording strategy was used as with telephone interviews.
• The data collection process was semi-structured, rather than in-depth.
• The data analysis did not aim to derive an explanatory model of subjective experience. The intention was simply to capture recurring patterns of feedback regarding specific a priori areas of interest.

Data analysis

Notes taken during interviews were subjected to manual thematic analysis* by the author. Initially a matrix was devised to summarize and group interviewees’ responses according to subjects of enquiry (i.e. structure, content etc. as detailed on page 140). Based on a review of this matrix 18 initial categories of feedback were delineated. Following further analysis these were condensed into five themes. Raw interview notes were then re-analysed to ensure that derived themes constituted a complete reflection of issues raised by participants. The frequency with which interviewees had emphasized each theme was also determined. The three lengthiest interviews were independently coded by Dr Dianne Vella-Brodrick, co-supervisor. Comparison of data categories identified by the author and Dr Vella-Brodrick revealed close agreement: 16 of the initial 18 categories identified by the author were also chosen by Dr Vella-brodrick (although slightly different wordings were used). It was thus deemed unnecessary to have multiple coders on all interview notes.

3.2. Results of consultation

3.2.1. Interviewee characteristics

Although no intervention was offered, the advertisement led to 21 respondents. This was an encouraging finding regarding online recruitment. However, only 13

* See 2.4.1. Qualitative evaluation’ (page 110), for further details.
remained in contact following their initial email expressing interest. All were included in the study.

Participants were aged 16-26 (mean=21.6, SD=2.7). Sixty percent were female. Fifty percent were studying full-time. The rest were in full or part-time employment. Fifty percent had previously heard about or tried meditation. None had a regular practice (i.e. weekly or more) or had participated in a formal MT course or program. Fifty percent had previously been diagnosed with a mental illness: major depressive disorder (6); anxiety disorder (4); bipolar disorder (2); and PTSD (1). All stated that they were currently stable. None reported a current substance use disorder.

Interviewees appeared eager to engage in the process. They required little encouragement to elaborate and none reported feeling tired or asked for a break or termination of interview.

3.2.2. Feedback on design, delivery and evaluation

Five key themes captured the data as per the analysis above: feasibility; teaching process and ‘timeout’; supporting engagement and retention; evaluation; and advertising and recruitment. Each theme is introduced below with data that was relevant to both the live and online editions. Feedback specific to E-MATE is presented separately under each theme. Quoted text indicates interviewees’ own words.

Feasibility

Participants had all heard of either meditation or (less commonly) mindfulness. They believed that many other young people who were known to them as friends or acquaintances would also be familiar with these concepts. They suggested that most young people were likely to be open to and interested in meditation. However, for some the word may itself be off-putting (see also page 151). Ten interviewees commented that persevering in the program to the end and completing home practices were likely to prove difficult, even if young people were initially enthusiastic about mindfulness.
**E-MATE specific: Feasibility**

All interviewees said that an online edition of MATE would be of interest to their peers. However, six noted that the lack of live interaction with the group and a facilitator were likely to be a disadvantage. Nonetheless, they confirmed that the Internet was a place where young people spent a great amount of their time. They stated that therefore delivering educational content in that environment was likely to be beneficial. Three interviewees suggested that many young people may in fact prefer E- to Live MATE as:

- A live program may be seen as too time consuming;
- Live MATE would involve travelling to where training was held which would be a ‘hassle’;
- ‘the net’s where we spend all our time anyway’; and
- Concerns about privacy, or difficulties with social anxiety may preclude participation in Live MATE for some participants: ‘If you’re all anxious you wouldn’t want to sit with a group of people’. This participant suggested that for such a person an online program would be more helpful than books or CD’s.

A problem with online delivery envisaged by one interviewee was that some young people may be reluctant to engage with E-MATE because of concerns about privacy, for instance if using a family or other public computer.

**Teaching content and homework**

Interviewees noted a number of key stressors they may discuss in an MT group: school or university pressures especially about examinations; procrastination especially about assignments; and interpersonal difficulties with friends and families. In addition they were interested to learn how MT could help with emotional concerns: difficulty in making decisions; being excessively self-critical; feeling that their self-esteem was low; being often wracked by worry; and difficulty focusing on schoolwork.
Provision of lengthy text was seen as unlikely to add value to teaching sessions. Participants said they were unlikely to read anything more than a page. Additionally, longer pieces may discourage some potential participants from remaining in the program altogether.

Interviewees found the word ‘homework’ off-putting as it reminded them of university or schoolwork. Suggested alternatives were ‘home practice’, ‘meditation practice’, ‘rest’ or ‘timeout’. Interviewees suggested a maximum of five minutes of daily meditation practice not more often than twice a day, at program commencement. However, they stated that those who had remained in latter weeks of the program could probably work with up to 20 minutes. One interviewee suggested, in addition, that a longer meditation once a day was more likely to be done than two shorter practices.

To make between-session practice more likely, three interviewees suggested asking participants to practise at the same time every day. ‘Pegging it’ to a routine activity (e.g. after brushing their teeth in the morning) was also suggested. Two interviewees suggested asking participants to log their home practice and record their experience in a diary or journal. This could be done on paper by Live MATE and as an online log by E-MATE participants. Another interviewee suggested that a diary would help with remembering material to share with the group, post on the online forum or discuss as feedback at program conclusion.

**E-MATE specific: Teaching process and homework**

All interviewees were in favour of teaching via video rather than text or audio formats. Recordings of live group teaching and discussion were seen as superior to those of a teacher speaking to the camera. All preferred a series of short videos each week rather than the one long presentation envisaged in E-MATE v.1. Reasons given were:
• Young people have ‘a short attention span’, particularly when online. They are therefore unlikely to watch a video that went for more than a few minutes.

• Young people tend to do several things at once when online (e.g. chat rooms, Facebook, Twitter and instant messaging). They were unlikely to continue viewing a video if it interfered with this process.

• Shorter videos allowed them to progress at their own pace and to go back and watch each section separately if they so desired.

• Participants could choose to watch whichever of the videos available for that week as piqued their interest initially. This may then encourage them to watch other sections, whereas if the only option was one 45 minutes long video they may choose not to watch at all.

To reduce the risk of boredom all interviewees except one suggested no more than four videos each week. One suggested no more than three. Maximum length of each video was suggested as 10 minutes by all except three interviewees. He suggested no more than 5 minutes. To encourage watching videos in the recommended order, one interviewee suggested that they displayed automatically once the previous one had been watched. Two interviewees commented that participants viewing latter weeks of the program may ‘cope with longer videos’ as: (1) they were obviously committed to the program; and (2) their ability to attend to material may have improved through mindfulness practice.

‘As little text as possible’ was suggested: 2-3 sentences on each web-page. However, two participants emphasized that downloadable PDF summaries were likely to be useful. This could allow rapid review of the teaching content for the week. MP3 format for downloadable meditation instructions for homework practice was deemed appropriate. When asked by the interviewer whether an online practice log was likely to be ‘a hassle to fill out’, one interviewee responded ‘no you’ll find most young people will get online each day’.
Sunday morning was suggested by two interviewees as the best time for each weekly module of the program to become available. Reminder emails were to be sent at this time also as ‘young people check their email and Facebook on a Sunday afternoon.’ One interviewee suggested that the whole week’s web-page not be longer than one mouse scroll. To this end it was suggested videos be placed in a horizontal line (e.g. two at a time) rather than vertically. Another stated that brief linking pieces of text (one sentence or phrase) between videos may help orient participants and encourage viewing.

Including a link to other authoritative mindfulness-focused websites was recommended by one participant. She suggested that this would allow those who wished to learn more to explore further.

**Supporting engagement and retention**

A consistent message from all interviewees was that any form of feedback or communication from program facilitators or coordinators was desirable. This was the case even if it was an automatically generated email. Such contact was seen as supportive of engagement rather than intrusive.

One interviewee suggested that program recruitment and entry be phrased as an ‘application process’. She thought that this would communicate the serious nature of both learning meditation but also being part of a research project. It may thus encourage young people to persevere in the program and in follow-up evaluation.

**E-MATE specific: Supporting engagement and retention**

The quality of presentation both in terms of appearance and user-friendliness were highlighted as critical to acceptability. Interviewees emphasized that there were many online mental health and well-being options that ‘competed’ for young people’s attention. They pointed out that websites that they frequently interacted with had a professional and attractive design. E-MATE would have to be on a par if it were to attract participants. Inclusion of engaging graphics and animations was seen as desirable by three participants. One pointed out that a balance needed to be struck with visual simplicity so as to avoid the site being
too ‘cluttered’. The ability to customize the course web-pages (e.g. through changing the background colour or theme) was seen as important by another participant.

Interviewees were concerned that the demonstration site, coloured a pale green and decorated with a branch, would not be appealing to young men. They suggested using darker, bolder colours (e.g. black, yellow and dark blue). All interviewees suggested not having pictures of meditators on the website as it may communicate a religious overtone. Instead they suggested pictures of young people ‘being happy, being active and having fun’.

Four interviewees pointed out that E-MATE being associated with a ‘brand young people trust’ was critical. Universities and Reachout.com were seen as trustworthy. It was suggested that all program pages should bear their insignia. Two interviewees encouraged the use of slang and mobile telephone text message language (e.g. abbreviating ‘you’ to ‘u’). However, a balance was suggested between formal language and slang. This could help retain the sense of the program as authoritative while reflecting its empathy with young people. Headings were suggested as the most appropriate place for slang and abbreviated words.

Four interviewees suggested using ‘progress bars’ at the top of each page. This could be used in both teaching modules or during outcome measurement to: orient participants; create a sense of fulfilment; and encourage completion. One interviewee suggested a visual ‘mindfulness bank’ which filled up as participants completed training sessions and logged in their home practice.

Interviewees suggested that an online practice log should automatically generate email or text messages. These could act as reminders to practice at home. It could also provide encouragement when practice was done such as, ‘Well done for completing this or that amount’. One participant suggested that a weekly log would be more likely to be completed than a daily one. It could also be used as a way to unlock the video presentation for the following week.
All interviewees agreed that an online forum for discussing their experience was highly desirable, especially if it included MT facilitator input. It was likely to boost retention significantly through: clarifying aspects of the teaching; sharing and overcoming difficulties with practice; and encouraging engagement with teaching sessions and home practice.

One interviewee suggested that in addition to posting on the forum, the facilitator should arrange live online chat at an advertised time each week. Six to 7 p.m. on Wednesday night was suggested as likely not to interfere with social life and to be midway in between new modules being made available on weekends. Another interviewee suggested providing a map of Australia on each page that showed the number of young people taking the program at each location. This was thought to create a sense of camaraderie and community.

Provision of rewards was also suggested. Two forms were mentioned. Firstly by highlighting the opportunity to benefit other young people a sense of ‘doing good’ and ‘being part of a bigger thing’ could be created. Emphasizing early on in a program that a future rollout would be based on their experience may encourage young people to complete outcome measures.

Secondly, material rewards were suggested in three forms: (1) a certificate for those who complete the program and outcome measures – one participant suggested those who worked in the health or community sectors may include it in their résumés; (2) a token reward that all program completers and all who finish all three rounds of outcome measures would receive (e.g. an arm band or a sticker); and (3) a prize draw for items of monetary value.

Interviewees commented that a higher chance to win small prizes was likely to be more motivating than a small chance to win large prizes. Suggested prizes were: movie vouchers; vouchers for electronics and music stores (esp. ones which had an online purchase option); music and application download credits;
mobile telephone call credits; event ticket credits; and vouchers for driving lessons.

**Evaluation**

Interviewees suggested that the rationale for evaluating the program should be clearly and compellingly stated before program entry. This was noted as especially important if randomization to a control group was planned in a future trial. With such explanation, having to complete outcome measures was not seen as a barrier to participation: ‘Young people want to help in studies’. Nonetheless, random allocation was seen by two interviewees as likely to deter many potential participants. They suggested that, consistent with the draft MATE outline, a waitlist rather than a non-intervention control group would be more likely to remain engaged.

All interviewees agreed that young people were likely to engage with qualitative enquiry. Both their experience of the program and of mindfulness practice itself could be interesting to talk about, they stated.

Proposed demographic data and assessment domains (subjective well-being, symptoms of ill health, functioning, and mental skills) were seen as appropriate and likely to seem relevant to MATE participants. Two interviewees emphasized the importance of functional issues such as: ‘eating pattern, having a routine they are happy with, being able to catch public transport’ and ‘playing sport, meeting friends, getting on with people’.

Online, as opposed to mailed, questionnaires were the preferred form of data collection at follow-up. Completing outcome measures should take no more than 15 minutes according to six interviewees. The other seven suggested that any more than 10 minutes would be problematic. ‘People will get bored after 5 minutes and... they'll just tick at random’. One interviewee suggested dividing questions into sections (e.g. well-being could be titled ‘positive stuff’) to make the process less daunting. One year follow-up was seen as too long by all
interviewees. Ongoing engagement in follow-up data collection beyond 3 months was seen as unlikely.

Before each data collection round one interviewee suggested asking, ‘What are the things that have changed in your life since you began the program?’ She suggested that this could capture any adverse or stressful life events that may influence the interpretation of results. Another participant suggested that before presentation of outcome measures a written question be asked such as ‘Did you feel the program helped you?’ She thought that participants would then be more likely to complete measures that followed, as they could be experienced as an extended and ‘objective way of answering that question’.

E-MATE specific: Evaluation

Again all interviewees emphasized the importance of a minimum number of outcome measures. One participant recounted, ‘When I was doing Moodgym it was 50,000 questions and by the end I said stuff this.’ The number of questions asked before entry led to her not commencing the program at all. Questionnaire length was suggested as particularly relevant to E- vis-à-vis Live MATE. Compared with when questionnaires are presented at the commencement of a live course, participants would have a much lower threshold for aborting the exercise when online.

Three interviewees suggested providing brief personalized feedback about scale scores. Graphs could show changes at follow-up assessments. This would increase the interactivity and personalization of the site. It may also be directly motivating towards ongoing mindfulness practice.

One interviewee suggested that opportunities for qualitative feedback be provided throughout the program. This could be done via a link titled ‘Tell us what you think of the program’ or ‘How is this program going for you?’ or ‘How are you finding doing this?’ Participants could then provide feedback such as ‘not

* An e-mental health intervention discussed in ‘1.2.3. The role of technology’, page 41.
enough information’ or ‘didn’t click with me.’ The link could navigate to the online forum above or open a separate comment box.

**Advertising and recruitment**

Four interviewees suggested avoiding any reference to ‘spirituality’ or even ‘meditation’ as ‘they might think it’s some spiritual bull–’. They suggested instead focusing on the likely benefits of the program. Suggested terms were: ‘relieve the stress of everyday life’; ‘relieve the pressure of everyday life’; ‘reduce stress’; ‘managing procrastination’; ‘getting your anxiety down’; ‘stop stressing out’; ‘increase your happiness’; ‘learn to listen to yourself’; ‘become aware of your reactions’; and ‘be in your life’.

One interviewee advised caution in using references to ‘stress’ or ‘stress management’. In his view, potential participants were already ‘bombarded’ with tips on reducing stress, especially in educational settings. ‘Stress management can sound boring’, another suggested. She stated though that ‘mindfulness’ may pique young people’s interest. Many may have heard of mindfulness but it did not have the spiritual or religious connotations that ‘meditation’ had.

One interviewee suggested that advertising material emphasize that the MATE program was not a treatment for mental illness even though it may improve symptoms. This was important to ensure that young people did not rely on the program entirely to deal with a mental disorder they may be suffering.

For a large scale future trial, face to face advertising of the program was suggested as the most effective method for both Live and E-MATE. Presentations at educational settings and events where young people were likely to be present (e.g. music festivals) were suggested. One interviewee suggested using business card-sized advertisements which were handed out to young people when advertising the program. Posters were seen as the least effective method.
E-MATE specific: Advertising and recruitment

One interviewee suggested that E-MATE have a Facebook and a Twitter presence. Another suggested including a video of a young person who had done Live MATE speaking about its benefits on the E-MATE home page.

Interviewees mentioned a number of youth health websites that they or their friends visited. They suggested a link to the E-MATE program site appear thereon: Reachout, Kids Helpline, Youth Beyond Blue, Lantern, Between the Lines, and NEAMI. Unlike when advertising in educational or professional settings, one interviewee suggested that ‘minor swear words like “crap” could be used on youth-focused websites. These were seen as likely to attract young people’s attention without discrediting the program.

3.3. Summary of Study 1 and preparation of MATE v.2

In this study an initial version of an MT program for young people was drafted in face to face and online editions: Live and E-MATE v.1. Thirteen young people were then interviewed about the proposed design as well as recruitment, retention and evaluation strategy. MATE v.1 was presented to them as a written description and a prototype website.

Interviewees eagerly engaged with the consultation process. Although they were self-selected, their enthusiasm indicated a possible high level of awareness and interest in the topic among young people. This was confirmed by interviewees.

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• Reachout.com is described in full on page 107.
www.kidshelp.org.au is an online corollary of the ‘Kids Helpline’ telephone service: a free counselling service for 5 to 25 year olds in Australia.
www.youthbeyondblue.com is the youth-oriented arm of Beyond Blue, the Australian National Depression initiative.
www.lantern.org.au is an information website for those suffering from any mental health difficulties.
www.betweenthelines.net.au provides youth-friendly information about alcohol and illicit substances as well as substance use disorders.
www.neami.org.au is a local example of a Psychiatric Disability Rehabilitation Support Service (PDRSS). They are non-government organizations that receive some state support. A description can be found on www.health.vic.gov.au/mentalhealth/pdrss.
They commented that MATE v.1 was likely to be well received by their peers. They offered an extensive range of suggestions for improvement. Key aspects of feedback that influenced development of MATE v.2 were: 'look and feel' of the web-page; information delivery medium and pattern; provision of feedback to participants; making homework practical and appealing; volume and composition of outcome measures and qualitative enquiry; tailoring advertising material and avenues to young people; and strategies for retaining participants in the program.

Following this study, another round of discussions were held between the author and Dr Hassed, the SRP author. A summary of the characteristics of MATE v.2 that resulted are presented in Table 8. The face to face edition, Live MATE v.2, was then used in the pilot trial described in Study 2. The process of program revision is discussed in detail in ‘6.1. Integrating feedback from consultees and trial participants with professionals' views’, page 202.
Table 8 Key characteristics of MATE v.2 informed by Study 1 participant feedback regarding MATE v.1 *Superscript numbers signify explanatory notes*

<table>
<thead>
<tr>
<th>Domain</th>
<th>Live MATE v.2</th>
<th>E-MATE v.2</th>
</tr>
</thead>
</table>
| **Weekly education sessions** | Six sessions of 1-1.5 hours on Wed night 6-7.30 PM\(^1\)  
Explaination regarding mindfulness practice relevant to issues critical to young people e.g. family and peer relationships; school, university and/or work pressures  
In-session meditation practice: breath and body awareness  
Discussion of practice just held  
Second in-session meditation practice  
Mindfulness ‘task’\(^2\) of the week introduced and home practice set for the following week; ‘timeout’ used instead of ‘homework’ | 5-10 minute streaming video to introduce key topics for the week  
5-10 minute streaming audio guided meditation exercise  
5-10 minute video of group discussion of successes and difficulties in gaining mindfulness skills  
5-10 minute closing video to recap the week’s learning, suggest practice tasks for the coming week and guide a brief meditation  
Progress bar used at the top of program pages to indicate amount completed |
<table>
<thead>
<tr>
<th>Domain</th>
<th>Live MATE v.2</th>
<th>E-MATE v.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Text material</strong></td>
<td>Weekly 1-2 page handouts covering key teaching points for the week and expected homework instead of <em>Know Thyself</em> book</td>
<td>Downloadable PDF file summarizing the week’s key teaching content, which may be used as an alternative or adjunct to videos for learning or reviewing information</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Domains of well-being, functioning, symptoms, and mental skills</td>
<td>Quantitative measures presented online</td>
</tr>
<tr>
<td></td>
<td>Maximum of 15 minutes for all outcome measures</td>
<td>Opportunities to log home practice and provide qualitative feedback also provided</td>
</tr>
<tr>
<td></td>
<td>Follow-up period reduced to 3 months post commencement</td>
<td>Progress bar used during completion of outcome measures to facilitate engagement</td>
</tr>
<tr>
<td></td>
<td>Log of meditation amount and experience to be collected at session commencement each week</td>
<td>Program completers asked to volunteer to either partake in telephone (remote participants) or face to face interviews and focus group regarding program experience</td>
</tr>
<tr>
<td></td>
<td>Qualitative evaluation regarding program characteristics and experience of mindfulness practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Future randomized trial acceptable with inclusion of waitlist group</td>
<td></td>
</tr>
<tr>
<td><strong>Advertising &amp; recruitment</strong></td>
<td>Via Reachout.com and personal attendance at educational and other youth-oriented settings</td>
<td>Additionally to include: links to the program on websites of youth-specific organizations; presence on Facebook and Twitter</td>
</tr>
</tbody>
</table>

1 This time slot allows participants to arrive at the program location from school, university or work without being too late to make home transport difficult. Wednesday was suggested by a participant above as likely to be a day when young people would be available.

2 As noted on page 127 ‘tasks’ involve particular ways of bringing mindfulness to a certain aspect of daily life (e.g. listening to others).
Chapter 4 Study 2a: Live MATE v.2 evaluation

This study comprised a pilot trial of the face to face Mindfulness Training and Education program Version 2. While qualitative evaluation was the key focus, outcome measures were also administered. Specific objectives were to:

1. Test the feasibility and acceptability of the program and evaluation strategy as perceived by young people and indicated by their level of engagement;
2. Obtain feedback about how it may be improved and input regarding optimal online translation; and
3. Obtain video footage that could be used as content in a future online edition.

Another aim of qualitative data collection activities was to conduct an in-depth investigation of the experience of young people of mindfulness itself as a group of ideas and practices. This aim was fulfilled using a separate method to (2) above. It is presented, along with the resulting model of young people’s experience in Study 2b. A paper describing Study 2a was submitted to Health Promotion International in Oct 2011 and is currently undergoing peer review.

4.1. Methods

4.1.1. Sampling

The overall population of interest was, as in Study 1, any Australian young person between 15-24. The sample for Study 2 was restricted however to those who could attend sessions in Parkville, Melbourne. Adequate command of English was deemed necessary. The MT program in this study aimed to improve mental health and well-being from any baseline level. However, young people suffering a mental or other disorder of sufficient severity to impair engagement with group process or learning the skills taught would be excluded.
4.1.2. Recruitment

Advertising via Reachout.com had led to an enthusiastic response in Study 1. This was the case even though respondents were not offered MT. Therefore it was deemed likely that this website would again be an efficient and sufficient way to attract participants for Study 2.

Other reasons for optimism about successful recruitment were that: only 10 participants were considered necessary; and a free training program was being offered in Study 2. This may have been more attractive than the chance to be part of a consultation only as in Study 1. The study was thus initially advertised exclusively on the Reachout.com website.

The online advertisement appeared as a large panel on the Reachout.com front page for four weeks beginning in September 2010. Only three young people responded to this advertisement. None could in fact participate. All were either located interstate or reported being overloaded with preparations for end-of-year examinations. An amendment to the ethics application was awarded and allowed the advertising strategy to include, in addition to Reachout.com:

- Personal attendance at a local university campus; the author spoke to young people and provided a one page advertisement about the program
- Telephone and email contact with local school and university welfare officers
- Email contact with clubs and societies in local universities deemed to have some relevance to the practice of mindfulness (e.g. psychology association and those associated with spirituality and religious traditions)
- Emails and telephone calls to colleagues who worked with young people
- Posters placed at a local university campus

Following approval of the requested amendment, advertising was conducted over November and December. No responses were received perhaps related to the overlap with the end of the academic year. In February 2011 another round
of advertising was conducted using the methods above. Within four weeks 11 young people responded.

All respondents were provided with the plain language statement for the study by email. They were then interviewed by telephone to assess suitability as per above criteria.* Personal information such as age, gender and occupation were also collected. In the five adolescent respondents aged 17 years or younger, the study was discussed with one parent as well. All respondents met inclusion criteria specified above (i.e. spoke English and did not suffer any disorder that could interfere with group engagement). Verbal consent was initially obtained over the telephone from participants and from a parent for those aged less than 18. At the first program session the plain language statement was made available again. Written consent was obtained from participants and from accompanying parents as applicable.

4.1.3. Mindfulness training program

MATE v.2 was a six week program of 1-1.5 hours duration held on Wednesday night between 6-7.30 PM (initial version detailed in Table 7 and revisions outlined in Table 8). Sessions were facilitated by the originator of the SRP, Dr Craig Hassed. The author was present at all sessions to distribute and collect questionnaires or handouts and to record the program on video. He was positioned in the corner of the room, and was silent throughout sessions. Sessions were held in a room on the ground floor of a small building with homely, rather than institutional design. It was located on the grounds of Orygen Youth Health, Parkville, Melbourne.

4.1.4. Qualitative data collection and analysis

Data collection and analysis activities aimed at assessing program design are presented below:*  

__________________________

* The protocol for this interview has been provided in Appendix D.
* In ’5.1. Methods’, Study 2b the analysis used to develop an explanatory model of the mindful experience will be outlined. Also, the way the collection process was influenced to allow this will be described.
1. A one hour semi-structured focus group was facilitated and audio-recorded by the author one week following the last MT session. Dr Hassed was not present. Seven young people participated in the focus group. Two pre-determined open questions were used to elicit feedback regarding the program: ‘What was it like for you to do this program?’ and ‘How can we fine tune this program?’ This was intended to encourage a dynamic discussion and to allow issues to emerge that the author may not have thought to explore. Facilitator input was then limited to encouragements to elaborate further.

2. In-depth individual interviews were held following the focus group and audio-recorded by the author with five participants. They were 30-80 minutes long and conducted between two to seven weeks following the last MATE session.* It was important that responses beyond those relating to program design were elicited. Two pre-determined questions were asked from all interview participants.* Further questions were encouragements to elaborate or informed by analysis of prior interviews as described in Study 2b.

3. Written responses were collected to questions about: (1) expectations from the program obtained before the start of session one (10 participants); (2) what they actually gained vis-à-vis expectations (collected before the focus group, n=8); and (3) any ongoing effects on their lives (six weeks after the last program session, n=7).

4. A weekly log about ‘what it was like to try the ideas and practices of mindfulness this last week’ was collected on six occasions: at the commencement of sessions in week 2-6 and before the focus group.

5. An online questionnaire about participants’ program and mindfulness experience was devised and distributed after the focus group and the first two individual interviews (i.e. two weeks after the program). This was

* See ‘5.1. Methods’ of Study 2b on page 184 for an explanation of timing of interviews.
* Questions as approved by the institutional ethics committee along with the explanation of the need for informality and flexibility are provided in Appendix D.
intended to expand the data obtained and enhance trustworthiness of data analysis. It was completed by four participants.

During the program Dr Hassed was blind to all written feedback provided by participants. Participants were reminded of this fact on several occasions to encourage free expression.

Transcripts were prepared by the author from audio recordings using a foot-pedal transcriber. In the case of the shortest individual interview a recording fault occurred. This was recognized immediately upon interview completion and an account of the interview was written from memory. All interview transcripts and other written and online data were coded using the NVIVO-9 (QSR, Melbourne, 2010) qualitative data management software. This process involves extracting important or illustrative quotations and conversation sequences from source documents. They can then be grouped easily into categories and subcategories within NVIVO-9 while retaining meta-data about which particular participant or collection modality provided each code. Codes pertaining specifically to the MATE program were separated from those relating to the experience of mindfulness itself. Analysis of the latter portion is described in ‘5.1. Methods’ for Study 2b (page 184).

An initial 21 categories pertaining to program design were derived. These were then collapsed to 13 and upon further analysis to a final nine categories grouped under five themes as presented in ‘Results’ below. The data analysis process was supervised by Dr Belinda Khong.*

4.1.5. Quantitative data collection and analysis

Participants were asked to complete a series of measures at the beginning of session one, before the focus group and six weeks following program completion. In MATE v.1 a one year follow up had been planned. It was reduced to 3 months from program commencement in this study in keeping with consultee feedback.

* Senior Lecturer at the Department of Psychology, Macquarie University who acted as an advisor to the author regarding qualitative methodology.
in Study 1. The latter set of measures was mailed to participants with a stamped self-addressed envelope. Consultees in Study 1 emphasized that scales needed to be brief and take as little time as possible to complete. Four measures were included, taking an estimated total of 15 minutes to complete.

**Proximal measures**

**Difficulties in Emotion Regulation Scale**

Scores on the DERS were chosen as the primary outcome measure for the study. Emotion regulation was considered of particular relevance to young people and the DERS had been used in MT research before, including in this age group.\(^{313}\) It is a 36 item scale developed by Gratz and Roemer (2004)\(^{288}\). It is the most frequently used emotion regulation scale in the literature. It has been subject to extensive reliability testing, including in adolescents.\(^{455}\) It has a high internal consistency (Cronbach’s \(\alpha=0.93\)) and test–retest reliability over a period ranging from 4 to 8 weeks (\(r=0.88, p<0.01\)).\(^{288}\)

The DERS is more comprehensive in its assessment of regulation ability than other relevant scales cited in Appendix A and likely to be more sensitive to change also.\(^{288}\) Using a 5-point Likert scale it assesses the following:

- **Lack of acceptance of emotions**: e.g. ‘When I’m upset, I become embarrassed for feeling that way’
- **Inability to engage in goal-directed behaviour when distressed**: e.g. ‘When I’m upset, I have difficulty getting things done’
- **Impulse control difficulties**: e.g. ‘When I’m upset, I feel out of control’
- **Limited access to strategies for effective regulation**: e.g. ‘When I’m upset, I believe that there is nothing I can do to make myself feel better’
- **Lack of awareness of emotions**: e.g. ‘I pay attention to how I feel’ – reverse scored
- **Lack of clarity of emotions**: e.g. ‘I am confused about how I feel’
Mindful Attention Awareness Scale

The MAAS\textsuperscript{107} is a 15-item measure developed by Brown and Ryan (2003)\textsuperscript{107}. It has been shown to have a reliable inverse correlation with depressive symptoms in validation studies.\textsuperscript{107} It has also been used with adolescents\textsuperscript{373} and is the mindfulness scale used most frequently in the literature. It has adequate internal consistency (Cronbach’s $\alpha=0.82$) and test-retest reliability ($r=0.81$, $p<0.0001$).\textsuperscript{107} The MAAS assesses the tendency to pay attention mindfully to moment to moment experience using a 6-point Likert scale. An example item is, ‘I find myself listening to someone with one ear, doing something else at the same time’.

**Distal measures**

Distal outcome measures were chosen to assess changes in well-being, functioning and depressive and anxiety symptoms.

**Warwick-Edinburgh Mental Well-being Scale**

The WEMWBS\textsuperscript{93} is a 14-item positively worded 5-point Likert scale that assesses the subjective sense of well-being and functioning. It is intended to measure a broad range of positive mental health characteristics and includes both hedonic and eudaemonic perspectives. Domains assessed are: positive affect – feelings of optimism, cheerfulness and relaxation; satisfying interpersonal relationships; and positive functioning – energy, clear thinking, self acceptance, personal development, mastery and autonomy. It has high internal consistency (Cronbach’s $\alpha=0.91$) and test-retest reliability ($r=0.83$, $p<0.01$).\textsuperscript{93} An example item is ‘I’ve been dealing with problems well’.

**Depression Anxiety Stress Scale-21**

The DASS-21\textsuperscript{403} is the short version of the DASS-42. It has a broad coverage of depressive and anxiety symptoms despite its brevity. It has been validated in adolescents\textsuperscript{456} and focuses on the past week, which is a short time-frame appropriate for this study. It is particularly suited to assessment of sub-syndromal symptoms in community samples and has good psychometric properties similar to the longer version (Cronbach’s $\alpha=0.93$).\textsuperscript{457} It was chosen in
favour of the DASS-42 to reduce time taken for completion. It uses a 4-point Likert scale to score such items as ‘I felt down-hearted and blue’.

**Data analysis**

The main aim of quantitative assessment was to add to the understanding of the feasibility and acceptability of Live MATE v.2. Since domains of assessment had been discussed with young people in Study 1, chosen measures were now to be pilot tested. Data were entered by the author into an Excel spreadsheet (Microsoft, Redmond, WA, 2008). Each data row was checked against original questionnaires to ensure correct entry had occurred. Reverse scores for appropriate items in the DERS were then derived in a copy on a second spreadsheet. These were combined into a final spreadsheet from which data could be used for analysis. The Excel program was used to derive means and standard deviations for data and generate graphs. Paired, 2-tailed Student’s t-tests were performed to compare pre-post and pre-follow up data. Within group effect sizes (Cohen’s $d$) were derived by dividing the difference between means (either pre-post or pre-follow up) by the pooled standard deviation.

4.2. Results

4.2.1. Participant characteristics

The first two recruitment periods failed to generate an adequate number of participants (see ‘page 157). On the third occasion 11 young people responded. All were recruited into the study. Eight of those enrolled eventually completed the program (27% attrition). Numerical data below is based on seven participants, as one participant did not return outcome measures at two time points.

Program completers were aged 16-24 (average 19) and were all studying at school or university except for one who was working full-time. Three had been diagnosed with a mental illness previously – depression in all three cases. All three had received counselling in the past. One had also previously used an
antidepressant. All were in remission and were not receiving any form of treatment.

The three participants who left the program did so in weeks 3-4. They were aged 16-18 and did not have a prior history of mental illness or treatment. As the reason for withdrawal, two cited difficulty finding the time to attend due to study commitments and one obtained a new part-time job on the evening the program was held.

Participants reported that they came to learn about the program through a variety of sources: Reachout.com advertisement (seen by friend or family member in four of 11 participants and directly in one); professional (psychologist – not currently providing treatment (1) and school welfare officers (3)); school newsletter (1); and email in workplace (public mental health service (1)). The online advertisement was thus the single most effective method of recruitment but was clearly insufficient to generate the required number of participants.

4.2.2. Qualitative feedback

Acceptability and feasibility

Beneficial effects

Having completed the program, most focus group and interview participants described it in a variety of complimentary terms such as: ‘It's incredibly worthwhile, particularly for students my age’ or ‘I can honestly say that it's changed my life in a wonderful way.’ In the online questionnaire three participants stated that they would ‘definitely’ and one ‘probably’ recommend the program to a friend.

The key benefit highlighted was lowered stress: ‘I am less anxious and when I do become stressed I can handle it better’ or ‘I can apply mindfulness to my everyday life and I don’t get as stressed out about things since participating in the course.’ Participants identified work or study as the key domain where
benefits had occurred. For example, ‘Whenever I’m in a situation, say in school, when I’m getting nervous about something then I can breathe and kind of practice all the things that were taught during the program and yeah, definitely does help.’

Reduction of stress due to MT was conceived by one participant as having an iterative or cyclical nature where week by week:

(1) ‘You identify why you’re stressed and why that thing is freaking you out.’
(2) ‘The program also teaches you how to handle that, so how to actually get the threat into perspective and whether or not it’s worth worrying about and wasting all this energy on and if it’s not then you can almost let go of it.’
(3) ‘As a consequence, you know, bringing it into your everyday life, not getting as stressed, so there is less stress to identify and handle and then it, it [sic] just definitely lowers your stress levels um... at every cycle.’

Mid-program difficulties
The weekly program experience log revealed that this positive outlook was not present continuously. Three stages appeared to occur for a number of participants. In the first two weeks, all participants reflected positively on the program wherein they ‘managed stress better’, were ‘less anxious’, and found meditation ‘calming’ and ‘relaxing’. In weeks three and four, three participants reported emotional difficulties, which they felt were brought on by meditation practice: ‘strong emotions’; ‘[meditation] brought about very negative feelings (sadness, grief) but I was aware of them’; ‘It was intense, just being with your thoughts. Some thoughts you don’t want to think about.’

These participants remained to complete the full program. The three participants who left the program did so on or after week three. As such, written reports of their experience are not available. A unanimously positive relationship with the program re-occurred in the final two weeks. Participants reported ‘getting more used to it’ and that it was ‘amazing how practice helps you to improve so much over a relatively short period of time’.
**Strengths, weaknesses and suggestions for improvement**

**Program structure**

Participants were positive about the iterative, weekly structure of the program. They preferred this to the idea of a daylong training workshop. They also preferred the midweek timing. This provided an opportunity to ‘wind down’ from their work or study. Participants commented that weekends were in general too busy for young people to attend. They suggested snacks may have helped alertness and motivation to attend as sessions were held at a time when they typically ate dinner. ‘Full people = happy people’, one participant wrote.

Regarding session length, it ‘didn’t feel like you were cramming stuff in but it didn’t drag on’. An average suggested length of just under 1.5 hours was calculated from written feedback. This matched the consensus expressed in the focus group: “An hour and half”, I find it a mouthful and I think it’s a really long time until I’m actually in it. It’s overwhelming but then when you get here it’s OK’. The six week duration of the program was deemed appropriate in focus group discussion. It was close to the average calculated from written feedback (6.5). Group sizes ranging from four to 11 participants was agreed on in the focus group as the ideal number to ensure a rich enough mix of experience while allowing every member a chance to speak.

**Content of sessions**

Participants emphasized that ‘discussion immediately after [guided in-session meditation] practice, is really helpful’. It provided ‘a great insight what other people are doing and that enriches your own experience and sometimes, “Oh I never thought about it like that.”’ Participants preferred more in-session meditation practice than had been conducted. They suggested that a shortened discussion of home practice in the preceding week could allow for this.

All participants except one reflected positively on the use of mindfulness tasks (see page 127). They had helped opportunities for applying mindfulness to day-to-day life ‘become a lot more easier to define and recognize’. It was helpful to have practised them ‘in the session and then the next week would be spent
developing that in your own way.’ However, one participant found the tasks ‘too conceptual’.

Some participants felt that sessions were ‘detached from the way when we exit the class and get on with things’. One saw sitting meditation as ‘closing your eyes, sort of escaping where you are’. She reported this would ‘feel really nice’ and that she would ‘think I should do this at home’. Once there however, she would ‘find it to be a completely different environment’ and no longer be motivated to meditate. A number of participants highlighted mindfulness of sounds to be easier to connect with in daily life: ‘Engaging with the world through hearing it has been really interesting and helpful. It focuses my attention on my surroundings, rather than on the chatter in my head.’

Greater variety in content, to ‘mix it up a bit’, was strongly emphasized as desirable in the focus group. Variety was seen as both enhancing engagement and interest but also as a way to connect practices more directly to daily life. Suggested options were: walking meditation; meditating outdoors; awareness of body movement (i.e. mindful stretching or yoga); background music; and use of presentation aids such as slides or a whiteboard.

**Between sessions**

Three quarters of participants indicated, in written feedback, that they would have preferred more home practice than was set. However, all except one found it difficult to fit sitting meditation into daily life: ‘really difficult to find time that it’s really quite [sic] and I don’t have anything to do’. A brief, 1 minute, meditation which had been taught, the *comma,* was found to be easier to integrate into daily life: ‘a good practical idea that can be realistically applied’.

While all participants found CD’s of meditation instructions helpful, only half felt similarly about weekly handouts. On average (calculated from written feedback) 44% of the handout text was read: ‘I found a whole page of text overwhelming’. Three quarters of participants indicated that handouts should still be provided in a future version of the program. It was suggested they be used ‘as a concise
summary of advice/what we should focus on for the coming week. Don't make them too wordy and use bolder headings... dot points, diagrams, something more than a block of text.’ Providing them via email rather than ‘bits of paper that I could easily lose’ was preferred.

Weekly between-session group emails were appreciated by all participants. Telephone contact with those who had missed a session was deemed acceptable and not intrusive. Choice of words was seen as important in both in- and between-session communications: ‘If you're ever working with teenagers don’t use the word “homework”.’ The word ‘task’ was also experienced negatively. It was suggested instead that practices be discussed as ‘something you could try’.

**Being in a group: ‘It’s all about learning off each other’**

Learning mindfulness as a group, rather than individually was noted as a key strength of the program: ‘a lot of the benefit is in actually being there with other people’. One participant noted, ‘I learnt a lot better from discussion. So being told what you should do I find that really difficult to learn from.’ Another expanded on this theme: ‘It helped to be presented with other experiences and views and be able to pick and choose which one really resonated with you.’ Participants referenced each other’s comments from program sessions as having extended or encapsulated their own understanding. This is illustrated in the following exchange between a participant (P) and the author/interviewer (I):

‘I: Tell me more about that mind state... the state of mind where it’s clear.  
M: Um, OK. This is for me personally. I’m not sure if...  
I: Yep, what’s it like for you.  
M: I like to think of it as really strongly influenced by something that... one of the girls we did mindfulness with... I think she said something about it being like the thoughts slip out of your mind, like they become really silky and slip away...’

Some participants spoke about a period of initial adjustment before they ‘found a sense of safety in the room’. This was especially relevant to meditating with
closed eyes: ‘losing that sort of control in a group of strangers firstly was daunting but I started thinking, “Well everyone is in the same boat as I am.”’ This adjustment process may have had its own benefits: ‘You have to put a lot of trust in everyone else. So I guess that sort of helped a lot of relationships with other people because I’m able to trust them a lot more because I’ve managed to trust strangers.’

**Autonomy and flexibility: ‘I don’t have to do his way of mindfulness, I’ll just do my way of mindfulness’**

Participants showed initiative and authority to use what they had learnt from the program in their own way: ‘Why should I change my habits for someone else [i.e. the facilitator] if it doesn’t suit me?... I can be given the tools but ultimately this needs to fit into my lifestyle.’ For instance, one young person used her time on the train to mindfully allow thoughts about the day ahead to arise and pass away as a form of meditation. Another combined meditation with writing. She would keep some pen and paper nearby and immediately after meditation write down thoughts that had occurred to her. She had found this particularly helpful when she had meditated while she was dealing with a difficult situation in her life.

A desire for flexibility was related to an appreciation of the permissive teaching style used: ‘It’s important not to impose any, um... preconceived ideas of what it should be... onto people who are just coming into mindfulness. I found that incredibly helpful... it wasn’t rigid... rather than being told at the start, “OK this is what you should feel and if you don’t there’s something wrong.”’ Another participant commended Dr Hassed’s teaching style by saying, ‘He made you not feel bad for not doing it [i.e. home practice]... he made me feel like, “Well what I’m doing is OK because it fits into my life and he accepts my life, accepts this is how I’m doing things, this is how I’m feeling, and it’s not weird.”’ Not ‘being told what to do but being told this is something you can do made it work.’

As a counterpoint, one participant stated that having at one point practised as she had been told had been beneficial: ‘I felt really uncomfortable [when

* Italics indicate emphasis by participant.*
meditating] and I thought ‘Why do I feel really uncomfortable?’ I guess stopping should be normal... but actually stopping and being aware that I'm stopping was something that was new. Because it felt really strange, I thought probably I don't do this enough'. She then further elaborated on the greater self-understanding gained as a result: ‘Craig [the facilitator] saying you should stop and practice mindfulness and me not being able to do it made me realize this has just become a habit: me not stopping... Maybe the doctor [patient’s GP who she had consulted complaining of fatigue] was right. Maybe I don't stop. Maybe I should.’ This same participant had earlier spoken at length about how engaging with practice in her own way was important to her.

**Experience of evaluation process**

When asked about having done the program as part of a study, the response was favourable. For example, ‘I didn't feel like a lab rat, I felt like, I mean I didn't feel like I'd signed up to anything and I needed to give results. I felt like I was getting something.’ Participants reported that completing the weekly log motivated them to engage with formal and informal practice between sessions: ‘probably good that you had to write down something so you felt compelled to do something’. This was seen as an extension of the group discussion regarding the previous week’s practice: ‘I think I should do something productive in terms of mindfulness so I have something to say and I'll be able to write down that I did it.’

Except for one participant who did not return outcome measures at two time points, all program completers appeared to be well engaged with both outcome measures and weekly questionnaires. In addition to Likert-scored items, 96% of comment boxes were also filled.

**Online translation**

**Potential benefits**

Three quarters of participants felt that an online version of the course was likely to be beneficial. A number of participants noted that an online version would be ‘much more accessible’. This was particularly so for their peers who lived in a
rural area or would otherwise have difficulty travelling to the group. One participant suggested that, regardless of location, ‘a course online would be much easier to access than a course at a set venue’.

Participants suggested that the online edition should not only be a self-contained course but ideally also be a way of ‘providing people with information’ about Live MATE. In this way potential face to face group participants ‘don’t need to commit to it and then kind of go and show up... just to find out about what it’s about.’ Their curiosity may be piqued by the online experience which may lead to their seeking out live MT.

**Challenges envisaged**

Live MATE ‘isn’t fully translatable...into an online environment. Um... there’s something really special about experiencing it with people in a present environment... it is really built in the concept of mindfulness, being in the present moment, so there’s something about actually being there with other people and experiencing it in the present moment.’

Similar sentiments were expressed by a number of participants. For example, one suggested that MT ‘would really need a one-on-one experience.’ For most young people, besides those living remotely, E-MATE should not be ‘a substitute’, another stated. ‘The online version should be a last resort, and I believe that mindfulness is best taught in person’ as ‘it’s really rewarding doing it with other people rather than just sitting alone looking at a computer screen’.

**Optimal characteristics**

It was ‘incredibly important’ to ‘invest a lot of time and resources’ so that E-MATE was a ‘really well presented web-page’. The presentation quality was seen as likely to ‘really influence’ whether young people engaged with the program. This was so especially since ‘first impressions really do count and if, if [sic] people, you know, they hear something from school or one of their friends about mindfulness and they go to this website and it looks really dodgy,... they’ll be like, “Oh, what is this?” and immediately barriers would go up.’
Participants suggested that website quality was critical to ensure retention and beneficial effects for those participants who did engage with it. They highlighted several important aspects: clarity of presentation; ease of navigation around the site; the ability to quickly find information and training modules of interest; and a bar at the top of the page with links to all available components of the site to aid navigation.

The ideal mix of components for a program website was identified by one participant to be:

1. Information about mindfulness itself
2. Information about both live and online courses provided
3. An online application and registration functionality for the live course
4. E-MATE itself where, as an alternative, young people could ‘access and use at their leisure’ a self-contained online mindfulness course

One participant suggested that E-MATE course content be divided into themes paralleling mindfulness tasks offered in Live MATE. Also it was important to ‘allow people to access them in any way they want, whether that be all in one go or viewing a different topic each week. Give people choices and don’t play god…by making them available week by week.’

All participants felt that a combination of short videos and MP3 meditation instructions were an appropriate main teaching vehicle for E-MATE. Videos of the facilitator and the group discussing mindfulness were thought helpful by all participants and preferable to audio. It was suggested that guided meditation would best be presented via streaming audio.

Only a quarter of participants thought downloadable PDF summaries of teaching content would be useful. One participant suggested that a regular live video webcast presented by the facilitator would boost engagement.
Two participants warned against using quotations from past program completers as a way to advertise E-MATE. In the online setting, one commented ‘It always looks seedy to have quotes... it just looks made up...a lot of the time they do make it up.’ She felt that seeming like ‘you’re trying to sell it to people’ in this way, was ‘a major turn off for me and a lot of people I know’.

### 4.2.3. Quantitative outcomes

Mean scores for all participants are presented in Table 9 and Figure 2. The small sample size in this study allowed a detailed examination of outcome measure changes and comparison with demographic and qualitative data in each individual. Individuals’ scores are presented graphically in Figure 3. This is followed by a description of each participant and a summary of their feedback.

#### Aggregate data

Seven participants returned all three sets of outcome measures. They varied little in their rate of attendance at weekly sessions (mean=5 of 6 sessions, SD=1). There was little variation also in the frequency of meditation (mean=5 times/week, SD=1). They varied however in the amount of meditation at each sitting (mean=6 minutes, SD=3). At follow-up 5 of 7 participants reported ongoing engagement with mindfulness practice. Average outcome measure scores are presented in Table 9.

<p>| Table 9 Means and standard deviations at three time points for the seven participants in Live MATE v.2 who completed the program and returned all sets of outcome measures. p. was derived using a paired, 2-tailed t-test; d refers to Cohen’s d effect sizes (pooled SD). |
|-----------------------------------------------|---------|---------|--------|---------|---------|---------|---------|</p>
<table>
<thead>
<tr>
<th></th>
<th>Program entry</th>
<th>Program end</th>
<th>pre-post d</th>
<th>p.</th>
<th>6 weeks follow-up</th>
<th>pre-f.u. d</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DERS</strong></td>
<td>84 (26)</td>
<td>73 (20)</td>
<td>0.47</td>
<td>0.17</td>
<td>71 (22)</td>
<td>0.54</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>MAAS</strong></td>
<td>55 (18)</td>
<td>66 (12)</td>
<td>0.72</td>
<td>0.09</td>
<td>65 (16)</td>
<td>0.59</td>
<td>0.12</td>
</tr>
<tr>
<td><strong>DASS</strong></td>
<td>37 (21)</td>
<td>29 (26)</td>
<td>0.31</td>
<td>0.35</td>
<td>31 (22)</td>
<td>0.28</td>
<td>0.41</td>
</tr>
<tr>
<td><strong>WEMWBS</strong></td>
<td>50 (10)</td>
<td>55 (6)</td>
<td>0.61</td>
<td>0.16</td>
<td>55 (7)</td>
<td>0.58</td>
<td>0.06</td>
</tr>
</tbody>
</table>

**DERS** Difficulties in Emotion Regulation Scale, **MAAS** Mindful Awareness Attention Scale, **DASS** Depression Anxiety Stress Scale, **WEMWBS** Warwick-Edinburgh Mental Well-Being Scale. **DASS-21** scores multiplied by 2 as per standard reporting procedure. *Reduction in DERS and DASS scores indicates improvement.*
The three participants with a history of mental illness (depression) showed greatest changes in DASS scores. Their DASS mean scores were 39, 21 and 23 pre, post and at follow-up vs. 36, 34 and 36 for those without a history. There was no clear difference across time in scores on other scales.

A trend to improvement was observed on all measures used in the study in participants who meditated for five or more minutes at each sitting (n=4, Figure 2). This was the minimum recommended in the program. Little change occurred in the those who meditated less (n=3). These participants were similar at baseline in terms of mindfulness and well-being scores. However, they reported more depressive, anxiety and stress symptoms and emotion regulation difficulties.

![Average scores in young people who meditated ≥ 5 minutes at each sitting (n=4)](image1)

![Average scores in young people who meditated <5 minutes at each sitting (n=3)](image2)

**Figure 2 Relationship between homework engagement and impact of programme on outcome measures**

DERS Difficulties in Emotion Regulation Scale, MAAS Mindful Awareness Attention Scale, DASS Depression Anxiety Stress Scale-21 WEMWBS Warwick-Edinburgh Mental Well-Being Scale; DASS-21 scores multiplied by 2 as per standard reporting procedure; reduction in DERS and DASS scores indicates improvement.
Tracking individual participants

Outcome measure scores separated to individual data are presented graphically in Figure 3. Demographic details are presented below in addition to relevant written accounts of: expectations of the program at commencement; experience week by week during the program; what participants felt they had gained at the end of the program; and their level of engagement with ongoing practice at follow-up. All except participant 1 were present at the focus group. Participants 2, 3, 5 and 7 were also interviewed individually, in addition to the participant who had not completed all outcome measures.

Participant 1: Rachel

Rachel showed improvement on all scales but gains were largely lost, except in mindfulness, by the time follow-up occurred. She was a 24 year old woman working part-time while studying full-time. She had previously suffered an episode of depression which had been treated with psychotherapy and an antidepressant.

Her weekly meditation log revealed practice on average of five days a week six minutes at a time. She reported not having continued to practise meditation between the end of the program and follow-up but ‘keeping it at the back of my mind’. Her expectations before commencement were: ‘Greater awareness of my feelings. More control over behaviour, i.e. not always acting on feelings. Being more present in the moment. Reduced anxiety and better sleep.’ She reported having found discussion of the week’s home practice particularly helpful. She was surprised that more guided meditation had not occurred during weekly sessions. She reported being satisfied overall with the program.

• Pseudonyms are used.
Figure 3 Individual participant scores on the Difficulties in Emotion Regulation, Mindful Attention Awareness, Depression Anxiety Stress and Warwick-Edinburgh Mental Well-Being Scales
Participant 2: Claire

Claire’s outcome measure scores suggest considerably greater difficulties with emotion regulation, depressive, anxiety and stress symptoms and less mindfulness than the group average. Her well-being scores were close to the group average, however. She did not make noticeable gains through the program. She was an 18 year old full-time university student without prior history of mental illness.

She meditated on average 5 times a week for 3 minutes each time. In contrast to her scale scores she did not report significant distress during group discussions or in her individual interview. Her pre-program expectations were: ‘Hopefully achieve a sense of self calm and to find a way to deal with everyday stress (and learn to cope with emotions resulting from unnecessary stress).’ As to whether these had been met she responded: ‘Improved awareness of self meant physical illnesses were easier to recover from which I wasn’t expecting to achieve. So the fact learning all this has affected me mentally and physically wasn’t expected!’ Six weeks following the program she reported meditating ‘weekly, 4 minutes’. She reported finding her ongoing mindfulness practice for recognizing and dealing with stressors.

Participant 3: John

John’s scores followed the average trend of improvement pre-post with some loss of gains at follow-up. He was a 16 year old school student without prior history of mental illness. He had grown up in a Buddhist family and been exposed to meditation and the idea of mindfulness since childhood. He had attended a meditation retreat in the past but had at no other point practised meditation regularly.

He meditated on average 5 times a week for 4 minutes each time. His expectations of the program were limited to one word: ‘everything’. Following the program he reported being surprised that it covered more than simply meditation instructions. He reported ongoing interest in meditation at follow-up but that a noisy household distracted him from formal sitting practice.
Participant 4: Jason

Jason began the program with low scores on the DASS and the DERS and a high level of trait mindfulness. Little change occurred during the study. He was a 17 year old high school student without prior history of mental illness.

He meditated 7 days a week during the program for an average of 7 minutes. His expectations of the program were ‘strategies for reducing stress during exams’. He did not answer the question about how well his expectations had been fulfilled. At follow-up, he reported meditating for 5 to 20 minutes ‘nearly every day’. He stated that, ‘Mindfulness has reduced my overall stress levels with everyday life and my stress levels when I have a test/exam.’

Participant 5: Lucy

Lucy showed modest changes from a favourable baseline on all measures except the MASS. She began at a low base and made a sizeable gain on this scale. She was a 16 year old school student without prior mental illness history. She had been exposed to meditation and yoga sporadically since childhood. She was the only participant who reported any regular practice of meditation before the program.

She practised meditation 5 times a week at home during the program for an average of 12 minutes. Her pre-program expectations were, ‘I hope to decrease my stress levels and be able to focus on the task at hand, rather than worrying about unnecessary things.’ Following the program she reported, ‘I didn't realize at the start that practising mindfulness would have such a profound influence on other areas of my life.’ At follow-up she reported practising most days on two occasions for 15 minutes each time. She had found that learning about mindfulness formally had allowed her to ‘become more in touch with myself and my environment’ and ‘use mindfulness to actively identify and manage my stress’.

Participant 6: Jackie

Jackie showed a similar pattern across all outcome measures. She gained benefits pre-post which were not maintained at follow-up. The exception was the DASS
where little change occurred during the study period. She was a 25 year old woman working full-time. She had suffered one depressive episode, now resolved. She had received psychotherapy previously but no psychotropic medication.

She meditated at home less than all other participants: twice per week for 3 minutes each time. She had not recorded any pre-program expectations. In her post-program feedback she expressed disappointment that she had not had the ‘will’ to practise more regularly at home. She reported not having practised since the program ended when questioned at follow-up.

**Participant 7: Sue**

Changes for Sue were the most dramatic and most favourable in the entire group. She showed the greatest pre-post change on all scales and her gains were largely maintained at follow-up. She was an 18 year old full-time university student with a previous history of depression and psychotherapy but no antidepressant treatment.

She reported practising meditation 7 days a week for 5 minutes each time during the program. Her expectations were: ‘A greater awareness of my mentality and better problem management techniques.’ At the end of the program she reported being surprised at the amount of time spent in discussion but that she had found this helpful. At follow-up she reported no formal meditation practice. However, she stated that she had continued informal meditation and that she found this beneficial. For instance, instead of having an outburst during interpersonal conflict, she now ‘consciously moderated’ her behaviour. She suggested this indicated greater self-control. She was the only one (of three) participants with a history of mental illness who volunteered for in-depth interview. Her responses and interaction did not indicate a different mood state or cognitive style vis-à-vis other interviewees.

*This statement is made based on the clinical experience of the author (who also conducted qualitative interviews) as a consultant psychiatrist.*
Integrating individual findings

Claire’s negative scores on the DERS and the DASS account for much of the appearance of initial distress and lack of change in the group who meditated less than five minutes at a sitting. In contrast, in her interview she: (1) did not report a significantly higher level of day-to-day distress or symptoms than other participants; (2) had been practising informal meditation regularly; (3) emphasized practical and emotional benefits from practising mindfulness and provided a number of examples; and (4) appeared to understand the concept well.* A scale artefact may be a possible explanation. She may have interpreted scale items more negatively than others at baseline for instance. This may be due to a possibly driven and perfectionistic style that could be inferred from her interview (e.g. ‘I don’t stop’ – see page 170). Further, the standardized outcome measures used may not have been sufficiently sensitive to detect all meaningful change.

Jason and Lucy began the study with better than group average scores in the DASS, the DERS and the WEMWBS and showed little change. Jason did not participate in an individual interview. His post-program feedback however was positive. Lucy was effusive, at interview, about the benefits of practice in a variety of domains: ‘I can honestly say that it’s changed my life in a wonderful way’. It is possible that the limited change in scores for both participants was due to a ceiling effect.

Lucy’s MAAS scores began at well below the group average. A possible explanation is that she may have understand the items in the MAAS better owing to her greater prior meditation experience. She may thus have scored herself more accurately, or critically, than others. An example from the MAAS is, ‘It seems I am “running on automatic” without much awareness of what I’m doing’ (Item 7). This would be very familiar to those with prior exposure to mindfulness, which is often described as an alternative to being on ‘autopilot’.252,254

* Participants’ understanding of mindfulness has been detailed in the next chapter which presents results of the grounded theory analysis.
4.3. Summary of Study 2a

Live MATE v.2, designed and refined in Study 1, was tested in a pilot trial with 11 young people. The primary aim here was to assess program feasibility and acceptability as perceived by young people. Participants expressed enthusiastic responses about MT during qualitative enquiry and this was born out in their degree of actual engagement with the program. The program is thus a promising vehicle for mental health promotion using MT for young people.

The attrition rate of 27% in this trial compares favourably other psychological interventions. In a meta-analytic review of participant dropout in psychological intervention research an overall rate of 47% was found.\textsuperscript{458} Participant dropout is a particular problem in health promotion research.\textsuperscript{459} Participants who are not recruited for treatment of a specific problem may be less motivated to remain.\textsuperscript{460} Attrition rates, paralleling the difficulty in recruitment, are higher in young people than in adults.\textsuperscript{461} The largest body of evidence in MT concerns adults with clinical disorders. Attrition rates of 23%-25% have been reported.\textsuperscript{233,234} Young people without clinical disorders may at first glance be thought to be less likely to be motivated to take up meditation. The findings in Study 2a indicate that they may in fact engage with MT to a similar degree.

A secondary aim in Study 2a was to test the combination of evaluation strategies used. Participants engaged well with the evaluation process, and did not ‘feel like a lab rat’. As an indication of this, 96% of comment boxes in questionnaires used at the eight data collection time points were filled out. Having to complete weekly logs was noted as motivating for home practice: ‘good that you had to write down something so you felt compelled to do something’. A sizeable proportion of program completers spent up to 80 minutes attending the focus group (seven of eight) and individual interviews (five of eight). This again supports the view that the evaluation strategy used was acceptable to young people.
Key strengths of the program identified by pilot trial participants were: the opportunity to learn from and connect with a group of peers; presentation of mindfulness in a secular framework; provision of home practice audio instructions and email reminders; and a permissive overall approach to home practice. Participants indicated as weaknesses: the limited variety of meditation practices presented; inadequate focus on how skills taught may be applied to daily life; and use of words such as ‘task’ to describe home practice.

Three program completers experienced difficulties with taking up a new meditation practice. They reported three stages of experience related to this: initial positive effects in the first two weeks; predominantly negative affect in weeks 3-4; and return to a stable positive emotional state in final weeks. The three participants who left did so in weeks 3-4. As they did not provide data at this point however, it is unclear whether they had similar difficulties.

Many participants found it difficult to incorporate formal meditation into their daily lives. While some asked for more home practice to be set, the overall average duration of mediation at each sitting was six minutes across all program weeks. Participants appeared nonetheless to benefit from the program and from meditating and were able to apply mindfulness in daily life effectively. The shortest practice type presented, the one minute ‘comma’, was unanimously lauded as the most useful.

A trend towards pre-post improvement on outcome measures of emotion regulation, depressive and anxiety symptoms and well-being was found in aggregate data. Participants did not differ greatly in frequency of attendance at sessions or meditation sittings during the week. Data was separated based on the only practice and engagement variable in which they did differ (duration of meditation at each sitting). This indicated that improvements occurred only in

* This is explored in detail in the next chapter which is focused on the mindful experience of participants. See also the discussion of previous studies on the effect of home meditation duration in ‘7.4.2. Home practice: Balancing authority and flexibility’, page 242.
those who meditated for at least 5 minutes at a time. Gains in this subgroup were maintained at follow-up. Participants who reported a shorter meditation duration scored higher on measures of negative mental health at baseline. Results from the two participants with prior meditation experience were quite different from each other: both in the pattern of changes on outcome measures and in the duration of meditation practised during and following the program.

Participants with a history of depression began the course with similar baseline DASS scores to those without. They showed trends towards improvement in scores on measures of depression, anxiety and stress, while those without a history of depression showed little change. Participants who began the program with scores indicating lower symptoms and better positive mental health in general showed less change.

For Study 2a qualitative data were analysed with a pragmatic focus on assessing the MATE program. Next, in Study 2b, a qualitative investigation of participants’ experience of mindfulness practice itself is presented. Results from both studies are integrated and discussed in following sections.
Chapter 5 Study 2b: A qualitative investigation of the mindful experience

The aim in this study was to examine the lived experience of young people working with the ideas and practices of mindfulness. The qualitative analysis was separate and conducted differently from that in Study 2a, although it relied on the same sources of data. The research paradigm that informed this study influenced the process of data collection also, as described below. A paper based on this study was submitted to the Journal of Adolescent Health in April 2012 and was accepted for publication in August 2012 (see Appendix E).

5.1. Methods

5.1.1. Participants

Claire, John, Jason, Lucy, Jackie, Sue and Mary attended the focus group. Claire, John, Lucy, Sue and Mary participated in an individual interview also.

All participants are described in Chapter 4 except for Mary who did not return pre-program and follow-up outcome measures. Mary was an 18 year old university student. She had never been formally diagnosed with a mental illness nor received treatment. Based on weekly home practice logs, she, on average, meditated three times per week for 6 minutes each time. At the conclusion of the program she wrote: ‘I am very happy that I gained a more natural sense of self, slipping into “just being” was really fluid and satisfying.’

5.1.2. Data collection and analysis

A description of the focus group, in-depth interviews and written sources of data has already been provided in the previous chapter. The collection and analysis process was informed by a grounded theory paradigm. It followed the model advanced by Strauss and Corbin (1990)\(^\text{426}\) as opposed to that of Glaser (1978).\(^\text{425}\) Data analysis progressed in parallel with data collection. Emergent

\* See ’2.4.1. Qualitative evaluation’ (page 110) for a description of schools of grounded theory practice.
categories* were derived at several stages between the focus group and each interview. The explanatory model that could capture and integrate participants’ experiences was also developed iteratively. These analytic activities in turn informed the choice of questions in each future interview or round of other form of data collection. It allowed an internal, participant-driven validity check of emerging themes. A balance was struck between: (1) time required for detailed analysis between each interview or focus group; (2) the necessity of capturing data close to the MT experience; and (3) days and times when participants were available for interview.

All initial iterative analyses were performed by the author. Before the last interview, key codes, emergent categories, and the explanatory model were discussed with Dr Belinda Khong. This last interview was extended to 80 minutes. This allowed full elaboration of categories that had been suggested by previous interviewees as well as any aspects of experience unique to this participant.

Following completion of data collection, 12 further iterations of data analysis were conducted by the author. Collation and open coding of all transcripts, written and online feedback led to an initial 59 categories of mindful experience being derived. A transcript of the last interview was then reviewed to discern any unifying narrative. This interview was chosen as it was the longest and had followed all previous rounds of data analysis. Eleven subcategories, supporting six categories, appeared to capture this participants’ experience. All other coded material was then reviewed with reference to these categories and a total of 16 subcategories arrived at. These were collapsed into six final categories which supported a main storyline or core category426 (see page 187). These were

* In qualitative reports the word ‘category’ commonly refers to a heading under which similar codes (e.g. quotes) can be grouped. ‘Themes’ represent a further level of integration and may contain several categories. However, in grounded theory terminology the word ‘category’ is used in the usual sense of ‘theme’. This convention has been adhered to in this chapter.
• Senior Lecturer at the Department of Psychology, Macquarie University who acted as an advisor to the author regarding qualitative methodology.
reviewed in discussion with collaborators on two further occasions. This led to revision and integration of the six categories derived into three phases which together provided an explanatory model of experience.

The validity of coding and analysis was enhanced in the following ways. Dr Jacqueline Norrish* independently coded a portion of four transcripts. Although her wording of categories was slightly different, all groupings matched those previously identified by the author. Dr Khong reviewed the coding strategy, emerging categories and the explanatory model elaborated by the author on three occasions in addition to her input prior to the last interview. She also compared codes and themes generated by the author and Dr Norrish. The author’s principal supervisor, Prof. Helen Herrman reviewed the initial elaboration of the main storyline and themes with reference to accurate representation of participants’ voices. The researchers’ perspectives and how these may have influenced analysis have been discussed in ‘2.4.1. Qualitative evaluation’ (page 110). Below, quoted text signifies participants’ own words.

* Tutor, School of Psychology and Psychiatry, Monash University.
5.2. Results: An integrative picture of young people and mindfulness

A central or defining narrative that appeared to encapsulate and integrate the various participants’ voices is presented in Box 1. It evolved and was refined through iterative data analytic stages. Development of this main storyline or core category has been recommended as: (1) an analytic outcome – a key, concise message from the data; and (2) an aid during the analytic process – providing a unifying thread to which the full breadth of codes and categories may be related.426

Box 1 Main storyline integrating interview, focus group and text data

Young people ‘freak out’ in response to the challenges they face. They initially relate to mindfulness practice as a ‘soothing drug’ but soon discover that it is ‘a mindset’ not just a stress-management technique. It ‘allows you to have that confidence in yourself’ and ‘made you more competent’ to meet future challenges.

5.2.1. Explanatory model and categories of experience

Participants’ experience appeared to progress through three phases as illustrated in Figure 4. Phase 1 represents participant’s experience before exposure to mindfulness practice. Emotional distress was common. There was a tendency to react to emotions in often unhelpful ways, for example, ‘shutting them out or overreacting’. This could create a vicious circle whereby reactions to challenges led to greater stress or a worsening of the stressful situation.

Initially, in Phase 2, participants engaged with mindfulness practice as a ‘stress management technique’: ‘I was able to relax on a lot of things I used to be so uptight about’. With ongoing practice they began to realize that even when they could not control situations they had some control over their emotional responses.
Figure 4 Relationship between phases and categories of participants’ experiences with mindfulness practice
Finally, in Phase 3, with further mindfulness practice, greater clarity of mind, and self-understanding began to emerge. This ‘changes how you operate and perceive the world’. It created greater ‘confidence’ and a sense of being ‘competent’ and ‘a part of the world’. By ‘bringing that [mindfulness] into your everyday life’ the same challenges and stressors that fuelled the discomfort in Phase 1 were now dealt with differently. The vicious circle above was countered by ‘this fantastic cycle of identifying stress, handling it,… so there is less stress to identify and handle.’

An overview of phases along with a summary of categories is presented in Table 10. Categories are elaborated in detail below with reference to participants’ own words.

Table 10 Phases and categories defining young peoples’ experience of mindfulness

<table>
<thead>
<tr>
<th>Phases</th>
<th>Categories</th>
<th>Associated experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Distress and reactivity</td>
<td>‘Freak out’</td>
<td>Emotional volatility, sensitivity and self-doubt</td>
</tr>
<tr>
<td></td>
<td>‘Overreacting’</td>
<td>Dealing with emotions in unhelpful ways such as shutting them out or reacting impulsively</td>
</tr>
<tr>
<td>Phase 2: Gaining stability</td>
<td>‘Relaxing’</td>
<td>Calming, lowering identification with emotions and lessening self-doubt</td>
</tr>
<tr>
<td></td>
<td>‘Conscious control’</td>
<td>Agency in handling inner emotional experience and recognizing the limits of control over situations</td>
</tr>
<tr>
<td>Phase 3: Insight and application</td>
<td>‘A more in-depth consideration’</td>
<td>Greater understanding of self and others leading to more constructive internal and external actions</td>
</tr>
<tr>
<td></td>
<td>‘Confidence’ and competence</td>
<td>Enhanced sense of engagement with day-to-day life and an ability to apply mindfulness to meet ongoing challenges</td>
</tr>
</tbody>
</table>
'Freak out'
Participants associated being a young person with emotions 'being all extreme all the time' and being vulnerable to 'change moods in a split second'.

'I was really, really stressed. I was actually quite distressed about being, you know, being an adolescent, that's what adolescents do. Freak out.'

'When I get caught up on something it's really easy to spiral out to that anxiety way of thinking: when you're just questioning and no answers are coming through.'

A 'self-doubting, self questioning voice' was often present in this state.

'You're always saying to yourself, “Am I doing the right thing?” Or I'd put myself in someone else’s shoes and I’d think, “If I was looking at myself, I'd think I was lazy.” And it's a kind of self-hate cycle and you get that anxiety as well.'

They reported often being 'uptight' or a 'big ball of worry like, “This could happen.” Or, “This did happen.” Or, “What will happen?”' Interpersonal and academic challenges were the most frequently identified sources of stress. Exquisite emotional sensitivity meant that feelings could be triggered easily and by a range of stressors such as 'blogs that talk about “oh I’m so sad and stuff”: that impacts me and makes me feel so sad.' Nagging worries were common regarding examinations, 'particularly, “if I fail, if I fail”'.

'Overreacting'
Participants reported, 'freak out' to be associated with 'emotionally responding or being selfish or destructive'. This was a state of 'being caught up... like when you get more emotional reactions, as opposed to being considered and thought out in actions that you take when you have a clear mind.' Reactions were reported to occur: internally whereby intense or unpleasant emotions may be
dealt with by ‘shutting them out’; or externally through ‘overreacting’ or being ‘socially destructive’, for example, ‘frequently losing my temper at my family’.

‘Relaxing’

Participants emphasized finding mindfulness practice ‘relaxing’*: 

‘I feel more stable... there's a balance.’

‘I find it kind of grounds me.’

‘Meditation was a great way to re-centre yourself.’

‘Meditation for me was like a soothing drug.’

Besides a ‘stopping’ or ‘slow down’ effect, mindfulness was reported to bring calm through:

(1) Allowing a more balanced view of challenges;

‘I just find it really useful focusing on the breath and then it just automatically calms me down... and it just gets it into perspective as well, oddly enough I find... Like, “It’s OK, I’m still breathing, it could be a lot worse.”’

(2) Enabling a less all encompassing identification with unpleasant emotions: ‘being apart from the worry: like there was you and there was the worry’. A mindful state was reported by one participant to be ‘a really reflective, calm, um... just generally slightly detached state so... and I don’t mean detached as in these are my emotions and they’re totally separate, I

* As detailed in 'Mid-program difficulties' (page 165) this experience of calm was interrupted for three participants by a negative period, and then returned again, in the latter third of the course.
mean I, I [sic] don’t get caught up in everything so it really helps to distance myself just slightly.’

(3) Diminution of the ‘self-questioning voice’ wherein young people were able to ‘not shut it out all the time but choose whether or not to listen to it’.

‘It’s sort of stopped that kind of mental beatings of myself.’

‘You just don’t really think like that when you’ve been practising mindfulness because you think, “If I think like that, it’s just being self-destructive.”’

‘Conscious control’
This calmer mind was consistent with a sense of having ‘conscious control over life and my emotions’. In relation to internal experience participants reported:

‘I am less anxious and when I do become stressed I can handle it better.’

‘Whenever I’m in a situation, say in school when I’m getting nervous about something, then I can breathe and kind of practice all the things that were taught during the program and yeah, definitely does help.’

‘I could be in the most depressed mood ever… I do like a one minute mindfulness session with myself sort of thing and I think, “How do I physically feel about this? Should I just remove myself for a while? Should I just come back to this when I feel more neutral?” I sort of pick myself up after that.’

Participants felt ‘more in control’ of themselves as a result of mindfulness practice. They experienced this as ‘not controlling [emotions] but being aware of them and then dealing with them’.
'Rather than me ending up in some kind of panic attack. Rather than that spiralling kind of thinking. It'd be like, “Well that’s a problem that can sit for later.”'

'I’d be able to just let it pass me by rather than getting all emotionally caught up in it'.

Of note was one participants’ reflection on the novelty of the experience of self-control. It ‘was also kind of a frightening experience because I don’t feel like I’ve ever had control over myself so that was sort of strange but also good.’

Mindfulness appeared to help participants better identify what situations may be subject to their control. When a situation could not be changed, they found changing their relationship to it could be helpful.

'It’s good to be able to recognize it: things that you can and can’t control.’

'Even when it’s something that you can’t always have total control over I find like at least you can recognize it’s happening.’

‘A more in-depth consideration’
In later weeks of the program, with ongoing mindfulness practice, participants reported effects beyond feeling ‘stable’ and ‘in control’. Mindfulness was seen by one participant as a way of ‘learning without the books’. ‘A clarity of mind which doesn’t allow you to go into that destructive, stressed out mental state’ led to being ‘more aware of what’s happening around you, as well as what’s going on in yourself.’

‘A more in-depth consideration of the world around you. As well as your own thoughts and feelings’

‘As time progresses, I notice how much mindfulness has changed my perception and management of stress and also of the world around me…
I've noticed in myself a greater awareness of my feelings, thoughts and surroundings.

As ‘a way to look into yourself’ or ‘getting a sense of who you are’ mindfulness practice brought greater understanding of: the body, thoughts, emotions; the relationship between the two; and their ephemeral nature.

‘I consider mindfulness as observing myself so that would be observing my body and how it’s feeling um... and also observing my mind and how it’s feeling and then making a link between the two.’

‘This must be related. Like my body feels shit so my mind feels shit.’

‘It’s easier when you have a clear mind. It’s not like those thoughts have stopped or inhibited in anyway. It’s more like you can see the progression happening between those thoughts. And there are more clear links and everything makes much more sense. It’s more like, I keep wanting to say objective.’

‘Observing moods: It’s a way of figuring out where my moods start and come from and when I’m feeling them and what causes them.’

‘Helps me sort out what my mind thinks I’m feeling and how I’m actually feeling and then relate the two together.’

‘You are aware of the change that is happening within yourself... You’re changing all the time. All the time and you change in the present.’

Mindfulness allowed ‘understanding how you work and what freaks you out and how to avoid that or remedy it.’ Here a participant was discussing her newfound ability to recognize her body’s need for rest: ‘I thought, “Right! If I get my body repairing then my mind will start repairing.”’
Self-understanding was distinguished from self-centredness. Mindfulness was ‘about acknowledging how you’re feeling. And I think that’s a big deal for me because I don’t really listen to myself. So I’m able to think about myself a lot more without being overly selfish and self-indulgent.’

A ‘clear mind’ was one that functioned better:

‘My mind cleared and I realized that once I’d achieved that, it was OK once some thoughts came back in and I could deal with them a lot more easily.’

‘Think of it as a table... Like when you’re working very hard you’ll have papers strewn across the table and you have to find things... Imagine if all the writing on all those pages, all the text on that was to disappear, or even better, all the pages, all the books and all the pencils and all that, they were to disappear off the table. That’s a bit like my mind. And then you can put a new thing on the table. It’s sort of like a mind clearing.’

When faced with situations in daily life this clarity allowed participants ‘to consider things in a... different light’. In interpersonal interaction mindfulness had ‘helped to create that idea in my mind that everything that goes wrong is not my fault.’ Another example concerned the tendency to procrastinate about writing essays:

‘When you’re thinking clearly you think, “Well I’d just be avoiding it and it’s just going to prolong how long it’s going to take to do it so the best decision in this situation would be to just write it.”’

With ongoing practice a greater ability to let go of, rather than react to, distressing inner experience occurred:

‘I’ve found recently that my friends have been spreading rumours. Saying stuff that’s just not true. Saying stuff that I’ve said that’s not true to other people. And I’ve found that rather than me going out to confront them
outright I've let it just pass by rather than creating confrontation or that kind of struggle where all our friends are divided over the issue.'

‘Confidence’ and competence

Beyond calm and clarity participants appeared to embrace mindfulness practice as a way to open to and meet day-to-day challenges.

'I initially thought mindfulness was merely a stress-management technique. I now understand that it's so much more than that: it's a way of viewing oneself, one's emotions, one's surroundings and one's general well-being. It's a mindset, not just a stress-management technique... Mindfulness is now present in almost everything I do.'

Having achieved greater stability and understanding, participants were now more open to the world around them ‘rather than have an egocentric kind of perspective, which you know seems to be encouraged these days.’

'It definitely did develop my ability to, to [sic] feel like I was an active member of you know my family and my school and everything like that just because I was no longer worrying about things that could happen or did happen. I was focused on what was going on at the moment and I realized that I was there and everyone else was there. So it definitely helps you to tie yourself to all the people around you who are there with you in the present.’

'You actually just become kind of um..., a part of the world and um, by being in the present moment and by bringing your focus back to now it’s like, “Hang on, I'm here and I’m participating in what’s going on right now.”'

In contrast to being wracked by the ‘self-doubting’ voice in Phase 1, mindfulness allowed greater confidence in day-to-day life as 'you can apply it to any
situation’. Here for example, a participant was discussing her uncertainty about continuing with a romantic relationship:

‘Mindfulness allows you to have that confidence in yourself. Because like I said before it stops that questioning side of you. Like Dolly magazine might say, “You shouldn't be with him anymore,” or like “You're wasting your time.” It’s a relief to not always be thinking “I’ve gotta do something about this, I’ve gotta do something about that.”’

Greater confidence appeared to arise as a result of a clarity of mind that led to greater self-understanding. ‘Lessening the intensity of the emotions that had the potential to cloud my reasoning’ meant that mindfulness ‘allows you to make decisions or to tackle situations umm… with a yeah, best mindset that you possibly can tackle them with. Without the resulting stress that, “Did I make the right decision?” or whatever. Because you feel like you dealt with it as best you can.’

‘I can sort of move about a lot freer now knowing that I know myself and I know what I’m capable of doing.’

Confidence also occurred in retrospect and in relation to participants’ sense of themselves as ethical individuals. Beyond empowering action, bringing a ‘best mindset’ to situations meant a lesser likelihood of regret about having wronged others. Having tackled a situation with mindfulness ‘allows you to justify your own actions because you can look back and say well I think I acted as moral as I possibly could in this situation.’

Besides leading to more confidence, participants reported that mindfulness practice ‘made you more competent’. This could be because ‘you see things much more clearer and are able to make more balanced decisions because you feel like you’re acting more rationally’.
‘You know like you can make the best conscious choice that you can make. That you know of course you’re making less mistakes because you’re considering things more deeply.’

In the interpersonal realm, this greater competence was expressed as being ‘more tolerant’ and considerate of others without compromising oneself.

‘I think having more consideration for others leads to having a better relationship with others, as well as looking after yourself. Mindfulness gives you the ability to be more objective, be more clear in your thinking. It almost gives you, I couldn’t say a “justification”, but it allows you to conduct yourself more rationally.’

5.3. **Summary of Study 2b and comparison with quantitative findings**

The analysis of qualitative data in Study 2b led to an explanatory model of how participants interacted with the concepts and practices of mindfulness. Participants appeared to have developed a sophisticated understanding of, and engagement with, mindfulness practice. With ongoing practice, and beginning in a relatively short time, they were able to experience progressive benefits. Beyond initial emotional stability and control, they were able to develop a greater clarity of mind and an ability to engage with future challenges with greater confidence and competence. Further, participants’ description of their state of mind before the program shed light on what it is like to be a young person. Emotional turmoil and impulsive reactions to emotions were common difficulties.

5.3.1. **How does qualitative data relate to scales used to measure effects of mindfulness practice?**

Items representing subscales of outcome measures, the scores on which were reported in the previous chapter, are presented below along with qualitative data that suggest how changes on each item may have occurred.
**Emotion regulation:** The primary outcome measure, the DERS, has six subscales. Two subscales ‘awareness’ and ‘clarity’ are grouped together below:

1. **Lack of awareness** (e.g. item 2 (reverse scored): ‘I pay attention to how I feel’) and **clarity of emotions** (e.g. item 9: ‘I am confused about how I feel’): Participants commented that greater understanding of their emotions was central to the benefits of meditation. This may take the form of ‘observing moods’ or distinguishing between ‘what my mind thinks I’m feeling and how I’m actually feeling’.

2. **Lack of acceptance of emotions** (e.g. item 11: ‘When I’m upset, I become irritated with myself for feeling that way’): Participants discovered that ‘when you’ve been practising mindfulness… you think, “If I think like that [i.e. ‘mental beatings of myself’], it’s just being self-destructive.”

3. **Impulse control difficulties** (e.g. item 14: ‘When I’m upset, I become out of control’): The ‘conscious control over life and… emotions’ reported took many forms including being able to ‘let it [e.g. an affront] just pass by’.

4. **Inability to engage in goal-directed behaviour when distressed** (e.g. item 13: ‘When I’m upset, I have difficulty getting work done’): Better functioning could result because mindfulness practice lessened ‘the intensity of the emotions that had the potential to cloud my reasoning’.

5. **Limited access to emotion regulation strategies** (e.g. item 28: ‘When I’m upset, I believe that there is nothing I can do to make myself feel better’): Besides generating a general sense of greater ‘conscious control’, mindfulness practice included specific ways to deal with stressful situations (e.g. ‘I can breath and kind of practice all the things that were taught during the program’).

**Depressive symptoms:** The construct of depression was measured by a subscale of the DASS. Two of the seven items that make up this subscale are: ‘I was unable to become enthusiastic about anything’ (item 16); and, ‘I felt I wasn’t worth much as a person’) (item 17). Meditation practice was sometimes used as a tool to directly reduce unpleasant affect, in this case depressive symptoms: ‘I could be in the most depressed mood ever… I do like a 1 minute mindfulness session...
[and] pick myself up’. Lowered self-criticism was likely to support a sense of self-worth. In addition, focusing attention on the present moment was noted by one participant as increasing her sense of engagement with life, to be ‘an active member of you know my family and my school and everything’.

**Symptoms of anxiety:** Anxiety was also measured by seven items on the DASS. An example from this subscale is, ‘I felt I was close to panic’ (item 15). The ‘relaxing’ effects of mindfulness practice were reported from very early in the program. They appeared to be of direct benefit in reducing anxiety. For instance, the ability to avoid being ‘caught up’ in ruminations was distinguished from ‘ending up in some kind of panic attack... [or a] spiralling kind of thinking.’ Meditation skills were again available to participants as practical ways to deal with symptoms: ‘focusing on the breath... automatically calms me down’.

**Stress:** This was measured by the remaining seven items on the DASS. Examples are: ‘I found it hard to wind down’ (item 1); and ‘I tended to overreact to situations’ (item 6). Reduced stress was identified by participants as the key overall benefit of learning mindfulness. One described ‘this fantastic cycle of um... of identifying stress, handling it... so there is less stress to identify and handle.’ The ability to reduce stress was achieved: directly (e.g. ‘I’d be able to just let it pass me by rather than getting all emotionally caught up in it’); and indirectly through greater confidence and competence in dealing with stressors. Processing mental content was less stressful as a result of meditation because the ‘mind cleared’. Participants reported an enhanced ability to relate their physical state to emotional content and take necessary action to reduce distress: ‘If I get my body repairing then my mind will start repairing’.

**Well-being:** The WEMWBS contains statements such as: ‘I’ve been feeling confident’ (no. 10); ‘I’ve been dealing with problems well’ (item 6); ‘I’ve been feeling interested in other people’ (item 4); or ‘I’ve been thinking clearly’ (item 7). Mindfulness fostered ‘confidence’ and, through ‘the ability to be more objective, be more clear in your thinking’, led to a perceived competence in dealing with problems and improved decision-making. Further, mindfulness
‘helps you to tie yourself to all the people around you’. This was achieved both through lessening ‘socially destructive’ emotional reactivity and through ‘having more consideration for others’. The greater self-knowledge that came with mindfulness practice led one participant to ‘move about a lot freer now knowing that I know myself and I know what I’m capable of doing.’

Further elaboration on possible mechanisms of changes in scale scores is presented in ‘Chapter 7 Discussion’ with reference to previous literature. How qualitative findings relate to the existing theoretical literature on the mindful experience and how they contribute to mindfulness pedagogy is also described. Next, in Chapter 6, how qualitative findings from Studies 1 and 2 were integrated with specific reference to program design is presented. Characteristics of MATE v.3, the final version of program which resulted from this process, are then outlined.
Chapter 6 Development and characteristics of the final version of the MATE program in live and online editions

In this chapter, how Studies 1 and 2 data were integrated with prior knowledge about optimal program design is described. Characteristics of the resulting, refined Mindful Awareness Education and Training program, MATE v.3, are summarized in three tables at the end.

6.1. Integrating feedback from consultees and trial participants with professionals’ views

Health professionals or researchers often differ from potential recipients as to what is important in a health enhancement program. This is a common challenge in making use of feedback on an initial design. A balance is needed between: (1) respect for the self-knowledge that a chosen target population brings; and (2) previously available evidence of what elements in program design predict effectiveness. The importance of respect for participant autonomy was clear in the pilot trial. One was, for example, adamant that she did not ‘have to do his [facilitator’s] way of mindfulness’. Participants reported on how they had taken charge of the practice to ensure that it was both suitable and beneficial to them.

6.1.1. Giving consultees’ voices due regard

In Study 1, consultees did not have experiential knowledge of the characteristics and rationale of MT. It was thus appropriate for researcher’s opinions to hold some sway. Whether to include at least some meditation practice in the program, for instance, was not left up to consultees. Data collection and analysis in Study 1 was therefore largely guided by a priori themes. An overly unstructured and open approach, ‘How should we teach mindfulness?’, may have been less fruitful.

All the same, in Study 1, the author made a conscious attempt to avoid dominating the agenda. For example some balance was struck by using a very concise presentation of the proposed program as a blueprint for interviews. This
allowed researchers to ‘insist’ on some key aspects thought to be necessary while leaving room for extensive input from consultees.

For MATE v.2, suggestions from some Study 1 participants were not followed: that words such as ‘meditation’ or ‘stress’ be omitted from advertising; that registration for the online edition be phrased as an ‘application process’; and that questionnaires not take more than 10 minutes to complete. The author decided that while following these suggestions may have helped recruitment and retention, it could also lead to inaccurate and ethically questionable advertising and disallow effective program evaluation.

Suggestions from some participants were in conflict with others necessitating compromise. For example, minimizing the number of questions asked during outcome measurement was unanimously agreed on by participants. Nevertheless, some suggested adding more functional elements to the already broad range of domains. The well-being scale ultimately used covered some functional issues suggested but a separate functional scale was not included to minimize the time taken for evaluation.

### 6.1.2. Comparing with mindfulness-trained young people

Did feedback from participants in the pilot trial: (1) differ markedly from MT-naïve consultees; and/or (b) converge with those of professionals? Comparing results of Study 1 and Study 2a suggests ‘a little’ as the answer to both questions.

For example, pilot participants recorded their initial expectations as ‘stress reduction’. Most highlighted this as the main benefit of the program at completion. Feedback on the mix and length of outcome measures used was also positive.

Both groups were united in opposing the use of the word ‘homework’. Pilot participants highlighted the importance of language. Introducing practices as ‘this is something you can do’ was appreciated while ‘task’ was not.
Concerns that consultees had about young people finding time to practise were confirmed by the MT-exposed group. Consultees had suggested that a once a day meditation prescription was more likely to be followed than one that asked them to sit twice. This was again borne out in the pilot trial (Study 2): on average, participants meditated on five occasions per week. Despite this, a number of participants in the pilot study commented that they would have liked *more* home meditation to be set.

Mindfulness-naïve consultees advised that all aspects of the proposed program should be minimized in length. Pilot participants however, suggested that more in-session meditation practice would be desirable than had been conducted in Live MATE v.2. In response, an opening and an ending meditation has been included in Live MATE v.3 for all program sessions.* Opening and closing meditations are in fact common in more intensive adult MT programs such as Mindfulness Based Stress Reduction (MBSR).262

Both groups suggested that flexibility is important as a way of respecting young people’s desire to exercise authority. This view became more nuanced following MT. The participants recognized that following instructions may at times lead to new experiences or insight: ‘[the facilitator] saying you should stop and practice mindfulness and me not being able to do it made me realize this has just become a habit: me not stopping… Maybe the doctor [patient’s GP] was right. Maybe I don’t stop. Maybe I should.’

Informed by Study 1, MATE v.2 was designed to be especially relevant to young peoples’ day-to-day lives. Sessions focused on an experiential and participatory approach to learning rather than a didactic one. Mindfulness ‘tasks’ were presented in age-appropriate language. Examples relevant to young people were used. Instead of providing a 95 page participants’ handbook, 1-2 page handouts were given weekly (see Appendix C). It was instructive therefore, that Study 2a participants criticized as inadequate, the level and style of connection made with

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* The exception is the beginning of session 1 where introductions, explanation and discussion are first required.
their daily lives. They also indicated that an excessive amount of text had been provided. These findings, among others, reinforce the value of the detailed and iterative qualitative feedback process conducted. It was critical to listen well initially but then to return and listen again to ensure responsiveness to the preferences of young people.

Consultees had suggested asking MT participants to journal their experiences. This happens to be consistent with standard mindfulness teaching practice.\(^{262}\) It was followed, in expanded form, in the pilot program. Firstly, it was recommended that participants keep a personal meditation journal where they could record and reflect on their experiences. Secondly, to obtain progressive feedback about program experience, participants were asked to complete a written ‘log’ before each session began. Information was about the amount and experience of their home practice in the past week was sought.

No participant spoke about journaling at home. Several noted however that weekly logs encouraged formal meditation practice and mindfulness in day-to-day life. Here it appeared that a professional agenda, aimed at data-collection, had subserved part of the benefits that a home journal may have had.

MT-exposed participants appeared thus to endorse some items that professionals may have thought helpful: more home practice; longer duration of guided in-session meditation; and writing about meditation practice.

Obtaining information from both intervention-naïve and completer groups was therefore a productive exercise. In the first study, desirable generic attributes (e.g. minimizing text) were defined. In the second, some were confirmed and some were modified. Additional detailed feedback, only possible from an MT-exposed group, also emerged (e.g. ideal mix of meditation styles taught).

**6.1.3. Focus on online translation**

Having experienced MT, participants no longer saw a modular, online teaching program as a genuine alternative to live training. They instead advocated for a
website that presented a variety of information and teaching material. This was primarily intended as encouragement for young people to take on live training in future rather than use it as an self-contained course.

Online training had been envisaged as best delivered sequentially. This was confirmed by consultees. Ways of unlocking the next allotment of teaching only when the last part had been completed had been suggested in Study 1. Flexibility was seen as trumping the benefits of such an approach by MT-exposed young people: ‘Give people choices and don’t play god... by making them [teaching videos] available week by week.’

A compromise was made with the final web-page design. E-MATE v.3 is structured so that young people can choose either to:

1. Access information and teaching as they preferred; or
2. Take on a structured program. This option has teaching modules accessible only in the order recommended and is modelled on the sequence used in Live MATE.

This approach to design respects young people's desire for maximum choice and flexibility. Meanwhile those, for instance in a remote area, who wish to have as close an experience to live group teaching as possible can still do so. Further, the structured version allows for future research to determine efficacy.

There was general agreement between participants in both studies regarding video presentation: that video is the ideal way to present teaching material; and that a series of short videos is the desirable format. Participants suggested a variety of innovative ways to encourage engagement (e.g. horizontal placement of videos to shorten page length). These technical suggestions are now incorporated into the structured online MT program within the larger website.

Participants in Study 1 noted the importance of an 'authoritative' appearance for the proposed website. This was seen as important to engender trust in potential
participants. Discussion with Study 2 participants further highlighted the relevance of this issue. The author was surprised the level of suspicion about the trustworthiness of online material. Speaking about quotes used on websites to advertise the benefits of health programs, one participant said, ‘a lot of the time they do make it up’. The MATE v.3 website is designed to include logos of Reachout.com and universities involved in program evaluation on each page. Also quotes from past participants are to be excluded to avoid the impression that ‘you’re trying to sell it to people’.

Participants in both Study 1 and 2 strongly emphasized the importance of a professional and interactive ‘look and feel’ for the MATE website. They stated that the following components could be beneficial: personalized, automated feedback based on outcome measure scores; automated reminders to engage in home practice; attractive graphics and animations; and, for the structured online course component, videos automated to appear in order once previous ones had been watched.

Incorporating these suggestions into the prototype www.mateprogram.org would have required significant web development costs and person-power. These were beyond the scope and resources of this project, as detailed in ‘2.1. Rationale’ (page 105). A blueprint for the optimal MATE website has instead been devised. Funding will be sought in future for developing a youth-friendly online service for Reachout.com based on this blueprint and using the intellectual material (e.g. text and video) generated in this project.

Below, characteristics of both the Live MATE v.3 program and the MATE website, including E-MATE v.3 are presented. Inclusion or aspects of some specific elements not discussed above are justified or described in explanatory notes to tables.

6.2. Live MATE v.3

Characteristics of the program are detailed in Table 11. This aims to be a guide only. It shows the overall structure and the content items that are likely to be
most effective for future program facilitators working with young people. It is not designed as a prescriptive approach to teaching meditation.

MT facilitators are required to have a long-standing personal mindfulness practice and considerable teacher training. Facilitators’ presentation of what mindfulness is, how to meditate, and how to apply mindfulness in day-to-day life are thus grounded in their experience.* Conduct of the class is yet another practice of informal meditation for the facilitator. Participants’ comments and difficulties are dealt with as a mindful response to moment to moment happenings in class.262 A program manual written so as to specify responses to comments from participants is therefore inappropriate.12*

* See ‘Mindfulness, meditation and mindfulness training’ (page 54) for further details on standard requirements for facilitators.
* See ‘Incorporating themes relevant to young people: ‘Manualizing’ mindfulness training?’, page 129.
Table 11 Characteristics of the refined face to face Mindful Awareness Training and Education program, Live MATE v.3, based on an integration of the literature, a consultation and pilot trial. Superscript numbers signify explanatory notes.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>6 weekly sessions, 1-1.5 hours in duration</td>
</tr>
<tr>
<td></td>
<td>5-12 participants&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Tea, coffee and snacks provided</td>
</tr>
<tr>
<td></td>
<td>Intake telephone interview&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Materials &amp; Communications</strong></td>
<td>CD’s of meditation instructions of varying types and lengths paralleling in-session practices</td>
</tr>
<tr>
<td></td>
<td>Weekly group email to participants reflecting on the session just held and summarizing key themes and suggested home practice&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Telephone contact with participants who miss a session</td>
</tr>
<tr>
<td><strong>Typical&lt;sup&gt;10&lt;/sup&gt; session plan</strong></td>
<td>1. 5 minute opening meditation: Awareness of the breath&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>2. Brief&lt;sup&gt;5&lt;/sup&gt; discussion of previous week’s home practice</td>
</tr>
<tr>
<td></td>
<td>3. New theme&lt;sup&gt;6&lt;/sup&gt; introduced and discussion encouraged regarding how it relates specifically to young people’s lives early in session</td>
</tr>
<tr>
<td></td>
<td>4. 5-20 minute guided meditation:&lt;sup&gt;8&lt;/sup&gt; Breath, body, sounds, walking (including outdoors), mindful stretching</td>
</tr>
<tr>
<td></td>
<td>5. Discussion of meditation just practised</td>
</tr>
<tr>
<td></td>
<td>6. Flexible formal and informal&lt;sup&gt;9&lt;/sup&gt; meditation suggestions for the week, arrived at collaboratively</td>
</tr>
<tr>
<td></td>
<td>7. 5 minute closing meditation: Awareness of the breath</td>
</tr>
<tr>
<td><strong>Session content notes</strong></td>
<td>Introduction of awareness of sounds as a meditation style in week 2&lt;sup&gt;11&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Overt discussion/reminder, in weeks 1-4, of the possibility of time-limited emotional difficulties related to a new meditation practice</td>
</tr>
<tr>
<td><strong>Home practice</strong></td>
<td>In-session practical exercises&lt;sup&gt;12&lt;/sup&gt; (e.g. dyadic mindful listening practice)&lt;sup&gt;254&lt;/sup&gt; to link mindfulness skills to daily life activities</td>
</tr>
<tr>
<td></td>
<td>Discussed as 'timeout' or formal and informal ‘meditation’&lt;sup&gt;13&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Agreement on basic principles (e.g. taking time to meditate each day) balanced with permission about personalizing practice (e.g. choosing between the expanded range of meditations presented in class)&lt;sup&gt;14&lt;/sup&gt;</td>
</tr>
<tr>
<td>Domain</td>
<td>Characteristics</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Evaluation plan</td>
<td>If a randomized trial is conducted, waitlist rather than no-intervention control group to be used with a waiting period no longer than 3 months</td>
</tr>
<tr>
<td></td>
<td>DERS, MAAS, DASS, WEMWBS appropriate</td>
</tr>
<tr>
<td></td>
<td>Inclusion of weekly home practice experience logs collected at session commencement</td>
</tr>
<tr>
<td></td>
<td>Qualitative evaluation with program completers who volunteer to attend a focus group and/or interviews</td>
</tr>
<tr>
<td>Advertising &amp; recruitment</td>
<td>Personal attendance at educational institutions and public events (e.g. music festivals) where young people are likely to be present</td>
</tr>
<tr>
<td></td>
<td>Business card sized advertisements</td>
</tr>
<tr>
<td></td>
<td>Clear identification of academic association with university and other ‘trusted brands’ such as Reachout.com</td>
</tr>
<tr>
<td></td>
<td>Online presence: Reachout.com and other youth-specific health promotion websites, Facebook, Twitter and the MATE program website</td>
</tr>
</tbody>
</table>

1. This number was chosen to ensure, considering possible attrition, that 4-11 participants are present in each session, as suggested by pilot participants.
2. Commercially offered mindfulness programs often begin with a telephone discussion with the course facilitator. In Live MATE this is to ensure parental consent in the case of participants younger than 18 and also to conduct a preliminary assessment of suitability.
3. Key themes and suggested home practice reinforce the content included in Study 2 handouts (see Appendix C). They are composed week by week for each new program so as to be responsive to the unique discussion content that occurs.
4. Breath awareness meditation is the most commonly taught variety and considered one of the simplest for novice practitioners. Its repetition at the beginning and end of each week allows an opportunity for this particular form of meditation to be emphasized. MT programs commonly begin and end with a brief practice.
5. This was the key content element, in Study 2a, that participants wished was shortened. However, like the practice log, it was also highlighted as encouraging home practice and thus has been retained in brief form.
6. Matching with what was previously termed ‘tasks’ in MATE v.1-2, these are areas of day-to-day life where mindfulness may be applied (e.g. listening to others mindfully; see page 127). In previous versions this was discussed in the latter quarter of the session in setting up home practice. Now, consistent with Study 2a feedback, its introduction has been brought forward and given more time and prominence.
That is, young people are actively engaged in elaborating and generating examples as per feedback in Study 2a.

Expanded beyond awareness of breath, body and sounds and increased in maximum length to respond to pilot participants’ desire for more variety and in-session meditation.

Again the facilitator aims to have young people take the lead as to how the theme introduced earlier may be applied in the following week. This is aimed to create a sense of ownership of the home practice plan.

As noted above, this is not to restrict the facilitators’ responsiveness to participant material. It may be modified depending on what is deemed necessary in each particular session (e.g. no opening mediation in week one; longer meditations in latter program weeks).

Following pilot participants’ feedback this is now earlier than in MATE v.1-2 wherein it was introduced in week 4.

Again in response to pilot participants seeking greater variety.

That is, as opposed to ‘homework’ or ‘tasks’.

This is in anticipation of participants’ possible desire to modify and personalize home practices as they did in the pilot trial.

Based on Study 1 feedback and the pilot trial these scales appear to measure domains that are relevant to young people and responsive to mindfulness practice.

In keeping with pilot participants’ feedback the online environment is not used only as a way to disseminate an online intervention but also to generate interest in face to face program uptake. A list of youth-specific websites suggested by young people has been included on page 152.
6.3. The MATE Website: Bringing together a live and an online course

Feedback from studies 1 and 2 are integrated here to suggest optimal characteristics for a website that includes, but is not limited to, an online edition of Live MATE. In previous versions the site was conceived as a stand-alone Internet-based MT course: E-MATE. Following feedback from pilot trial participants it was expanded to include information about the live program and mindfulness itself. The overall structure of the MATE website is outlined in Table 12. The formal online course as originally envisaged has been refined and presented as E-MATE v.3 in Table 13.
Table 12 Outline of the Mindful Awareness Training and Education website comprising: an overall introduction; general education about mindfulness; and information on Live MATE and E-MATE programs. The self-contained online MT program, E-MATE v.3, is now a part of this larger MATE website, rather than constituting the entire online presence of MATE; E-MATE v.3 is described in detail in Table 13; Superscript numbers signify explanatory notes.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home page</strong>¹</td>
<td>Brief description of mindfulness</td>
</tr>
<tr>
<td></td>
<td>2 minute² video of a young person discussing their experience of practice and its benefits</td>
</tr>
<tr>
<td></td>
<td><em>Links to:</em> information about mindfulness; Live MATE main page; E-MATE online course main page</td>
</tr>
<tr>
<td><strong>Mindfulness information page</strong></td>
<td>5-10 minute video of a mindfulness teacher discussing what mindfulness is</td>
</tr>
<tr>
<td></td>
<td>Downloadable MP3 of 5 minute meditation instructions as example</td>
</tr>
<tr>
<td></td>
<td>Downloadable 2-page PDF describing mindfulness in greater detail and including a ‘further reading’ list</td>
</tr>
<tr>
<td></td>
<td><em>Links to:</em> other authoritative mindfulness information websites³</td>
</tr>
<tr>
<td><strong>Live MATE pages</strong></td>
<td><strong>Main page</strong> Brief description of 6 week live program</td>
</tr>
<tr>
<td></td>
<td>2 minute video of young person discussing their experience of participation</td>
</tr>
<tr>
<td></td>
<td><em>Link to:</em> Course schedule</td>
</tr>
<tr>
<td><strong>Course schedule</strong></td>
<td>Location, times and date details for upcoming face to face courses</td>
</tr>
<tr>
<td></td>
<td><em>Link to:</em> online registration page, activated by selection of a course date</td>
</tr>
<tr>
<td><strong>Online registration</strong></td>
<td>Potential participants enter baseline data (age, gender, occupation) and contact details and are advised that they will be contacted by telephone for an intake interview</td>
</tr>
</tbody>
</table>

¹ Across the introduction.
² Portuguese.
³ A few websites are in Portuguese, French and Spanish.

Table 13: Components of the MATE website

- **Home page**: Brief introduction to mindfulness, followed by a 2-minute video of a young person discussing their experience of practice and its benefits. Links to information about mindfulness, Live MATE main page, and E-MATE online course main page.
- **Mindfulness Information page**: A 5-10 minute video of a mindfulness teacher discussing what mindfulness is, along with downloadable MP3 and PDF resources for further reading.
- **Live MATE pages**: The main page provides a brief description of the 6-week live program, including a 2-minute video. Course schedule page details location, times, and dates for upcoming courses. Online registration allows potential participants to enter baseline data and contact details, and they will be contacted by telephone for an intake interview.
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-MATE pages</strong></td>
<td>Brief description of 6 week online program and option(^5) to view content at leisure</td>
</tr>
<tr>
<td></td>
<td>2 minute video of young person discussing their experience of participation</td>
</tr>
<tr>
<td></td>
<td>Ticking either one of two boxes activates link to: registration page for weekly E-MATE course; or training content page</td>
</tr>
<tr>
<td><strong>Training content</strong></td>
<td>Videos, PDFs and MP3s of the E-MATE program accessible via links on the one page arranged to represent different program weeks and titled with weekly theme</td>
</tr>
<tr>
<td><strong>E-MATE registration</strong></td>
<td>Online registration and consent(^6) to enter 6 week program; Link to: <strong>E-MATE v.3 course</strong> (Table 13)</td>
</tr>
</tbody>
</table>

1. All web pages to include project partners’ insignia: Reachout.com and Melbourne and Monash Universities. A bar at the top of each page to have links to all available key elements. ‘Links to’ items describe links that are highlighted in the body of the particular web page outlined.
2. This is in keeping with common maximum length of online ‘advertising’ videos.
3. For example: au.reachout.com/What-is-mindfulness.
4. Description of E-MATE v.3 appears in Table 13. These pages contain an introduction to the self-contained course that E-MATE comprises. They also make the program content freely available to allow those who do not wish to take on E-MATE as a structured course. This option was suggested by pilot trial participants. Those who wish to access the material as a structured course are directed to the registration page which then allows access to the structured option.
5. The ability to access E-MATE v.3 course material without taking the online course could be turned off when a research trial is being conducted so that all who access this section of the site are asked to do a 6 week course (or to be randomized to a waitlist if an RCT is being conducted).
6. It was considered appropriate to provide information, obtain consent (including from a parent or guardian in the case of those under 18 years) and baseline (e.g. age, gender, occupation) and outcome measure data entirely online for E-MATE. This allows taking advantage of the benefits of an online program in terms of increased privacy for participants and reduced delivery costs. See also ‘2.5. Ethical considerations’, page 122.
## 6.3.1. E-MATE v.3

Table 13 E-MATE: The online, modular MT program for young people provided as an option for those who wish to work through course content in the order recommended. Superscript numbers signify explanatory notes.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure</strong></td>
<td>6 weekly online ‘sessions’</td>
</tr>
<tr>
<td></td>
<td>Each new week’s material becomes available on Sunday</td>
</tr>
<tr>
<td></td>
<td>Progress bar used to encourage ongoing engagement with program</td>
</tr>
<tr>
<td><strong>Materials &amp; Communications</strong></td>
<td>MP3s of meditation instructions of varying types, paralleling ‘in-session’ practices, but with lengths between 5 to 20 minutes</td>
</tr>
<tr>
<td></td>
<td>Weekly automated email to participants to encourage ongoing practice and to briefly remind them of the week’s theme</td>
</tr>
<tr>
<td><strong>Typical ‘session’ plan</strong></td>
<td>5-10 minute streaming video to introduce key theme for the week</td>
</tr>
<tr>
<td></td>
<td>5-10 minute streaming audio/video(^1) guided meditation: breath, body, sound, walking meditation and mindful stretching</td>
</tr>
<tr>
<td></td>
<td>5-10 minute video of group discussion of practice just conducted as well as previous week’s home practice</td>
</tr>
<tr>
<td></td>
<td>5-10 minute closing video: recap of week’s theme; home practices for the coming week; and a brief guided breath awareness meditation</td>
</tr>
<tr>
<td><strong>Session content notes</strong></td>
<td>Introduction of awareness of sounds as a meditation style in week 2</td>
</tr>
<tr>
<td></td>
<td>Overt discussion, in weeks 1-4, of the possibility of time-limited emotional difficulties related to a new meditation practice</td>
</tr>
<tr>
<td><strong>Between sessions</strong></td>
<td>Similar suggestions and language used as in Live MATE regarding formal and informal meditation practice</td>
</tr>
<tr>
<td></td>
<td>Online forum hosted on Reachout.com with access restricted to study participants</td>
</tr>
<tr>
<td></td>
<td>Online facilitator with mindfulness teaching experience to review responses and questions and contribute to the discussion on a daily basis during weekdays</td>
</tr>
<tr>
<td></td>
<td>Weekly live online chat session (e.g. Wed evening 6-7 PM(^2)) available with the facilitator</td>
</tr>
<tr>
<td>Domain</td>
<td>Characteristics</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Evaluation plan</strong></td>
<td>Similar evaluation structure to Live MATE but with baseline questionnaire and quantitative measures presented online and links to log home practice and qualitative feedback provided also</td>
</tr>
<tr>
<td></td>
<td>Progress bar used during completion of outcome measures to facilitate engagement</td>
</tr>
<tr>
<td></td>
<td>Program completers asked to volunteer to either partake in telephone/Skype/online chat (remote participants) or face-to-face interviews and/or focus group regarding program experience</td>
</tr>
<tr>
<td><strong>Advertising &amp; recruitment</strong></td>
<td>As in Live MATE v.3</td>
</tr>
</tbody>
</table>

1. All participants in the pilot trial saw this as an appropriate way to present in-session meditation vis-à-vis a video. Demonstrations of walking meditation and stretches, however, may be presented via video-recordings.
2. Suggested in Study 1 as a time when young people were likely to be available.
Chapter 7 Discussion

This project represents the most rigorous process to date, as known to the author, of design and refinement of a mindfulness training program for young people. An initial consultation with mindfulness-naïve participants indicated that MT was likely to be feasible in Australian young people, both as a face to face and online intervention. The consultation guided the design of delivery and evaluation strategies. A pilot face to face trial demonstrated the feasibility and acceptability of the resulting program using a mixed methods evaluation including interviews and a focus group. The evaluation informed further refinements and development of the final Mindful Awareness Training and Education program, MATE v.3. This program may now be used in further research, including studies of its effectiveness in service delivery in various settings.

There is a dearth of literature on how mindfulness is understood or applied in this age group. This is the first time that the experience of a group of young people without a specific clinical or other problem has been subjected to detailed qualitative evaluation. The resulting explanatory model is the first of its kind, to the author’s knowledge, to be reported in a study with participants younger than 18.

A summary of results for Studies 1, 2a and 2b is presented at the end of each relevant chapter. Participant characteristics and recruitment process will now be discussed as a background to interpretation of the results. The various streams of data are then integrated to provide a clearer understanding of each. Findings are then placed in context of the literature in MHP and mindfulness. The chapter ends with a discussion of the contributions of the project to mindfulness pedagogy, limitations and strengths of the studies it comprised and future directions.
7.1. Study participants

7.1.1. Characteristics

The aim in this project was to develop MT as an MHP program from which any young person could benefit. Nonetheless, a program advertised as improving well-being or reducing stress can be expected to attract a disproportionate number of participants who suffer some degree of pre-existing distress.\textsuperscript{463} This would appear to be the situation in this study.

A history of mental illness, which is a crude indication of possible distress, was reported by a higher proportion of consultees in Study 1 (50\%) than the participants in Study 2 (27\%). Both figures are higher than recently reported one-year prevalence rates for any mental illness in the 16-24 year age group of 24\%.\textsuperscript{141} In Studies 1 and 2 participants were asked to report a diagnosis any time in the past, which may account for part of the difference. The recruitment method used between the two studies may explain the difference between them in terms of participant profile. Study 1 was advertised exclusively on Reachout.com\textsuperscript{*} a site likely to be visited by those with mental health difficulties. Study 2 was advertised more widely and thus a wider variety of young people were exposed.

Below, scores on rating scales used in the pilot trial are compared with published norms from population samples that most closely resemble study participants:

- \textit{Emotion regulation}: On the DERS a mean score of 78 (out of maximum of 180, SD=21) in 260 women and of 81 (SD=19) in 97 men was found by Gratz and Roemer (2004)\textsuperscript{288} Participants were American undergraduate psychology students aged 18-55. This study represents by far the largest non-clinical sample for which DERS scores are available. Undergraduate psychology students are unlikely to be representative of the population at large.\textsuperscript{464}

\textsuperscript{*} Described in ‘2.2. Collaboration with the Inspire Foundation: Reachout.com’ on page 107.
Nonetheless, this is the closest estimate of the likely mean for the adult population available. Study 2 participants’ mean of 84 (SD=26) was slightly higher. This is consistent with poorer emotion regulation in young people as has been found in previous studies.¹³

- **Depression, anxiety and stress symptoms**: In a large recent study of an Australian, non-clinical, young adult sample (n=102, age range 18-24) the DASS-21 mean score was 23 (out of a maximum of 126, SD=23).⁴⁶⁵ Normative data, from an Australian sample, for adolescents (n=484, age 11-15) is similar to the young adult samples studied (mean=24, SD=24).⁴⁵⁶ Study 2 participants’ scores (mean=37, SD=21) indicate a considerably higher level of distress than both young adult and adolescent populations. This finding supports the hypothesis that a ‘distressed healthy’ sample are most likely to be attracted to ‘stress reduction’.

- **Mental well-being**: The WEMWBS has been incorporated in the Scottish National Health Survey since 2008. The results from this survey represent the largest general population sample in which the scale has been used. The mean score for the Scottish population, aged 16-24, measured in 2010 was 51 (out of a maximum of 70, SD=8).⁴⁶⁶ Although participants in Study 2 suffered more symptoms of distress than population averages, they reported levels of well-being that were very similar to population norms (m=50, SD=10). This finding is consistent with previous research wherein well-being and symptoms of illness appear to be on related but separate continua.⁵⁹-⁶¹

- **Mindfulness**: Brown and Ryan (2003)¹⁰⁷ studied a non-clinical sample of 313 meditation-naïve American college students aged 18-23, generating the largest available normative data set. A MAAS total mean score of 56 (out of a maximum of 90, SD=19) was calculated from reported data.¹⁰⁷ Participants in Study 2 (mean=55, SD=18) were similar in their level of baseline mindfulness.

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*Consistent with the recommendation in the scale manual⁴⁰³ scores for DASS-21 are reported as raw scores multiplied by two to be comparable to the DASS-42.*
It appears that study participants were a ‘distressed healthy’ group of young people. In the one quantitative study by Broderick and Metz (2009) of ‘healthy’ young people identified in the review, the mean baseline score on the DERS was 88.4 (SD=18.3). Scales to assess well-being, depression and anxiety symptoms and mindfulness specifically were not included by the authors. The PANAS was used and higher baseline scores reported than population norms (positive affect mean: 26.1 vs. 31.7; negative affect mean: 20.7 vs. 17.0 – latter figures are norms from Crawford et al. (2009)). Similar to the present study the group who received MT in this study appeared to be a distressed subgroup of the normal population.

A trend towards improvement (not statistically significant) occurred in mean scores on all outcome measures over the study period. This is consistent with the view that MT can enhance positive mental health as well as reduce symptoms. Changes may be expected more commonly on measures of mental ill-health since scores were most different from population norms, and thus had the most room to improve. This was not observed in Study 2. Overall however, no confident inference may be made considering the pilot trial design of the quantitative aspect of this project.*

7.1.2. Challenges in participant recruitment

It was relatively easy to recruit for the consultation study (Study 1: see page 138) but quite difficult to do so for the pilot trial (Study 2: see page 157). At first glance this is surprising as in the first study participants were not offered an intervention.

It is a truism in research with any population that ‘it will often take longer than planned to recruit the desired number of participants’. There is extensive empirical evidence of this phenomenon in young people, particularly where psychological interventions are concerned. Common examples of other

* See page 87 for a detailed description of the study by Broderick and Metz (2009).
• See also ‘7.2.1. The contribution of qualitative and quantitative data’, page 223.
groups that are particularly difficult to recruit from are: males; the elderly; the socioeconomically disadvantaged; members of cultural minorities; substance users; those who suffer multiple medical conditions; and same-sex attracted individuals.

The sole avenue for advertising in Study 1 and in the first recruitment round in Study 2 was Reachout.com. While allowing access to a larger number of potential participants, Internet advertising often results in low response rates. Sensitivity to gender and cultural diversity has been cited as ways of improving recruitment via this medium.

Reachout.com is credited with best practice in attracting males and ethnically diverse visitors. This may be due in part to the participatory approach to website design, which also means visitors are accustomed to being consulted and take pride in influencing future programs. More than 20 responses were received to the advertisement for Study 1. Though adequate for the consultation phase of this project it indicates a low response rate considering the very large number of visitors to this site.

In Study 2, after three rounds of advertising which included Reachout.com only five eventual participants were recruited via this route. Young people may have been sensitive to the timing of advertising and recruitment. This has been cited previously as affecting recruitment rates. Both unsuccessful phases occurred towards the end of the year. Annual holidays may have been a factor. In addition, in Australia, the end of the academic year is October to November. Many young people are in full- or part-time study and have examinations at this time. Some respondents nominated being overloaded with exam preparation as to why they were not eager to participate. This is consistent with previous research on the effect of annual examination cycles in this age group.

The cinema voucher offered in Study 1 may have attracted consultees. There is extensive previous evidence that incentives, especially of monetary value boost recruitment. However, gifts can bias the sample. They were considered
inappropriate in Study 2 where a six week commitment was required. Effective MT of any duration requires a great degree of personal motivation (e.g. for home meditation practice). Participants had to have a genuine interest in improving mental health, rather than be seeking a reward, for a successful trial of MATE.

Other possible reasons for the challenges faced in attracting participants may be that:

- Young people found it easier to commit to having a one-off interview than a program that required weekly attendance. Qualitative data in both Studies 1 and 2 indicated that having to attend a specific location at a regular time was a drawback of a live program.
- ‘Meditation’ or ‘reduction of stress’ are not very attractive concepts for many young people. Participants in Study 1 urged caution regarding use of such words. However in the interests of ethical full disclosure, they were included when advertising for the pilot trial. While some resistance to adult-driven stress management training is consistent with contemporary youth culture, meditation is increasingly seen as attractive by young people.
- Young people not drawn from a clinical population may be less motivated towards improving their mental health than those experiencing specific symptoms or disability. Once enrolled in the program however, motivation to continue did not appear to be a problem for the majority of participants. The dropout rate was favourable when compared with previous psychological intervention studies (see 4.3. Summary of Study 2a, page 181).

The implications of the difficulties in recruitment are discussed further in ‘7.5. Limitations and strengths’, ‘7.6. Future directions’ and ‘Chapter 8 Conclusions’.

7.2. Triangulation: How several streams of data led to a clearer picture

The project aim was to gain a detailed and nuanced understanding of how mindfulness and an MT program may be experienced by young people.
Sequential and simultaneous methodological triangulation\(^{355}\) was achieved by combining: quantitative measures; consultation with mindfulness-naïve young people; written and online program feedback; focus group discussion; and in-depth interviews. With three exceptions\(^{331, 340, 352}\) qualitative studies in MT have not involved quantitative evaluation. In no research reports has a systematic attempt been made to relate changes on specific outcome measure items to qualitative data.

In Chapter 6, the process whereby qualitative data from participants naïve to MT and those who had taken MATE v.2 was integrated with the literature on effective MT has been described. This allowed a balanced final version to be developed, MATE v.3. Below, a critique of quantitative and qualitative findings is followed by a synthesis of different streams.*

### 7.2.1. The contribution of qualitative and quantitative data

Qualitative data about the benefits of MT and the feasibility and acceptability of the program were strongly positive. The qualitative findings from Study 2 were highly informative about participants’ understanding and application of mindfulness and may be seen as relatively robust for the following reasons:

In-depth examination of participant experience can be successfully conducted with small sample sizes.\(^{484}\) Even single case studies are common, including the only study available of the mindful experience in non-clinical persons less than 18 years.\(^{354}\) Variety in data sources and formats increase reliability of findings in qualitative research.\(^{485}\) In Study 2, findings were drawn from a very large volume of data. They were collected in eight separate rounds through four distinct methods –

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* As a preface to the discussion below it is important to recall the following. In this pilot study quantitative measurement was undertaken to establish suitability and acceptability of the evaluation strategy. The sample size was small and a control group was not included. In the interests of brevity ‘improvements’, ‘changes’ and ‘effects’ are used while in fact random variation or scale artefacts cannot be excluded as the underlying cause.
interview, focus group, written and online. Interviews and the focus group were conducted soon after program completion.

Trends to improvement were found on mean scores for all outcome measures. There are a number of possible explanations for the latter finding besides MT having a causal influence on changes observed. The small, uncontrolled pilot design of the quantitative arm of the trial disallows refutation of the possibilities listed below:

**Non-specific group effects:** The opportunity to reflect with supportive listeners can lead to improvements in symptoms of distress. This has been demonstrated in research on 'befriending' programs.\(^{486}\) It is likely to account for at least some of the reported benefits in psychological interventions in general and has been suggested in previous research in MT in particular (see page 244). A number of participants in Study 2 remarked on this issue, for instance saying, 'a lot of the benefit is in being there with other people'.

Group process may have specific benefits in relation to MT.\(^{487}\) The mindful experience is paradoxical and uncertainties are common in practice.\(^{276}\) Hearing about others’ struggles and ways of phrasing their understanding may directly expand one's own learning.\(^{487}\) Consistent with previous research in young people,\(^{488}\) participants expressed a preference for a non-authoritarian teaching style. This is the approach taken in facilitating MT groups\(^{262}\) Its application in MATE v.2 meant that instead of 'being told what you should do', participants were able to 'learn a lot better from discussion'.

**Regression to the mean:** Values highly deviant from population averages are likely to be closer to the normative mean on subsequent measurements.\(^{489}\) Random variation accounts for this effect. This explanation may be relevant to scores on the DASS. Participants in the
pilot trial did not differ to a sizeable degree from population norms in other measures used.

**Maturational change:** Emotion regulation and executive functioning, which underpin many of the constructs tested in this study, are known to improve as part of normal development in this age group. Theoretical literature suggests the same may be true of mindfulness. However, such an effect is unlikely to be relevant during the short duration of Study 2. Additionally, most of the quantitative gains in a majority of participants occurred during the six weeks of the MT program rather than extend over the full 12 weeks of the study.

Overall, while both qualitative and quantitative findings warrant cautious optimism about the benefits of MT, the former category has greater validity in this project.

### 7.2.2. Potential mechanisms of change in scale scores

The caveats regarding quantitative findings notwithstanding, comparison with qualitative results may illustrate possible mechanisms underlying changes in outcome measures. How participants’ own words related to various domains of quantitative assessment was previously presented (see page 198). Here, that comparison is integrated with previous literature.

The construct of emotion regulation is close to mindfulness and a positive relationship has been shown in both adults and younger persons. Several possible mechanisms of change in DERS scores as a result of mindfulness practice are suggested by the data in this project. Participants were able to use the enhanced ability to observe emotions and to distinguish between thoughts and feelings to gain better emotional awareness. This included earlier awareness, and an ability to let go of, destructive reactions to emotions. In particular, non-acceptance or self-judgment regarding emotions were better

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* The relationship is discussed in detail in 'Mindfulness training may improve emotional functioning', page 64.
deal with. The lack of mental clarity that strong emotions can generate was reduced allowing better ability to make decisions and take required actions. In addition, specific mindfulness practices, such as awareness of the breath, broadened the range of options available to participants in dealing with strong emotions.

Depressive symptoms, as measured by the DASS appear to have been reduced: with the use of specific mindfulness practices; and through lowered self-judgment and a resulting possible improvement in self-worth. The bidirectional positive relationship between self-worth and depressive symptoms is well-established, particularly in young people. Furthermore, greater engagement with life appeared to have resulted from present-moment awareness. A bidirectional inverse relationship has been demonstrated between a sense of engagement and depressed mood. Reduction of anxiety is one of the most commonly demonstrated effect of MT, including in young people. The participants’ ability to not be caught up in negative rumination and their access to specific mindfulness practices appears to have underlay the lowering of anxiety symptoms as measured by the DASS.

Reduction of stress, particularly in non-clinical samples and in young people is a common aim of MT. Here, the ability to let go of unhelpful emotional reactions and a resulting clarity of mind, were combined with greater confidence to lead to lowered perceived stress as measured by the DASS. Greater confidence is likely to have also contributed to better perceived well-being as measured by the WEMWBS. Two other factors highlighted by participants have been shown to enhance well-being: a better relationships with others; and more accurate self-knowledge.

7.2.3. The effect of meditation duration on the experience of mindfulness training

Participants in the pilot trial did not differ greatly in frequency of meditation. They differed however in how long they meditated at each sitting. They were divided into two groups based on whether they meditated for less or more than
five minutes (the recommended amount). Participants in the former group: (1) scored higher on the DASS at baseline; and (2) reported less aggregate improvement in all measures following the program.

It is possible that more initial distress meant participants were less likely to practise meditation. In the study by Chadwick et al. (2011) engagement with formal mindfulness practice was reduced when patients with bipolar disorder were in a low mood. In the present study ‘<5 minute’ participants, who also scored higher on the DASS, were less engaged in formal meditation. However, they reported similar enthusiasm about informal practice in qualitative interviews. They both also described a sophisticated understanding of mindfulness and described a number of ways in which they were applying mindfulness to day-to-day life. These findings are consistent with those from study by Chadwick et al. (2011) which suggest that receptivity to different styles of meditation is affected by mood state. The correlations in Study 2 may, however be spurious: In contrast to their self-rated measures, the two participants who were interviewed did not in fact express greater distress during interview.

Concerning the effect of longer meditation duration, a number of previous MT studies have shown no relationship between home practice and benefits. Theoretical literature indicates that understanding of mindfulness also does not have a linear relationship with practice amount.

Any difference in findings associated with longer meditation practice may be explained by a number of possible factors besides benefits of meditation itself. Two participants from each of the groups who meditated for shorter and longer durations were interviewed which shed some light on the validity of these candidate explanations:

* See also ‘7.4.2. Home practice: Balancing authority and flexibility’, page 242.
• **Does more initial distress render mindfulness practice less effective?**

Patients with higher baseline symptoms of depression and anxiety often show greater improvement as a result of mindfulness training. Both participants in the ‘<5 minute’ group reported a variety of benefits due to mindfulness practice.

• **Did those who meditate as suggested have more positive expectations of the program?**

The relationship between expectations, motivation and an enhanced placebo effect is well established. However, this hypothesis is not supported by the data in this study. Participants from both groups reported similar hopes and expectations of improvement at commencement.

• **Was conformity itself causal?**

Conformity to perceived or actual group or clinician expectations has been shown to contribute to the placebo effect. Five minutes was the suggested initial amount of meditation practice in MATE. During the program the facilitator was blind to written participant logs regarding meditation practice duration and frequency. He did not specifically ask participants whether or for how long they had practised at home. It is nonetheless possible that he responded more positively to those who discussed their meditation experience in greater detail.

• **Were those who did not meditate as long not open to mindfulness as an idea?**

Much of what is termed ‘the placebo effect’ may lie in the meaning that participants attach to an intervention. It is possible that those who meditated for longer periods saw a mindful stance as a more worthwhile tendency to cultivate. However, there was no clear difference in the two groups’ understanding and eagerness to apply mindfulness as noted above.
Overall, considering the small sample size, and lack of differentiation seen in qualitative data from participants who meditated for different durations, no clear conclusion can be made about the effects of longer meditation duration. There are several possible mechanisms of relationship between duration and benefits of meditation that deserve further examination in a future trial. A very large sample size would be required to allow meaningful statistical analysis. This is so since, as in this project, the conflict in previous evidence suggests that effects, if present, are likely to be small or otherwise hard to measure and influenced by a great variety of confounding variables.

7.2.4. The influence of prior mental illness history on the experience of mindfulness training

Greater change was observed in the mean DASS score for the subgroup of participants with a previous history of depression. In a meta-analysis of MT studies in medical, psychiatric and non-clinical participants, higher effect sizes on measures of depression and anxiety were found for those who had a primary diagnosis of either disorder (Cohen's $d=0.95$ and 0.97 respectively vs. 0.59-0.63). This effect could be explained in part by participants having lower baseline scores and thus having more room to improve. In Study 2, however, scales scores on the DASS were similar at baseline for those who had and had not previously been diagnosed with depression, which makes this explanation unlikely to be applicable.

Another possible reason for the difference in scale score improvement is that those who have suffered depression may continue to have a maladaptive cognitive-emotional style even when in remission. A minor experience of low mood may set off a cascade of thoughts and behaviours that create further dysphoria. The vicious circle thus set up may precipitate a relapse of depression. A key aim in MBCT (see page 57) is to help patients recognize and disrupt this pattern.
Hypothetically, as a result of MT, previously depressed participants in this project may have developed a more adaptive relationship to emotional experience than was usual for them. This could have led to greater improvements in mood and anxiety symptoms. If this were the case, such an effect would have been less likely in other participants who presumably did not have a maladaptive cognitive-emotional style at study commencement. This hypothesis is not supported by the findings in this study: One of the three participants with a history of depression participated in an in-depth interview. No obvious difference could be discerned between her cognitive-emotional style and those of other interviewees (see page 179).

Again considering the caveats discussed regarding quantitative data, it is likely that the apparent influence from a history of mental illness is a spurious finding.

7.3. Relating findings to literature on mental health promotion and mindfulness training in young people

7.3.1. Youth mental health promotion

Findings in this project confirm that young people see positive mental health as an important target for improvement above and beyond the alleviation of symptoms. Participants identified well-being as a relevant domain of evaluation and spoke at length about ways in which mindfulness training had led to greater well-being. Findings also support the use of MT as an MHP modality targeting all young people, regardless of clinical status, since similar benefits and understanding can occur in a non-clinical group. Within a relatively short time in the trial of MATE v.2 participants seemed able to move beyond superficial regulatory benefits of mindfulness and gain greater competence in managing ongoing challenges.
Mindfulness training as a form of health promotion for young people

As in the only other qualitative study of MT in participants with a matching age group,\textsuperscript{351}/\textsuperscript{352} the most common sources of stress reported by participants in this project were academic/occupational and social. Reminiscent of Freud’s ‘to love and to work’ as ‘what a normal person should be able to do well’,\textsuperscript{504} this is not unique to young people. Concerns about physical health take increasing precedence over those about occupational stress with advancing age.\textsuperscript{505}

While similar overarching domains may be relevant to the design of interventions in different age groups, particular aspects, such as those stipulated by the CASEL,\textsuperscript{27} should be emphasized in younger persons. Participant feedback illustrated how these criteria are fulfilled by MT. This parallels previous MT research as referenced separately for each criterion:

- **Awareness of oneself and others with particular reference to the ability to regulate emotions:**\textsuperscript{308} A ‘conscious control over life and my emotions’ could occur as mindfulness practice helped ‘sort out what my mind thinks I’m feeling and how I’m actually feeling and then relate the two together.’

- **Decision making capacity:**\textsuperscript{309} Mindfulness ‘allows you to make decisions or to tackle situations umm… with a yeah, best mindset that you possibly can tackle them with.’ ‘You know like you can make the best conscious choice that you can make. That you know of course you’re making less mistakes because you’re considering things more deeply.’

- **Positive attitudes and values which are pro-social:**\textsuperscript{310} ‘I think having more consideration for others leads to having a better relationship with others, as well as looking after yourself.’ Mindfulness ‘definitely helps you to tie yourself to all the people around you who are there with you in the present.’

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\* Note that qualitative data from the Baltimore study of HIV-infected/disadvantaged youth has been reported in two publications Kerrigan et al. (2011) and Sibinga et al. (2011). The two citations relevant to this study are separated by a forward slash (‘/’) in the discussion below.

\* See ‘Key targets in health promotion for young people’, page 38.
• Social interaction skills:311 'I've found that rather than me going out to confront them outright I've let it just pass by rather than creating confrontation or that kind of struggle where all our friends are divided over the issue.'

A participatory approach to program design

Development of programs that are responsive to young people's needs and are rigorously evaluated are critical to successful and sustainable MHP in this population.7 Both consultees and pilot participants were enthusiastic about contributing to future program design. The literature on participatory research with this population has identified the importance of a sense of meaning.209 'Young people want to help in studies', as participants in this study confirmed, while emphasizing that the rationale should be clearly explained at the outset. In this way they could indeed feel that they were ‘doing something that has a bigger purpose and therefore that “I believe in”’.209p.50

Using the Internet as a setting for mental health promotion

Consultees and trial participants in studies 1 and 2 supported the idea of an online edition of the program: ‘the net's where we spend all our time anyway'. This finding is consistent with the importance placed on an online presence for modern MHP programs,179,180 particularly in young people.182 A number of participants noted how it may be preferred, even for city-dwelling young people, to take the program online. This echoes previous findings of a preference for the internet as a source of health information for young people.184

Results from this project may be seen as further justification for the expanding effort to bring MT to young people as a form of MHP.329,365,366 Positive feedback from participants was paralleled by a relatively low dropout rate. The findings also demonstrated the feasibility and strengths of a participatory approach to

* See ‘4.3. Summary of Study 2a’ (page 181) for a discussion of dropout vis-à-vis previous psychological intervention studies in general and those of MT in particular.
program design and evaluation and lend weight to the argument that taking advantage of new technologies is likely to be fruitful.

### 7.3.2. Qualitative studies in mindfulness training

Study 2 reports the first qualitative research, known to the author, with participants of any age in a formal group MT program not suffering from a specific clinical disorder or social disadvantage. Only two other studies have examined experiences of non-clinical participants. Dellbridge and Lubbe (2009)\(^{354}\) analysed data from an unreported number of MT and data collection sessions with one adolescent participant. In the study by Sears et al. (2011)\(^{348}\) of adult college students, MT was incorporated in psychology classes and did not form a stand-alone group program. Both studies used non-standard qualitative methodology. In particular, Sears et al. (2011),\(^{348}\) relied on written answers to two specific questions as the sole source of data. This may have disallowed authentic participant experience to be elicited in adequate depth. Dellbridge and Lubbe (2009)\(^{354}\) derived a priori themes from theoretical literature rather than allow themes to emerge from the data.

In two adult studies\(^{335,336}\) explanatory models have been developed in clinical patient groups (see Table 2, page 69). No studies in younger persons or those of any age without a specific disorder have conducted a similar process to date. In the study by Mason and Hargreaves (2001),\(^{336}\) self-understanding and the way mindfulness came to be applied in daily life were emphasized in previously depressed patients. In contrast, in patients with cancer the over-arching experience was conceived of as personal growth by Mackenzie et al. (2007).\(^{335}\) This included self-understanding but also had spirituality as a central component.\(^{335}\)

The model developed in Study 2b overlaps with both previous models in relation to self-understanding. An ‘in-depth consideration’ concerned especially ‘getting a sense of who you are’. Of note is that the model as a whole is much closer to that of Mason and Hargreaves (2001).\(^{336}\) Confidence, competence and a sense of control were ways of ‘bringing that [mindfulness] into your everyday life’, for
instance. Participants nominated practical ways in which they applied mindfulness to deal with everyday situations: ‘Whenever I’m in a situation, say in school when I’m getting nervous about something then I can breathe and kind of practice all the things that were taught during the program and yeah, definitely does help.’ This proximity is perhaps not surprising. Participants in the oncology setting studied by Mackenzie et al. (2007) were older (43-77) and facing life-threatening illness. Those in the Mason and Hargreaves (2001) study were closer in age (24-59) to pilot participants, three of whom also had had a previous history of depression.

Themes common to previous qualitative studies in MT have been discussed in detail above (page 79). In various ways Study 2 participants touched on all previously identified themes. However some were clearly more important to their experience than others. Agency, awareness, effects on experience itself and perspective were strongly represented in participant data whereas non-judgmental acceptance was not emphasized. However, the latter may be seen as a subtext. Mindful awareness, as discussed by participants, was necessarily non-judgmental. Some examples of overlap between data in this project and previously identified themes appear below:

- **Present-moment awareness of experience:** ‘I consider mindfulness as observing myself so that would be observing my body and how it’s feeling um… and also observing my mind and how it’s feeling and then making a link between the two.’
- **Effects on experience itself:** ‘you can apply it [mindfulness] to any situation’
- **Perspective:** ‘being apart from the worry: like there was you and there was the worry’
- **Acceptance:** ‘[mindfulness is] about acknowledging how you’re feeling’
- **Agency:** ‘conscious control over life and my emotions’
- **Work:** ‘really difficult to find time that it’s really quite [sic] and I don’t have anything to do’
• Importance of being in a group:334,335,338,342,344 ‘It helped to be presented with other experiences and views and be able to pick and choose which one really resonated with you.’

The only study of MT in a similar age group (13-19) available for direct comparison involved HIV-infected youth in Baltimore with social disadvantage.351/352 Commonalities in the experience of mindfulness with Study 2b were: calmness and reduced stress; an ability to apply mindfulness to deal with emotionally difficult situations in daily life; improved social relationships and academic/occupational function; and difficulty establishing a regular formal meditation practice. Participants in Study 2 highlighted in detail aspects of improved cognitive function. An improved relationship to physical health was highlighted in the Baltimore study which is not surprising considering participants were HIV-infected.351/352

As in the Baltimore study,351/352 pilot participants were eager to use meditation flexibly: ‘I can be given the tools but ultimately this needs to fit into my lifestyle.’ Again similarly, a number of participants reported benefiting greatly from mindfulness practice even though they did not take up formal daily meditation practice. It is notable that the difficulty or reluctance to take up daily practice occurred in the non-clinical sample in this project also.

Characteristics of participants’ emotional lives before engagement with MT were presented in one study of young people351/352 and one adult study.336 Consistent with the findings in this study, key stressors, or forms of ‘drama’,351p.98 identified by young people related to schoolwork and relationships. Unhelpful ways of dealing with these difficulties were to ‘tune out’351 p.98 from stress or to express hostility. This was again consistent with ‘shutting them [unwanted emotions] out’, ‘overreacting’ or being ‘socially destructive’ noted by participants in Study 2b. Living in ‘total denial’336p.201 is a similar theme expressed by adults.

The shift from viewing mindfulness as a ‘stress management technique’ to a ‘mindset’ correlates with the findings in the study by Dellbridge and Lubbe
The participant in that study reported, in the latter part of MT: ‘I know now that it’s a way of life.’ Similarly, Mason et al. (2001) found that participants began with relaxation and the learning of skills but then became focused on integrating mindfulness into day-to-day life. Only one study highlighted an initial period of emotional difficulties associated with a new meditation practice. This was similar to that reported by participants in the 3rd and 4th week in the MATE v.2 trial.

Greater confidence as an explicit result of MT was a theme in only one study, which was conducted in children. However, the increased sense of agency noted above is associated with, if not describing a similar attribute as, increased confidence. In the Coholic (2011) study the program had been devised specifically to cater for children with poor self-esteem. This may have influenced the presence, derivation or wording of the theme ‘confidence’.

This project involved a unique group: young people without current specific clinical or psychosocial difficulties and who were recruited from the general community rather than drawn from clinical or well-fare services. More commonality than may have been expected was observed in reported understanding and benefits of mindfulness practice vis-à-vis: (1) adults; and (2) those with clinical or other specific difficulties. Adults may be considered likely to have a different or more sophisticated understanding of mindfulness owing to greater cognitive development and life experience. This was not borne out in the present study where young people in fact had a very sophisticated understanding of mindfulness. Those suffering greater illness-related or psychosocial distress may be more motivated to apply mindfulness in daily life. In this study it appeared that having a specific difficulty is not necessary for generating the motivation to engage with mindfulness practice. The key difference with clinical groups appeared to be in how mindfulness was applied. Rather than bringing mindfulness to the relationship with chronic pain for

* The theoretical context for this assertion is presented in ‘7.3.3. Theoretical literature in mindfulness’, page 237.
instance, participants spoke of taking advantage of a clearer mind to make better decisions.

### 7.3.3. Theoretical literature in mindfulness

Fundamental to mindfulness philosophy is that at an underlying level the experience of ‘suffering’ is the same no matter its trigger. That is, whether one has hurt one’s foot or heard bad news, there is a similar sense of ‘unsatisfactoriness’ experienced beyond the unavoidable, immediate pain. The way to relieve this unsatisfactoriness is again the same, no matter what the trigger. An adult with chronic pain may learn to let go of unnecessary mental reactions: ‘Why me?... This is not fair!’ An adolescent grounded when her sibling is allowed to go out may, with practice, be able to interrupt a spiralling sense of umbrage. In this way she avoids adding unnecessary anger to a fear of boredom. The great degree of overlap between different qualitative studies of MT supports this philosophical position.

Some descriptions by participants in this project appear close to those found in the theoretical literature on mindfulness. For instance, ‘You are aware of the change that is happening within yourself... You’re changing all the time. All the time and you change in the present.’ This quote appears to suggest that the participant has understood at least one aspect of the concept of ‘impermanence’. This is central to what mindfulness is supposed to help practitioners grasp, particularly in its elaboration in Buddhist philosophy.

> ‘Mindfulness encourages awareness and acceptance of thoughts, feelings, and bodily sensations as they arise, and recognition of their impermanence.’\(^{510} p.263\)

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* The Pali word ‘dukkha’ is most commonly translated as ‘suffering’. It may be better understood as an ‘unsatisfactoriness’ that derives from, in the main, craving and aversion towards desired and undesirable experiences. Two articles by Teasdale and Chaskalson (2011a, 2011b)\(^{506,507}\) discuss dukkha and its alleviation by mindfulness practice in detail with reference to recent psychological research.
When participants’ words appear ‘too good to be true’,\textsuperscript{441p.229} researchers are well-advised to be suspicious. Were participants simply repeating descriptions they had heard from the program facilitator or previously encountered in the media?

The data appears to suggest that participants’ understanding was in fact quite nuanced. Their sophisticated discussion of what it is like to be mindful reflects the subtleties of the mindfulness experience in theoretical literature. It also indicates that responses were unlikely to be simply repetitions of what they had heard. These sequences illustrate this point:

- ‘distance myself just slightly [from unpleasant emotions]’
  Here a participant had begun speaking about mindfulness allowing her to be ‘detached’ but corrected herself to provide this more subtle description.

  That a mindful state entails a disowning, disavowal or discarding of emotions is a common myth. It is a misunderstanding that often beleaguerers early meditators. As participants in MATE v.2 appeared to understand, the aim in mindfulness practice is to cultivate a meta-awareness of emotions.\textsuperscript{507} One does not shun unpleasant emotions but gains the ability to experience and observe them at the same time.

- ‘not controlling [emotions] but being aware of them and then dealing with them’
  This participant recognized that though she had just spoken of ‘conscious control’, she actually intended a more delicate meaning.

Another common misconception of mindfulness practice is that emotions are to be actively stopped, fought or brought under some forcible control in meditation. Freud, for instance, refers to an ‘annihilation of the instincts, as taught by the wisdom of the East’\textsuperscript{511p.73} in \textit{Civilization and Its Discontents} (first published in 1930).
Mindfulness involves being aware of and accepting whatever happens to be occurring in the present moment, rather than attempting to force experience to take a desired course. At times, during formal meditation or in the practice of mindfulness in day-to-day life, what may occupy centre stage in the field of awareness may be very negative or distressing emotions. Mindfully ‘dealing with them’ may mean choosing to work with the emotion by paying direct attention to it. Observing how it may change or how it is manifested in the body are common approaches. Alternatively one can simply note the unpleasant emotion for what it is: an ephemeral phenomenon, in some ways both a part of, and apart from, the self. It may then be allowed to recede into the background as one brings one’s attention back to a chosen object such as the breath. Gentle perseverance, rather than harsh effort is employed.

- ‘[mindfulness was not] selfish and self-indulgent’ or ‘egocentric’

Mindfulness was ‘a way to look into yourself’. Here the participant points to the paradox of self-awareness without self-centredness peculiar to a mindful understanding of the self.

As with many forms of spiritual practice, meditation has been criticized as ‘narcissistic navel-gazing’. Participants stated that the reverse is true. It ‘helps you to tie yourself to all the people around you who are there with you in the present’ and be ‘a part of the world’. Mindful self-awareness is different to thinking about oneself. It often leads to a greater and a more compassionate openness towards others and their concerns.

A related concept in mindfulness, particularly in Buddhist philosophy, is that of ‘non-self’. This is a diminution of the attachment to a separate and all-important sense of self that occurs with extended mindfulness practice.

* The Pali word ‘anatta’ is sometimes also translated as ‘not-self’. This latter form may be closer to the intended meaning: that experienced phenomena (e.g. the tactile sense of the body or the ‘sense’ of one’s thoughts and emotions) are not a sufficient definition of the self, but share the self’s own impermanent nature.
Participants in this study were at a relatively early stage in their mindfulness practice. As such, it is unlikely that their referring to it as not ‘selfish’ was pointing to ‘non-self’ in the above sense.

7.3.4. Quantitative and online studies of mindfulness training

Previous studies in MT with adults and clinical samples of young people have reported improvements in scores on rating scales used in this study (e.g. statistically significant changes in the DASS, WEMWBS, DERS, and MAAS). Only one previous quantitative study of young people without a clinical disorder is available. Significant findings in that study were small to medium effect sizes of improvements in the DERS and the PANAS. Quantitative results from the present study were not statistically significant, owing to the small sample sizes consistent with the pilot and qualitative nature of the research. The between group effect sizes derived were in the medium range between the pre and post-program time points ($d=0.34-0.72$) and the small to medium range between intake and follow-up ($d=0.28-0.59$). These effect sizes compare favourably with findings in meta-analyses of MT (all which have been performed in adults) of changes in scales of mental illness symptoms in clinical populations ($d=0.26-0.95$) but are somewhat lower than in the one meta-analysis of measures of stress in non-clinical populations ($d=1.4$) (as detailed on pages 82-84).

This is the first time that such a suite of tools has been employed with a non-clinical sample of young people. The choice of measures was informed by input from young people. The suitability of the measures was confirmed by participants in the pilot trial. Taken together with the trends observed in scores, these observations suggest the likely suitability of these measures for a future large scale trial of MT with a non-clinical sample of young people.

This project is the first that examines online MT for young people. It is the first study in any age group to have examined potential recipients’ views regarding optimal online delivery of MT. Taken together with previous adult trials, this project suggests that online MT is likely to be acceptable to and feasible in young...
people. The program blueprint developed using a participatory approach is likely to be a useful platform for future professional website development for the purposes of service delivery and trial of efficacy.

7.4. A contribution to mindfulness pedagogy

7.4.1. Managing initial difficulties

With continuing mindfulness practice and within a relatively short time, study participants appeared able to progress beyond initial benefits in terms of calm and balance. Clarity of mind and an enhanced ability to meet challenges were then reported. However, negative experiences with meditation were reported in weeks three and four by three participants.

Development of awareness often precedes shifts in attitude associated with mindfulness.\textsuperscript{252} Participants may have felt initially unsettled by what they observed as they became more aware of internal states. As attitudes such as acceptance and non-judgment are gained to some degree in later weeks of the program, calm returns to the internal world.\textsuperscript{252}

‘Occasionally a person can find that, like turning on a light, the greater awareness generated by meditation can initially make certain thoughts, memories and fears that may be lying just below conscious awareness more obvious and disturbing. Some of these thoughts can be quite strong - one needs some courage and patience. It is best to proceed gently and never to force oneself or someone else to proceed unwillingly if such worrying thoughts arise. It is important to remind ourselves to see the thoughts as they are: images and feelings based on past experience rising and falling on the surface of awareness. In this way a person learns self-control by staying with the awareness rather than being reactive to what they are aware of, much like learning to watch the movie while remembering that it is just a movie.’\textsuperscript{252,p.45-46}
This phenomenon has important implications for how MT is conducted face to face or online. Firstly, it may be helpful for facilitators to highlight the following: the risk of an increase in distress; that this may be seeing what ‘may be lying just below conscious awareness’, rather than a new problem caused by meditation; and that for most participants initial distress is temporary.

Secondly, this finding supports recommendations in teaching and research literature that MT programs be conducted over at least six weeks. This can allow participants to receive support during initial difficulties, and have the opportunity, within the program, to move beyond these. Participants are then more likely to adequately understand and benefit from MT and be motivated to continue practice in the long-term.

Furthermore, it is important that facilitators have some understanding of the difference between mental distress and emerging mental illness. This is consistent with the background stipulated by the UMass CFM as necessary for teachers of mindfulness (see page 59). A plan should also be in place to manage at risk mental states should they occur, as instantiated in the ‘2.5. Ethical considerations’ for this project (see page 123).

7.4.2. Home practice: Balancing authority and flexibility

There is no consensus in the literature about the ideal length of home meditation practice. Consistent with the trend in Study 2a, a number of studies including studies with adolescents have found a positive correlation between the amount of home meditation practice and benefits of MT. Others have not.

In MBSR, participants are asked to meditate for 45-60 minutes per day. Its founder has suggested that this is intended to ensure that participants do at least some minimum amount of meditation each day (Kabat-Zinn, J., 2009, personal communication). Indeed on average MBSR participants report having practised at home between 20-25 minutes a day.
Study 1 consultees advised that 5 minutes twice a day was a reasonable initial expectation. They were comfortable with the suggested increase to 20 minutes a day in later weeks of the program. This correlated with previous literature based on mindfulness teaching experience with young people.\textsuperscript{409} A number of participants in Study 2 suggested that more home practice should have been set. However, all reported difficulties with finding time to practise. The maximum average duration reported by any participant was 12 minutes per day. Taken together it appears that the relatively short practice times suggested in the MATE program are appropriate for young people.

The key lesson about home practice from Study 2 was the importance of accepting participants’ desire for flexibility. When training young people, it is commonly found that they wish to take charge of how they apply the skills they are being taught.\textsuperscript{483} Young people are known to respond poorly to an overly authoritarian or prescriptive communication style. This is perhaps because their perception of a power imbalance with adults is exacerbated.\textsuperscript{488} Participants’ appreciation of the permissive style of facilitation used is therefore developmentally expected.

It is standard practice at the beginning of MBSR and MBCT programs, to say to participants, in relation to home meditation practice, ‘You don’t have to like it, you just have to do it.’\textsuperscript{517,318} This message is to be given gently to young people. It is after all important to expect some regular home practice even if there is flexibility regarding its length. As one participant commented, making a commitment to do meditation practice as suggested in the program led to unexpected insight (see page 170).

How the facilitator communicates ‘expectations’ for practice is a sophisticated process.\textsuperscript{262} Balancing an emphasis on the importance of practice with acceptance of participants’ personal style and degree of engagement is a core skill for MT facilitators.\textsuperscript{262} Teaching mindfulness is itself a form of mindfulness practice for the facilitator.\textsuperscript{29} She presents home practice as highly desirable rather than harshly demanded. This parallels meditation practice itself. Rather than force
attention in a coercive way, a firm yet gentle intention that it remain with the breath is cultivated. Learning that a participant has not been meditating may lead to negative emotions or a judgmental impulse in facilitators. Their own mindfulness, in the teaching moment, is critical to working with such feelings.

Findings in this study suggest that the facilitator’s skill in balancing expectation and permission are particularly important when working with young people. As one participant put it, not ‘being told what to do but being told this is something you can do made it work’.

7.4.3. Maintaining interest: Variety in practice

Participants’ preference for a wider variety of meditation techniques than in MATE v.2 is consistent with previous teaching literature, particularly in young people. Variety is cited as helpful in sustaining engagement. Walking and movement meditation practices form a standard part of both MBSR and MBCT. These may be particularly suitable for young people, who typically respond better to active rather than sitting or lying meditation practice. A wider range of practices allows more choice in home practice and is respectful of young peoples’ desire for autonomy and flexibility.

Consultees in Study 1 preferred a minimal approach to content. Thus in MATE v.2 only three practices were taught: awareness of breath, body and sounds. It appears that the decision to err on the side of simplicity was misguided. Walking and mindful stretching practice have therefore been added to MATE v.3.

7.4.4. Participant sophistication: An asset to be managed

A greater ratio of explanatory to experiential learning than used in adult MT has been recommended for younger persons. Their ability to parse subtle aspects of MT may rightly embolden a facilitator to elaborate on mindfulness philosophy. However, it is important to guard against MT becoming a cognitive or intellectual exercise. Mindfulness can only be truly grasped experientially. In the same

* Italics indicate emphasis by participant.
way that one cannot learn how to ride a bicycle through study, mindfulness can only be understood through meditation practice.\textsuperscript{518}

‘...mindfulness is not to be fully comprehended by discursive, theoretical, or intellectual thinking but primarily relies on practical introspective practices...’\textsuperscript{278p.405}

Although some degree of reflection can be helpful, it may distract from the core elements of practice. For instance, a meditator may be practising awareness of the breath. She may be caught up in thoughts about how this may be helpful or why is this the best form of meditation or even about the breath itself. She can easily forget that the task at hand is to fully experience the physical sensations of the breath rather than think about breath meditation. In meditation practice insight and understanding arise spontaneously, not as a result of intellectual analysis.\textsuperscript{498}

An MT facilitator has an important role in helping participants tolerate cognitive uncertainty. Just enough explanation is provided to guide and motivate persistence with meditation practice. Genuine learning occurs through the practice itself.\textsuperscript{254}

7.4.5. Group education: Supporting cohesion and providing choice

The benefits of learning mindfulness as a group, rather than individually, are well established for a variety of populations.\textsuperscript{487} This was strongly endorsed by pilot trial participants. Besides factors specific to MT, this may be related to the importance of peer relationships and group acceptance at this age.\textsuperscript{519} The participants’ emphasis on group ‘safety’ and ‘trust’ and preference to learn from discussion rather than ‘being told’ is consistent with this developmental explanation.

It is important to distinguish an MT facilitator’s role as educational rather than as a group therapist.\textsuperscript{262} However, some similar group dynamics may need to be managed as in group therapy. For example, fostering cohesion, so as to increase
‘safety’ and ‘trust’ in initial stages of group development is a necessary part of facilitating MT. The preparation of participants at recruitment is critical. Informing them about likely group size and content may enhance cohesion. Modelling an open and non-judgmental attitude towards what participants say is also helpful. Such attitudinal attributes in the facilitator, while productive in any group setting, are central to the practice of mindfulness itself. The importance of the facilitator’s own extensive prior mindfulness practice is thus again highlighted.

Participants found being in a group of strangers difficult at first. Later in the process they were observed that being in a familiar group may have limited their willingness to be open about personal experiences. This finding is relevant to any form of training where discussion of emotional experience is necessary. A number of experienced teachers have found that when spouses or professional or family groups are taught together the quality of training experience for individual members may be reduced (Goddard, T. and Kenny, M. (2010); Khong, B. (2011); Burchall, J. (2011), personal communications). Unlike group therapy, the process is not based on analysis of member relationships. Bringing conflicts and complexities of prior relationships can distract from the principal aim of education in mindfulness (Goddard, T. (2011); Khong, B. (2011), personal communications).

‘Social and emotional learning’ modules are increasingly incorporated within school curricula. Introduction of MT as a form of school-based SEL has begun in earnest and demonstrated some early successes. The findings above suggest a cautious approach. Careful attention to how group familiarity and dynamics may affect participants’ engagement is important. Providing the choice to young people of non-school based programs may help capture those who would not be comfortable in attending with their classmates.

7.5. Limitations and strengths

The intention in this project was to develop an intervention with detailed input from young people and to explore their understanding of mindfulness.
Demonstrating feasibility and acceptability rather than efficacy or effectiveness of MATE was prioritized. With this in mind, limitations and strengths of each of the studies undertaken are discussed.

### 7.5.1. Study 1

Smaller sample sizes in qualitative than in quantitative research are generally appropriate. Since suggestions became repetitive after the ninth interview, indicating data saturation, the sample size of 13 is likely to have been adequate. It is possible that the MATE v.1 draft presented to interviewees restricted the range of suggestions that occurred to them or that they saw as relevant. While this could have contributed to an appearance of early data saturation, this is unlikely as the author was careful to conduct interviews in an open style.

The study may have been improved by sending a summary of results to participants following the first round of interviews. A second round could have then led to gaps being identified or new ideas to have emerged. This would have required additional time and resources which were instead devoted to developing Study 2.

Tools for recording telephone conversations were not available. Requiring consent for recording of conversations may have discouraged some potential participants. The author took notes during the interviews. This could have led to data loss and inaccuracies in this study, but is regarded as unavoidable. The author has 14 years of experience in interviewing and taking notes in clinical settings which may have reduced data loss.

Independent coding was used to ensure validity of derived categories. The three lengthiest interviews were used. It is common practice to double code only a limited portion of data and proceed further if significant disagreement between coders exists. In this study little divergence occurred between coders and thus double coding all data was deemed unnecessary.
Participants were recruited via Reachout.com meaning they were not representative of the general youth population. They had a higher than population average rate of prior mental disorder. They were clearly interested in accessing mental health information online and also in contributing to program development. A broader recruitment strategy (e.g. using Facebook) may have reached a more representative sample. However, the feedback provided by Reachout.com visitors may be more relevant to the ‘distressed healthy’ subgroup of the population who were likely to be attracted to the MATE program.

7.5.2. Study 2

Difficulties in recruitment in the pilot trial bear on the interpretation of findings regarding feasibility of MT in young people.* In both Studies 1 and 2 participants were enthusiastic about MT and felt that it was relevant to young people. They were, however, likely to be biased in its favour since they had responded to study advertisements. In part, this project aimed to prepare the ground for future large-scale trials of MT. It is clear, based on the results, that future trials need to give early consideration to assessing the likely success of chosen recruitment strategies.

Quantitative evaluation of the pilot trial was limited by the small sample size, the absence of a control group and follow-up being limited to six weeks. These limitations disallowed inferences regarding the efficacy of MT. It was not possible to separate the influence of the personal characteristics of an experienced mindfulness teacher and non-specific factors such as group support, from mindfulness-specific attributes of the program. Sustainability of perceived benefits and ongoing engagement with mindfulness practice in the long-term also could not be determined quantitatively. The strongly positive qualitative findings suggest future studies designed to allow such measurement is likely to be worthwhile.

* See also a description of the difficulties in recruitment on page 157 and a discussion with reference to the literature on page 220.
In choosing outcome measures a compromise was reached between exhaustiveness and the need for brief scales that can be completed in a short time. Possible moderators of outcomes such as personality and self-efficacy were not measured, nor were detailed functional assessments undertaken. Future trials on a larger scale may include some of these variables. However, participant feedback in this project suggests that only the most committed participants would carefully complete a larger number of measures.

An effort was made to conduct a rigorous qualitative assessment in Study 2 through: collecting a large volume of data; using a variety of qualitative data collection methods; an extended time course of data collection; the proximity of data collection period to the program; and a grounded theory approach to data collection and analysis.

Some degree of researcher subjectivity is unavoidable in qualitative analysis of the type undertaken in Study 2b. The extensive pre-existing personal and professional engagement of the author with mindfulness may have been a source of bias in interview and focus group facilitation and data analysis. Qualitative analysis advice and independent review of thematic analysis as provided by Dr Belinda Khong may be biased for the same reason. These biases may have been counteracted to some degree by the independent coding and review provided by Dr Norrish and Professor Herrman, who do not have an extensive background in mindfulness practice.

Study 2 was designed with several components of different types to draw on the advantages of data triangulation. This methodological strategy also brings some potential limitations. Participating in in-depth interviews and reconnecting with other participants within a focus group can influence scores on outcome measures and the understanding of mindfulness itself. Due to the small sample size and absence of a control group, it was not possible to statistically account for the occurrence of such effects. Obversely, completing outcome measures, particularly regarding mindfulness, may have influenced the qualitative data obtained in interviews. Participants may consciously or unconsciously use words
or ideas about emotions or mindfulness, for instance, that they may have gleaned from questionnaires. The sophisticated understanding that participants showed during interviews makes this less likely.

The qualitative data provided by participants who completed the pilot program could be biased by self-selection. That is, perhaps only those who gained benefits from practice chose to provide feedback. Also, those who felt that had understood mindfulness practice better may again have been more eager to participate in qualitative enquiry. However, since five out of eight program completers volunteered for interviews the data is unlikely to have been strongly biased for this reason. In addition, those who did not attend interviews provided positive feedback in their written reports at follow-up and at the end of the course and their comments were consistent with the themes derived in qualitative analysis.

Nonetheless, the fact that three participants left the program before completion indicates that mindfulness training, in the form offered, was not received as favourably as Study 2b data may suggest. It is important to keep this in mind in interpreting the results of this project.

7.6. Future directions

The further development of MT for young people as an MHP service delivery exercise and a vehicle for ongoing research can be encouraged. The young people in this project took their engagement in both designing the MT program and participating in it seriously. A live MT program is now available as a result of this project which appears acceptable to and feasible for use in young people. The program could be facilitated in youth-focused community settings, health care or academic institutions and schools. Considering difficulties in recruitment encountered in this project a market research phase in the particular setting to be targeted is a desirable first step.

Professional audiovisual and information technology input will be needed to develop the text and video content generated in this project for online display.
Following development of a professional, high quality MATE website, online trial may be conducted. The first step would be a pilot trial of E-MATE v.3, the self-contained MT course component of the website. Qualitative evaluation would allow fine tuning the site and expand the knowledge gained regarding optimal online translation in the current project.

With rigorously designed live and online MT programs available, the next step in research is a randomized single blind controlled trial of each. As suggested by feedback in this project, use of either a ‘placebo’ condition, an active control group or a waitlist would be preferable to a non-intervention condition. The waitlist group should be made to wait for no longer than three months to avoid high dropout.

Group conversation about difficulties young people are facing or education about mental illness may be a suitable ‘placebo’. ‘Placebo’ psychological interventions cannot be genuinely inactive. Some benefits may occur through feeling supported by the group, for instance. Nonetheless, such a control group can allow for measurement of benefits of MT beyond non-specific group effects.

Active control conditions could include relaxation training or cognitive behavioural strategies aimed at reducing the emotional impact of irrational negative thoughts. Using such control conditions could allow, given a large enough sample, delineating how much of the benefits of MT can be accounted for by its calming or cognitive effects.

A head to head Live MATE vs. E-MATE RCT is a possible next step. This would be most relevant after the efficacy of each intervention has first been established in a ‘placebo’ trial, however. In this way two effective interventions would be compared. Establishing that one is more effective than the other is of limited value before knowing whether either is superior to placebo. A three-arm study with a control condition is an alternative approach. However this would likely require an extremely large sample size to detect statistically significant differences between groups.
In this project the relationship between qualitative and quantitative findings was explored. The full breadth of the subtle yet emotionally significant, far-reaching and possibly long-term effects of MT that young people described in interviews may be difficult to demonstrate quantitatively. Ultimately a much larger study would be required to quantitatively explore the great variety of domains of experience suggested by qualitative findings.

A large-scale RCT could also allow investigation of the following: impact on long-term social and occupational function; neurophysiological and neuroimaging changes, as demonstrated in adult MT\textsuperscript{238} comparison with other evidence-based youth-friendly interventions (e.g. CBT-based SEL or positive psychology interventions); influence of gender, age and experience level of facilitator; relative efficacy of MT delivered entirely online versus using online resources as an adjunct to live MT; and cost-effectiveness in relation to such outcomes as lost days at work/study or work/academic productivity.

Trials would ideally be conducted across a variety of settings as well as cultures. Studies could include ethnically diverse groups within Australia or be conducted as multi-national trials. Innovative approaches such as delivering the program, or some components thereof, via a smartphone application present further opportunities for research. A dynamic approach, whereby participant feedback was sought with a view to ongoing improvement of MT, was demonstrated to be successful in this project. It may be a helpful blueprint for the design of future trials of mindfulness training.
Chapter 8 Conclusions

This project represents the most rigorous example to date, of the design of a mindfulness training (MT) program as a mental health promotion (MHP) strategy in young people, aged 15-24 years. It was designed in direct consultation with young people to ensure that it was optimally relevant and attractive to them. Characteristics were defined for face to face and online delivery. Previously reported MT for young people had involved either trials of established adult programs or used programs entirely designed by mindfulness teachers. This project showed that prior consultation with mindfulness-naïve young people and detailed qualitative enquiry with those who had undertaken the MT program could lead to new, useful knowledge regarding design. The findings provide a basis for further study of MT in young people as an MHP strategy. The aims of the project were addressed as follows:

*Devise a mindfulness training program in consultation with young people*

A review of the theoretical, intervention and teaching literature was supplemented with expert consultation. This informed the design of the first version of the Mindful Awareness Training and Education program in live and online editions. MATE v.1 was presented to consultees in Study 1 as a mindfulness-based health promotion intervention intended for the use of their peers. The young people in this study, naïve to MT, were enthusiastic about contributing to program design. Their contributions were rich in breadth and detail. They had a major impact on the structure, content and the approach to recruitment and evaluation of MATE v.2. This work is also described in the peer-reviewed publication included in Appendix E.
Conduct a preliminary evaluation to test program feasibility and acceptability, obtain feedback, and gain insights into the mindful experience in young people

Study 2 demonstrated that the live edition of MATE v.2 was acceptable to young people and could be delivered using a group weekly format. Participants’ positive feedback was paralleled by their high degree of engagement with the program. Qualitative data allowed further refinement of program structure and content. Trends to improvement up to six weeks after the program on measures of emotion regulation, well-being, mindfulness and depression, anxiety and stress symptoms were found.

Participants were able to understand and apply mindfulness in a sophisticated way, consistent with descriptions in current theoretical literature. Analysis of their experience identified three key phases: (1) In daily life, before MT, young people often suffer emotional tumult and tend to react impulsively to these emotions in ways that exacerbate emotional or social difficulties; (2) They initially engage with mindfulness as a way to achieve a sense of calm or balance. They thus come to feel less subject to their emotions and develop more ability than previously to self-regulate; and (3) With ongoing practice, they discover that mindfulness is ‘a mindset, not just a stress-management technique’: a mindset that allows greater understanding of themselves and others. They reported that this, along with a clearer mind, could foster a sense of confidence and competence in relation to future challenges. As a result, ‘there is less stress to identify and handle’.

Recruitment was difficult in this study even though, once engaged in the program, participants reported finding MATE attractive and beneficial. Cautious optimism is warranted regarding the benefits of MATE while uncertainties remain as to its likely uptake by young people. This will need to be assessed carefully as future research and development are
planned. Findings regarding young people's understanding and application of mindfulness have been accepted for publication in a peer-reviewed journal and are included in Appendix E. The program development aspects of the trial has been submitted as a separate article and is under peer review.

*Integrate findings to create a refined version of the program in live and online editions*

The face to face MATE v.3 and the design blueprint and intellectual content for a MATE website were devised as an end product of the project.

Previous qualitative studies of group MT in young people have been conducted with participants living with clinical disorders or the experience of significant psychosocial disadvantage. A minority of the participants in this project, drawn from the community, had suffered mental illness in the past consistent with the natural prevalence of mental illness. Nonetheless, this project represents the first investigation in a group of currently healthy youth not recruited because of a particular clinical or psychosocial status. It is the first time that an explanatory and integrative model of the experience of mindfulness in persons under 18 years of any health status has been derived. This is also the first study concerning online delivery of MT for young people.

The findings indicate that having the life experience and cognitive development of an adult is not necessary for a sophisticated understanding of mindfulness. Also, they suggest that, once enrolled in MT, young people do not have to suffer clinical or other specific difficulties to be motivated to engage with meditation practice and benefit from applying mindfulness in daily life. Attracting young people to enrol in live MT can be challenging. Online delivery appears to be a feasible alternative.
8.1. Implications

MATE v.3 is now available as: (1) a live program ready for delivery and large-scale evaluation; and (2) online content and design specifications to guide IT professionals in developing a robust Internet platform. The online platform, inclusive of E-MATE v.3 – a self-contained six week course – is an easily accessible adjunct or alternative to the face to face edition. It can be accessed freely by a large number of people. Even very small health benefits in each person, either directly or through facilitating entry to face to face MT, may amount to an appreciable gain in site users as a group.

Reachout.com, a partner in this project, is one context in which this material may be embedded. The future vision of the hosting organization, the Inspire Foundation, is to expand beyond a focus on those who may be mentally ill or severely distressed. The Foundation is eager to include material that any young person can use proactively to enhance well-being. Findings in this project demonstrate that inclusion of MT would be highly consistent with this approach.

Additionally, this project has made a potentially valuable contribution to those:

- **Designing mental health promotion programs**: The findings indicate the value of a participatory, mixed methods approach to program development and evaluation. Advertising, recruitment and engagement strategies that are most appealing to young people need particular attention for each project or local site. Program planners thus need to assess the local situation and consult or partner with local experts and potential participants early in the design process.

- **Evaluating mindfulness training**: As confirmed through the qualitative enquiry in this project, the experience of mindfulness is complex, nuanced and far-reaching in its impact. These findings are consistent with and extend the theoretical rationale elaborated in the literature for methodological triangulation in MT research.
• **Teaching mindfulness to young people:** Based on the results in this project, careful attention to the setting is warranted when planning and conducting live programs. The current expansion of MT programs in schools may risk alienating some young people. In a group with familiar peers they may be uncomfortable with the open expression of feelings that successful MT relies on. The findings also indicate that the availability of training online, as an adjunct to live MT and as a stand-alone program, is attractive to young people.

• **Developing online interventions for young people:** Participants emphasized that recruitment, engagement and potential efficacy of the intervention will depend critically on a high quality, professional ‘look and feel’ for the website. A site designed simply and with minimum financial and person-power resources may be useful for highly motivated adults. It is unlikely however, to appeal to young people, who spend a considerable amount of time online interacting with a great variety of attractive and interactive media formats.

Previous participatory research aimed at understanding how mindfulness training may be offered to young people and whether it is likely to be useful to them was not available when this project was planned. The findings can now be used to justify, establish and research MT programs that are relevant and attractive to young people in a variety of settings. The experience in this project suggests that the structure and content of future programs are best devised with input from young people at all stages of development. The approach to advertising and evaluation may also be enriched in this way. The full potential of MT to improve mental health in young people suggested in this project will be defined by future large scale trials.
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Appendix A: Self-rated outcome measures considered for inclusion

More details have been provided for scales that were considered most relevant in this project. For example, scales that had a very large number of items are described in brief only. These were unlikely to be appropriate as the entire outcome measurement was intended to take less than 15 minutes, as guided by consultee feedback. Some scales below have been published after the project was planned and ethics application obtained. Scales specifically developed for adolescents (age 12-17) were considered inappropriate for this project as young adults were also included (age 18-24). Instead, adult scales that have also been previously used in adolescents have been included. The rationale for selection of scales and those eventually chosen are described in ‘Domains of assessment and choice of measures’, page 119. In the table below ‘robust evidence’ refers to where psychometric properties have been investigated in a number of studies and/or in a number of different populations. ‘Limited evidence’ refers to where the scale is relatively new but acceptable psychometric properties have been reported in the initial papers presenting the scale.

**Emotion regulation**

<table>
<thead>
<tr>
<th>Measure name</th>
<th>No. of items</th>
<th>Cost</th>
<th>Validity &amp; reliability</th>
<th>Reference</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulties in Emotion Regulation Scale</td>
<td>36</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Gratz and Roemer (2004)288</td>
<td>Assesses: lack of acceptance of emotions; inability to engage in goal-directed behaviour when distressed; impulse control difficulties; limited access to strategies for effective regulation; lack of awareness of emotions; and lack of clarity of emotions; 5-point Likert scale; Described in detail on page 119;</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
<td>Cost</td>
<td>Validity &amp; reliability</td>
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<tr>
<td>Cognitive Emotion Regulation Strategies</td>
<td>32</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Garnefski et al. (2001)(^{522})</td>
<td>Assesses strategies to regulate emotions following a negative event. For example, ‘I think that I have to accept that this has happened’; self-blame, rumination &amp; catastrophizing subscales positively associated &amp; positive re-appraisal negatively associated with depression/anxiety symptoms; 5-point Likert scale</td>
</tr>
<tr>
<td>Cognitive Style Questionnaire</td>
<td>24</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Haeffel et al. (2008)(^{523})</td>
<td>Assesses inferential style esp. tendency to attribute negative events to global causes; specifically tests cognitive vulnerability to developing depressions; adolescent version available(^{524})</td>
</tr>
<tr>
<td>Penn State Worry Questionnaire</td>
<td>16</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Meyer et al. (1990)(^{295})</td>
<td>Assesses clinically significant or pathological aspects of worry; 5-point Likert scale; children’s version available(^{525})</td>
</tr>
</tbody>
</table>

**Mindfulness**

*NB only the last four scales listed have been used in adolescents. All are listed considering mindfulness was a construct central to this project and its measurement is a matter of debate (see page 60). The last two scales were not available during project planning in 2009.*

<table>
<thead>
<tr>
<th>Measure name</th>
<th>No. of items</th>
<th>Cost</th>
<th>Validity &amp; reliability</th>
<th>Reference</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>Southampton Mindfulness Questionnaire</td>
<td>16</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Chadwick et al. (2008)(^{298})</td>
<td>Focused on thoughts and feelings only; items begin with, ‘Usually, when I have distressing thoughts or images’ and continue with responses such as ‘I am able just to notice them without reacting’ and ‘I am able to accept the experience’; 7-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
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<tr>
<td>Toronto Mindfulness Scale.</td>
<td>10</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Lau et al. (2006)</td>
<td>Focused on ability to be aware of experience with curiosity and acceptance; e.g. 'I remained open to whatever thoughts and feelings I was experiencing' or 'I found myself observing unpleasant feelings without getting drawn into them'; 5-point Likert scale</td>
</tr>
<tr>
<td>Five Facet Mindfulness Questionnaire</td>
<td>39</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Baer et al. (2006)</td>
<td>Has 5 subscales: observing inner experience, describing experience, acting with awareness, non-judging of experience, and non-reactivity to inner experience; derived based on MAAS, CAMS, KIMS and SMQ aiming to provide a balanced coverage of mindfulness concepts; 5-point Likert scale</td>
</tr>
<tr>
<td>Freiburg Mindfulness Inventory</td>
<td>30</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Walach et al. (2006)</td>
<td>Focused on non-judgmental present-moment awareness and openness to negative experience; designed for use with experienced meditators; e.g. 'I watch my feelings without becoming lost in them' and 'I am open to the experience of the present moment'; 4 point Likert scale</td>
</tr>
<tr>
<td>Kentucky Inventory of Mindfulness Skills</td>
<td>39</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Baer et al. (2004)</td>
<td>Designed to test 4 aspects based on the dialectical behaviour therapy concept of mindfulness: 'I notice when my moods begin to change' (observe), 'I'm good at finding words to describe my feelings' (describe), 'When I do things, my mind wanders off and I'm easily distracted' (act with awareness), and 'I tell myself that I shouldn't be feeling the way I'm feeling' (accept without judgment); 5-point Likert scale</td>
</tr>
<tr>
<td>Effects of Meditation Scale</td>
<td>137</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Reavley et al. (2009)</td>
<td>Two sections: experiences during meditation and during everyday life; developed and validated in experienced meditators; focuses on a broad range of possible benefits beyond increasing mindfulness e.g. wisdom, insight and compassion; 6-point Likert scale</td>
</tr>
<tr>
<td>Cognitive Affective Mindfulness Scale</td>
<td>12 items</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Feldman et al. (2007)</td>
<td>Specifically tests awareness, attitude and non-judgment aspects of the mindfulness construct in relation to thoughts and feelings: 'I try to notice my thoughts without judging them,' 'It is easy for me to concentrate on what I am doing,' or 'I am able to accept the thoughts and feelings I have'; 4 point Likert scale</td>
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<td>Measure name</td>
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<tr>
<td>Mindful Attention Awareness Scale</td>
<td>15 items</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Brown &amp; Ryan (2003)(^{107})</td>
<td>Most commonly used scale in mindfulness research; inverse correlation with depression; limited coverage of mindfulness construct: focused on attention to present moment e.g. ‘I find myself doing things without paying attention’, or ‘I break or spill things because of carelessness, not paying attention, or thinking of something else’; 6-point Likert scale; described in detail on page 119</td>
</tr>
<tr>
<td>Mindful Attention Awareness Scale – Adolescent</td>
<td>14</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Brown et al. (2011)(^{529})</td>
<td>Recently developed adolescent (12-18) version of MAAS above</td>
</tr>
<tr>
<td>Child and Adolescent Mindfulness Measure</td>
<td>10</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Greco et al. (2011)(^{284})</td>
<td>Based on ACT construct and developed specifically for 12-18 year olds</td>
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**Well-being**

<table>
<thead>
<tr>
<th>Measure name</th>
<th>No. of items</th>
<th>Cost</th>
<th>Validity &amp; reliability</th>
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<tbody>
<tr>
<td>WHO Quality of Life scale</td>
<td>100 or 26</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>WHOQOL group (1998)(^{17})</td>
<td>Assesses wide variety of inner (e.g. sense of meaning, energy) and outer (e.g. physical environment factors such as access to amenities) domains over the past two weeks; can be divided into physical and psychological subscales; also available in a 26-item version (WHO QoL BREF); 5-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
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<td>Validity &amp; reliability</td>
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<tr>
<td>WHO Well-being Scale</td>
<td>5</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Heun et al. (1999)</td>
<td>Assesses personal view of attributes such as cheerfulness, energy, calmness over the past two weeks; 6-point Likert scale with high ceiling</td>
</tr>
<tr>
<td>Centre for Disease Control Health Related Quality of Life</td>
<td>14</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Hennessy et al. (1994)</td>
<td>Low ceiling scale focused on ill health; an example of items is the number of days in a month that an individual has poor mental health (stress, depression etc.); 5-point Likert scale covering the past month</td>
</tr>
<tr>
<td>Satisfaction with Life Scale</td>
<td>5</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Pavot &amp; Diener (1993)</td>
<td>Items refer to longer-term life overview e.g. 'If I could live my life over, I would change almost nothing'</td>
</tr>
<tr>
<td>Temporal Satisfaction with Life Scale</td>
<td>15</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Pavot et al. (1998)</td>
<td>A version of the SWLS above which distinguishes past, present and future life satisfaction; 7-point Likert scale;</td>
</tr>
<tr>
<td>Personal Well-being Index</td>
<td>8</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Internat’nal Well-being Group (2001)</td>
<td>Used in the Australian Unity Well-being Survey; satisfaction with following domains tested on 11-point Likert scale: standard of living, health, achieving in life, relationships, safety, community-connectedness, future security, and spirituality/religion; school children's version available with 7 items (excludes spirituality/religion)</td>
</tr>
<tr>
<td>Psychological well-being scale</td>
<td>84 or 54</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Ryff &amp; Keyes (1995)</td>
<td>Assesses autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance; available in briefer 54 and 18 item version; shortest version not statistically reliable; 6-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
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<tr>
<td>Mental Health Continuum - Short Form</td>
<td>14</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Keyes (2002)⁴</td>
<td>A composite of constructs of emotional (positive affect and satisfaction with life), subjective (social acceptance, social actualization, social contribution, social coherence and social integration) and psychological (autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance) well-being; has very high ceiling; all items begin with 'In the past [chosen time frame], how often did you feel ...' e.g. 'happy', 'That you had warm and trusting relationships with others' etc. 6-point Likert scale</td>
</tr>
<tr>
<td>Warwick-Edinburgh Mental Well-Being Scale</td>
<td>14</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Tennant et al. (2007)⁹³</td>
<td>Assesses positive affect (feelings of optimism, cheerfulness and relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self acceptance, personal development, mastery and autonomy); 5-point Likert scale; described in detail on 119</td>
</tr>
<tr>
<td>Sense of Coherence Scale</td>
<td>29</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Antonovsky (1993)⁵²</td>
<td>Assesses confidence that: (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable i.e. comprehensibility (11 items e.g. 'Do you have very mixed-up feelings and ideas?'), (2) resources are available to one to meet the demands posed by these stimuli i.e. manageability (10 items, e.g. 'Do you have the feeling that you're being treated unfairly?'), and (3) these demands are challenges worthy of investment and engagement i.e. meaningfulness (8 items, e.g. 'How often do you have the feeling that there's little meaning in the things you do in your daily life?'); 5-point Likert scale</td>
</tr>
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</table>
## Symptoms of high prevalence mental disorders

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<tr>
<th>Measure name</th>
<th>No. of items</th>
<th>Cost</th>
<th>Validity &amp; reliability</th>
<th>Reference</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>Kessler-10</strong></td>
<td>10</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Kessler et al. (2003)⁵³³</td>
<td>Developed as a screening tool; most precision around 90⁰⁻⁻⁹⁹⁻⁻ percentile of population; compares well with severity rating scales; measures psychological distress by questions about depression and anxiety over the past 4 weeks</td>
</tr>
<tr>
<td><strong>Medical Outcomes Study Short Form-36</strong></td>
<td>36</td>
<td>Ann. fee</td>
<td>Robust evidence</td>
<td>Ware &amp; Sherbourne (1992)⁵³⁴</td>
<td>Assess 8 domains: (1) physical functioning, (2) role limitations because of physical health problems, (3) bodily pain, (4) social functioning, (5) general mental health (psychological distress and psychological well-being), (6) role limitations because of emotional problems, (7) vitality (energy/fatigue), and (8) general health perceptions; short form-12 also available</td>
</tr>
<tr>
<td><strong>Hopkins Symptom Checklist-90</strong></td>
<td>90</td>
<td>~$2 per form</td>
<td>Robust evidence</td>
<td>Derogatis (1992)⁵⁵⁹</td>
<td>Assesses a large range of domains: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism; 18-item version also available (Brief Symptom Inventory)²⁸⁶</td>
</tr>
<tr>
<td><strong>Depression Anxiety Stress Scale</strong></td>
<td>42</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Lovibond &amp; Lovibond (1995)³⁰³</td>
<td>Assesses past week.; 21-item version also available; particularly suited to assessment of sub-sydromal symptoms in community samples and has good psychometric properties;³⁵⁷ Australian norms available; ⁴⁶⁵ 4-point Likert scale; described in detail on page 119</td>
</tr>
<tr>
<td><strong>State-Trait Anxiety Inventory</strong></td>
<td>40</td>
<td>~$1-2 per form</td>
<td>Robust evidence</td>
<td>Spielberger (1970)²⁹⁹</td>
<td>Children's version also available; broad coverage of anxiety symptoms; 4-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
<td>Cost</td>
<td>Validity &amp; reliability</td>
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<tr>
<td>Centre for Epidemiological Studies Depression Scale</td>
<td>20 items</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Radloff (1977)²⁸⁷</td>
<td>Originally designed for at clinically depressed samples; 4-point Likert scale focusing on past week</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>21 items</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Beckham &amp; Leber (1985)²⁸⁵</td>
<td>Originally designed for clinically depressed samples; 4-point Likert scale focusing on past month</td>
</tr>
<tr>
<td>Beck Anxiety Inventory</td>
<td>21</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Beck et al. (1998)⁵³⁵</td>
<td>Originally designed for clinically anxious samples; 4-point Likert scale focusing on past month</td>
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**Affective balance and stress**

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<th>Measure name</th>
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<th>Validity &amp; reliability</th>
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<tbody>
<tr>
<td>Perceived Stress Scale</td>
<td>20</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Cohen et al. (1983)²³⁶</td>
<td>Well correlated with depressive/anxiety symptoms but weakly correlated with life events; 10 or 4 item versions also available</td>
</tr>
<tr>
<td>Symptoms of Stress Inventory</td>
<td>95</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Leckie (1979)³⁰⁰</td>
<td>Measures physical, behavioural and psychological responses to stressful situations</td>
</tr>
<tr>
<td>Profile of Mood States</td>
<td>65</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>McNair et al. (1971)²⁹⁴</td>
<td>Assesses moment to moment affective content; 5-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
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<td>Validity &amp; reliability</td>
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<tr>
<td>Modified Differential Emotions Scale</td>
<td>20</td>
<td>Nil</td>
<td>Limited evidence</td>
<td>Fredrickson et al. (2003)(^{537})</td>
<td>Includes positive and negative emotions including low energy emotions e.g. contentment (cf. PANAS below); 5-point Likert scale</td>
</tr>
<tr>
<td>Positive &amp; Negative Affect Schedule</td>
<td>20</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Watson et al. (1988)(^{79})</td>
<td>Does not include ‘deactivated emotions’ such as contentment (see Modified DES above); 5-point Likert scale</td>
</tr>
<tr>
<td>Responses to Stress Questionnaire</td>
<td>57</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Connor-Smith et al. (2000)(^{305})</td>
<td>Voluntary and involuntary responses to sources of social stress; developed for adolescents (aged 12-18)</td>
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**Psychosocial function**

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<th>Measure name</th>
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<tr>
<td>Behaviour And Symptoms Identification Scale</td>
<td>32</td>
<td>$400 per year</td>
<td>Robust evidence</td>
<td>Eisen et al. (1986)(^{538})</td>
<td>Low ceiling as developed for mentally ill population; only first 12 items are functional measures; items 13-31 are symptom domains and item 32 assesses life satisfaction; uses the stem ‘To what extent are experiencing difficulties in...’ e.g. ‘Household responsibilities’; 5-point Likert scale covering past two weeks</td>
</tr>
<tr>
<td>Personal Mastery Scale</td>
<td>7</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Sherer (1982)(^{539})</td>
<td>Assesses confidence and agency e.g. ‘There is really no way I can solve some of the problems I have’; 4-point Likert scale</td>
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<tr>
<td>Measure name</td>
<td>No. of items</td>
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<tr>
<td>Work and Social Adjustment Scale</td>
<td>5</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Marks (1986) 396</td>
<td>Developed for mentally ill patients; all statements begin with ‘Because of my [insert disorder]…’ e.g. ‘my social leisure activities (with other people, such as parties, bars, clubs, outings, visits, dating, home entertainment) are impaired’; 9-point Likert scale</td>
</tr>
<tr>
<td>Resilience Scale</td>
<td>25</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Wagnild &amp; young (1993) 447</td>
<td>Assesses two domains: personal competence and acceptance of self and life; focused on individuals’ long-term view of their personalities; 7-point Likert scale</td>
</tr>
<tr>
<td>Resilience Scale for Adults</td>
<td>37</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Friborg (2003) 540</td>
<td>Measures self-concept regarding enduring characteristics</td>
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<tr>
<td>Potential mediators</td>
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<tr>
<td>Ten Item Personality Inventory</td>
<td>10</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Gosling et al. (2003) 449</td>
<td>Contains two items for each of the five factors of personality described by Costa and McCrae (1992); items begin with ‘I see myself as…’ e.g. ‘Dependable, self-disciplined’; 7-point Likert scale</td>
</tr>
<tr>
<td>Measure name</td>
<td>No. of items</td>
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<tr>
<td>Medical Outcomes Study Social Support Survey</td>
<td>20</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Sherbourne &amp; Stewart (1999)\textsuperscript{541}</td>
<td>Perceived availability of social support in four areas: emotional, informational, tangible, affectionate, and positive social interaction; designed for general medical patients; 5-point Likert scale</td>
</tr>
<tr>
<td>Life Orientation Test</td>
<td>10</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Scheier &amp; Carver (1994)\textsuperscript{542}</td>
<td>Designed as a measure of optimism; 5-point Likert scale</td>
</tr>
<tr>
<td>Temperament and character inventory Revised</td>
<td>240</td>
<td>7 yr licence fee</td>
<td>Robust evidence</td>
<td>Cloninger (1994)\textsuperscript{540}</td>
<td>Designed to measure preponderance of mature character traits such as self-directedness, cooperativeness and self-transcendence; 5-point Likert scale;</td>
</tr>
<tr>
<td>Values in Action Inventory of Strengths</td>
<td>240</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Peterson &amp; Seligman (2004)\textsuperscript{581}</td>
<td>Designed to measure 24 character strengths and virtues; typically takes 30-40 minutes to complete; 5-point Likert scale; see also page 32</td>
</tr>
<tr>
<td>General self-efficacy</td>
<td>10</td>
<td>Nil</td>
<td>Robust evidence</td>
<td>Jerusalem &amp; Schwarzer (1993)\textsuperscript{450}</td>
<td>Assess an individual's perceived sense of ability to cope with stresses; 10-point Likert scale</td>
</tr>
</tbody>
</table>
Appendix B: E-MATE v.1 demonstration website

The screen shots below are from www.mateprogram.org. This site was developed by the author using Google Sites (Google Inc., Mountain View, CA, 2009) and Survey Monkey (SurveyMonkey.com LLC, Palo Alto, CA, 2009). These are freely available online and data collection programs. The prototype as presented below was used when discussing ideal design with young people in the consultation phase of the study.

The training page for each week begins with a short introduction and contains four 5-10 minutes videos. Videos from YouTube presenting international experts’ discussion of mindfulness were used for the demonstration version.
At the bottom of each week’s training page an MP3 for home practice is available for download as well as a PDF outlining what was covered in the videos...

Outcome measures were presented in this fashion...
Appendix C: Handouts for the MATE v.2 trial

Participants were provided with a 1-2 page handout at the end of each of the six program sessions. The use of quotations has been suggested in mindfulness training and in participant handouts and workbooks as a way of illustrating and enlivening teaching points.\textsuperscript{252,262}

The author wrote the handouts and presented them for review to Dr Craig Hassed, the facilitator, before they were given out to participants. A number of sentences in the very last numbered item each week, the ‘task’, have been directly taken from \textit{Know Thyself} by Dr Hassed (2006).\textsuperscript{252}
Week 1: Stress and mindfulness

What is stress?

- In the body: a sense of tension and restlessness in muscles, a dry mouth. Sometimes there might even be a sense of “butterflies in the tummy”, feeling shaky or feeling that your heart is beating too fast or that it’s an effort to breathe.

- In thoughts and emotions: feeling afraid or worried, feeling that something bad is about to happen or simply feeling under pressure or that there is just something wrong.

- Here and there these reactions are healthy and useful and can help get us out of danger (e.g. when confronted by a shady character in a dark alley). Unfortunately though we often have these experiences about bad things we imagine might happen (e.g. when you’ve got exams coming up!) When this happens frequently it can lead, apart from feeling anxious, to tiredness, feeling low in mood and not being able to concentrate on what you’re doing.

How might mindfulness help?

- People often try to distract themselves from what’s stressing them out or run away from the unpleasant feelings of being stressed out. This tends to make things worse.

- As it turns out, if you pay attention to what’s going on inside you, not so much thinking about it, but just watching, often the bad feelings tend to reduce or change or at least not feel as overwhelming.

- Mindfulness meditation trains our minds to gently and without being harsh on ourselves shift our attention from being lost in our thoughts and worries to rest on some of the variety of things that are going on in the present moment e.g. our breathing.

- With greater focus in our day then it is easier to get on with our lives and to distinguish imagination from reality: stress reduces, enjoyment increases and performance improves.

Try these at home:

You might like to keep a journal about how you’re finding the program. Also write down the successes and difficulties you have with trying these things at home so we can discuss it in the session each week.

1. Practise some meditation
   Like we did in the session tonight try sitting down, in a quiet place, for 5 minutes twice a day and follow the instructions on the 3rd track in the CD.

2. Pay attention: notice what’s going on!
   See how often in your day-to-day life you seem to be aware of what’s going on, really present in what you’re doing, and how often you’re lost in your thoughts. Notice, without criticizing.

3. Have a go at mindfulness “task” 1: perception
   Look at the relationship between how you see a situation and how stressed out you feel about it. Are you getting things out of perspective by making mountains out of molehills? Are you creating “stressors” (i.e. imagining things that can cause stress) that don’t exist? Are you ignoring issues that do need attention? When you do get stressed out in the next week, don’t regret it or blame yourself about it. Instead take the opportunity to have a moment of mindfulness and then a fresh look at the so-called stressor.

“There is nothing either good or bad but thinking makes it so.” Shakespeare
Week 2: Becoming mindful in day-to-day life

Working with mindfulness

- It’s very important to be kind to ourselves as we learn this skill. It is the mind’s nature to wander from the breath or wherever we’re resting our attention. It is also common that we might judge ourselves as “no good” or get frustrated at the mind’s habitual wandering. When we realize that the mind has wandered off and is lost in thoughts, it is best to simply accept what has happened as natural and gently remind the mind to come back. Again and again and again. Let’s not put pressure on ourselves to try and stop trains of thought, but rather not to get on the trains.
- Mindfulness is a skill practised when sitting to meditate but it’s available all of the time: as you are going about your daily life try to bring your mind to be with whatever you’re doing. If you are taking a shower, notice the full range of sensations at that moment (e.g. the sound of the water, its flow, its temperature against your skin etc.). And when you notice the mind’s got lost in thoughts about what you’re going to have for lunch then just gently, with a smile, bring it back to here and now.

Letting go & Acceptance

- Greater happiness and deeper understanding of ourselves tends to happen by itself as we let go of our attachment to unhappy thoughts or unhelpful ideas rather than needing some extra ingredient we need to get or look for. We often live as if our happiness depended on holding on to things we had (e.g. our place at the top of the class or even being right in an argument) or getting things we didn’t (e.g. a better phone). But this process is endless: there are always bigger and better things to want. Letting go of the intensity of this urge to have or keep things leads us to feel more peaceful and ultimately happier inside... and if it is our lot, we’ll have those things we wanted anyway!
- Often in life we have to go through something unpleasant. “That’s life”. Now we can take this suffering willingly or unwillingly. Either way, we’ve gotta take it. When we accept the situation as it is, we free up a lot of our energy caught up in hating it or complaining about it that we can use for dealing with it. We feel better but aren’t left passive either: we are now in a better position to take any action we choose to take.

Try these at home:

A reminder: it can be helpful to keep a “mindfulness journal”

1. Keep practising “formal meditation”
5 minutes twice a day is great. Feel free to meditate with some of the longer tracks on the CD.

2. Work with “informal meditation”
Bringing your attention to the physical sensations involved in what you’re doing in daily life and bringing the mind back again and again to it when you noticed it’s lost in thoughts.

3. Explore “task” 2: letting go and acceptance
During day-to-day life when you notice stress or conflict, whether it be internal or external, see what is being held on to. Is the tension related to holding an opinion, a condition for happiness we have set up in our own minds, a fear, criticism of oneself or another, a like or dislike or a desire that might not be wise? See what effect holding on has, and what effect it has on stress if we let go of the mental tension. What effect does it have on stress if we willingly accept things that we can’t or shouldn’t change or if we accept the effort it takes to change the things we should?

To feel relaxed we do not have to do anything... we simply have to let go of tension!
If you open your arms, emotionally, to some pain you’ve gotta have, it somehow hurts less.
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The MATE program

Week 3: Being in the present moment

We make our lives harder by our minds being in the past or future much of the time

- The mind’s tendency to keep returning to some past event again and again isn’t helpful. Learning from past mistakes can help of course but that’s different. It may take the form of an insight that comes to us or we might physically sit down, think about it and even write our reflections down in a journal. Either way we learn and move on.
- As for the future, say a cricketer is near 100 while batting. What’s the best thing for them to do? Get all excited or worried? The Don was famous for just focusing on “playing each ball”.
- We will only be able to deal with the future when we’re in it... that is, when it has come to be the present moment. So unless we’re sitting down to plan something, the mind going over and over what's going to happen doesn’t help. We might as well get good at being in the moment right now. Then we’ll deal with what we were worrying about better once we get there.

Defining ourselves with our thoughts can contribute to stress

- We tend to have a sense of our self as separate from others based on a bunch of ideas about who we are e.g. “I care about the environment.” This is fine, except we can miss the fact that there is another aspect of us that is having these opinions about who we are! So are we totally definable by these opinions then? What about the aspect that is having the opinions?
- When we are strongly attached to the sense of ourselves as a bunch of opinions we are left very vulnerable. What if someone disagrees with us? Or we fail to live up to the idea? It’s not just our opinion that is then in danger but who we are as a person.
- By getting to know ourselves better and better, not so much thinking about ourselves but simply paying attention to what’s going on inside, listening, we come to gradually see that none of these ideas define us fully.

Try these at home:

It’s not too late to start if you haven’t already: it can be helpful to keep a “mindfulness journal”!

1. Keep practising “formal meditation”
There is a huge difference between meditating for 5 minutes and not meditating at all. Make a firm commitment with yourself to sit down twice a day for some amount of time no matter what. Of course you might like to meditate with some of the longer tracks on the CD if you like.

2. Try putting in a few mental “commas” in your day
Remember the meditation that took a minute or so? It’s also on the CD. Try peppering your day with a few of those and see what happens. For example, if you’ve rushed to get somewhere, just slow down, take stock and bring your attention to the breath and the body, before you go in.

4. Mindfulness “task” 3: presence of mind
When feeling stressed out through the week, watch your mind and see if thoughts about the past or future can lead to it being more upset (than if you were just feeling what was going on at this moment) or distracted from what you’re doing. You’ve gotta plan and prioritize tasks but once you’ve chosen something to do, be it leisure, chores, work or study, do it fully. Practise bringing your mind to the present moment, to the experience of being there doing whatever you’re doing, using your physical sense. “Come to your senses” as it where by checking in with what you can feel in your body, see or hear. Noticing the sense of your breathing, especially if you’ve been practising with it while sitting, can help anchor you to the present moment quickly.

What we practise we get good at, whether it be getting stressed or finding peace of mind.
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Week 4: Getting to know ourselves

Being with ourselves

- Happiness, that is not just pleasure but a kind that feels lasting and meaningful, grows out of increasing awareness and self-knowledge. Even if what we see may at times feel unpleasant.
- Interestingly, becoming more familiar with our own bodies, thoughts and emotions brings us closer to others too. It’s what helps us to empathize with others. We can also experience life, the natural world and day-to-day events in a deeper, richer way. Perhaps this is because it is only through our senses that we taste what is around us. And through our thoughts and emotions that we attach meaning to it.
- This “getting to know ourselves” is first and foremost just being with what we can sense or feel. As if we have immersed ourselves in a pool of water and are just experiencing it: neither running out because it is too hot or cold nor getting caught up in thinking about it: “I wish it was a bit warmer in here”!

Limitations: a double-edged sword

- As we get to know ourselves better we may notice that in our minds we set many limits which often go far beyond any real or physical limits there might be. Some are unhelpful, unreasonable and come from habitual ways of thinking: these tend to increase stress.
- Imagine a young child who is offered the opportunity to draw. They often approach this experience with curiosity, enthusiasm and a sense of fun. As we grow up though we may come to decide that we “can’t draw” or “can’t speak in public”. The more we tell ourselves these things the more they become a fixed part of us. Our performance, if we ever have to give it a go, will also likely be affected. Instead of a positive engagement with what we are doing, half of our attention is caught up by “well, as I thought, I’m no good at this”! Better to give attention to the task and not the ideas.
- It may give us new opportunities, freedom or enjoyment if we test our limits. Best to do this bit by bit, trusting ourselves to take reasonable steps with the less frightening limits first!
- On the other hand, some limits are helpful, reasonable, and help us respect our bodies and minds: these reduce stress. It may be healthy, for example, to have limits on how much we eat, drink alcohol or even exercise. Again the process is the same: paying attention to the situation and acting with a sense of what it requires: our bodies might tell us it’s best to stop!

Try these at home:

1. Keep up the twice daily sitting meditation practice
   Very gradually, even if we don’t try, we come to be more attentive to what we are doing in our day-to-day life and to know when we have got caught up in our thoughts. This happens naturally as we take time aside in each day to do meditation. Sitting down and intentionally “not doing” but “just being” with what you can observe. Getting practised at this “just watching” makes it more likely that we notice when we’ve got caught up in some unnecessary worry or rumination in daily life and can then let it go.

2. Mindfulness “task” 4: limitations
   When situations arise in daily life observe the tendency for habitual limitations to also arise. See what effect they have. Are these limitations self-imposed and not truly fixed? If appropriate and reasonable, observe the effect of confronting a limitation or fixed idea about yourself by letting it go and practising paying attention to the situation instead. Do your best to just have a go and not worry about success or failure.

We can only hope to work on improving things emotionally once we have come to really get to know what’s going on for us in the first place.
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Week 5: Part 1 Mindful listening

What can we hear? What are we listening to?

- Have we ever been hearing someone speak but not take in a word of what they were saying? Been introduced to someone but immediately forgotten their name? Found ourselves listening to lots of negative and self-critical thoughts in our own mind?
- What is it like when we’ve been speaking to someone and we have felt that their entire attention is on us? What about when we could “almost hear them thinking” or feel that they were distracted?
- We’ve been practising becoming aware of “where is the mind at this moment” in our meditation exercises. Where is our mind when we are hearing someone speak? We can have all our attention on them, or have part or all of it caught up in our thoughts. Either daydreaming, self-criticizing, thinking about what they are saying, or “answering” them in our minds.
- When we listen attentively we pick up a lot more than the words. The person's body language or emotional tone may now become “audible” to us. Our own intuitive sense of what is going on in the communication may also become more available to our conscious mind. A brewing conflict can be more quickly sensed and avoided, rather than be made worse, by an impulsive raise of the voice or the like.
- When we are stressed or angry, can we notice what conversations we are listening to in our own minds? Notice what happens when we pay attention to this listening. It may bring us to the present moment and have us realize that besides the chatter in our minds there are a whole lot of other sounds occurring as well: the wind, birds, cars and so on.
- Here are two ways to enrich the experience of listening:
  1. Remembering that we are always listening to something: our own thoughts or what we can actually hear. Let’s try leaning our attention towards the sense of hearing, much like we might have done with the sensations in the body in our meditation practice.
  2. Paying attention to how ideas in our minds can make us judge what we are hearing in conversation. Experimenting with letting go of these ideas in favour of simply listening to the person.

Try this at home:

Continuing to make it a habit to sit for meditation twice a day, we can experiment with some longer practices now when possible. Either using the 20 minute track on the CD or trying it out on our own. In day-to-day life, when we can, we may like to try out what Winnie the Pooh says: “Don’t underestimate the value of Doing Nothing, of just going along, listening to all the things you can’t hear, and not bothering!”

Mindfulness “task” 5: listening

Keeping in mind that we’re always listening to something, pay attention this week to what it is. How much of the time are we “away with the birds”, distracted by self-talk and internal conversations? What kind of talk is this? What kind is it when we are stressed? What’s the effect of listening to it? Practice listening less to our mental chatter and more to what we can hear around us: family, friends, strangers. Notice what happens if we do that.

“To listen is to continually give up all expectation and to give our attention, completely and freshly, to what is before us, not really knowing what we will hear or what that will mean. In the practice of our days, to listen is to lean in, softly, with a willingness to be changed by what we hear.” Mark Nepo
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Week5: Part 2 Self-discipline

Discipline brings freedom

- Say we’ve put off something we know we need to get done. Can we really enjoy what we do instead? Maybe the time we might buy through procrastination costs too much?!
- When we do what our better judgment tells us we feel free of worrying about not having done it or the nagging of our conscience. That feels like real freedom. Being “free” to do whatever we feel like all the time is a fantasy. We might as well give it up!
- It’s as if there is a “whatever I feel like” or naïve part of us. Like a child running after a ball across the road, it tells us to follow every desire there and then. And there is a wiser part, our “better judgment”, that knows it would work better if, for instance, we do some work first and then satisfy that desire. In gaining greater self-discipline we are learning to listen to the wiser part or “remembering what we really want”. As David Campbell says, “Discipline is remembering what you want.”

Discipline is not about being harsh or self-critical towards ourselves

- Getting into a fight with ourselves or beating ourselves up inside are not helpful paths to greater self-discipline. Genuine and healthy discipline arises out of the wish to be good or kind to ourselves. Of letting go of what is of no use to us. And the action we may take, tough as it might look before we’ve got into it, comes as a natural response to the situation. A kind of “going with” the situation, even when it needs us to work hard.
- Self-discipline takes some effort, though not in a rigidly self-forcing or “gritting our teeth” way. The effort become easier and easier the more used to living with discipline we become.

Discipline begins with mindfulness

- Sometimes we need to show discipline to make up for something: correct a mistake or make an apology. Sometimes we need it to help us kick a habit that we know is not good for us. Having dropped the self-criticism around the issue, bringing our attention to what it’s like to be acting out that habit or to not have made that apology is a good place to start.
- We might take note of any thoughts that play in our mind in anticipation of doing the habitual thing or of what it costs us to do it or how it leaves us feeling afterwards.
- If we wish to be free of a habit we’ve got to identify the strong commitment that is required inside of ourselves. Then we can have the strength to experiment with “riding out the desire” to do what we wish to stop. Feeling the desire as if it were a wave in the ocean: it may be uncomfortable but all the same we can let it pass over us. It helps to stay with the feeling and to bring our mind back from all the thoughts about it: like we practice in meditation.

Try this at home:

Mindfulness “task” 6: self-discipline
See what effect having too little self-discipline has when we procrastinate or overdo something. Let’s experiment with paying attention willingly and immediately to the needs of any given situation we encounter through the day and see what effect this has on stress. Is stress relieved when we don’t put things off? Does it take more energy to put something off than to simply do it? Practise saying no a few times to the things our better judgment tells us to say no to.

“Right discipline consists, not in external compulsion, but in the habits of mind which lead spontaneously to desirable rather than undesirable activities.” Bertrand Russell
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**Week 6: Part 1 Emotions**

**Becoming familiar with emotions**

- As we work on paying attention to what we can sense in our bodies, thoughts and feelings at each moment we come to understand our own feelings better. We learn for instance that having bad feelings is fine, healthy and “normal”. It is holding on to them that causes us problems. An emotion like anger becomes destructive and unhelpful when it takes control of us or is exaggerated and long-lasting and means to hurt people: it becomes a “negative emotion”.

- We suffer most ourselves when we hold on to and put more fuel on the fire of a negative emotion. We also make others suffer. Being angry with a friend who has meant us no harm by a mistake they made can make them upset and even angry. In their anger they may say things that makes us more angry and so a vicious circle is set up.

- Our past experiences can unconsciously influence what emotions we tend to feel in future situations. Sometimes we consciously hold on to past experiences which are generating negative emotions in our daily lives. This is unhelpful.

**Learning not to be ruled by emotions**

- Often the reason why we don’t feel good is that we are too busy letting ourselves feel bad far beyond what is necessary or unavoidable. It doesn't work so well to try to stop negative feelings or to sweep them under the carpet. If we observe negative emotions, such as excessive guilt and anger, and practise letting them go they tend to lose their hold on us. Positive emotions, such as hope or joy, then spontaneously arise. Like when at the train station: we don’t try to stop the train we don’t want but can choose not to get on board. The next train that arrives maybe just what we wanted to see.

- Clear-headed self-evaluation, aimed at improving how we do things, can be very useful. Emotionally charged self-criticism however, “Oh you loser, you stuffed up again”, saps our energies. It does not help us improve and doesn’t prevent us “stuffing up” again the next time either.

- As we come to understand our own emotions better, and see how we often hold on to them for too long and too intensely we can begin to see how others are similarly caught up. A sense of compassion for others then naturally arises. So we may sense how painful it must be for an angry person to be feeling that way and feel a wish for them to suffer less rather than get angry in response.

**Try this at home:**

Continue to work on being more mindful in day-to-day life. To be better able to take life as it comes, to really and deeply experience it rather than be caught up in unnecessary or unhelpful thoughts. Remember that the twice daily sitting meditation practice acts as a kind of fertile soil for this day-to-day attitude to grow in.

**Mindfulness “task” 7: emotions**

Without self-recrimination, observe the effect of when we are ruled by negative emotions. See what the thought patterns behind negative emotions that arise in daily life are. Observe the effects of letting go of negative emotions such as fear, anger, resentment and guilt. See what the effect of letting go of the desire to play on or manipulate these emotions in others is.

“Feelings are much like waves, we can't stop them from coming but we can choose which one to surf.”

Jonatan Mårtensson
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The MATE program

*Week 6: Part 2 Expanding self-interest*

Caring about others is caring about ourselves

- Paying close attention to our feelings can reveal how intensely they are linked to our relationships with others and how sensitive they can be to how others around us are feeling.
- We come to see that our well-being depends on the well-being of those around us. It is as if different people are like the different cells of the same body. The well-being of the whole affects the well-being of individual parts. Treating our neighbour the same way as we would like them to treat us makes sense because ultimately we are part of the same whole.
- When we expand our interest in greater happiness beyond ourselves and extend a similar care and concern for others we tend to feel happier. This doesn’t have to involve some grand world-saving scheme or even doing volunteer work but can be practised in our day-to-day interactions with people: in being kind, in being compassionate and in caring about how others feel.
- As a species we have evolved to be naturally drawn to behaving in a way that is kind to others. When under stress however, we can often become overly self-focused. Sadly in forgetting about others around us we can make ourselves even more unhappy.
- We may live in a society that encourages excessive competition. This can be destructive when it is more in the service of beating others, rather than bringing out excellence in ourselves. Cooperation often leads to better results whether it be between the members of a footy team or students preparing for a big exam. Considering the challenges that we face on this planet today it may be useful to consider this question: “Would we survive better on a life raft where people looked after each other or one where everyone was out for themselves?”
- Keep in mind that this is not about being a doormat and letting our own needs be abused to serve others. The same care we may aim to have for others we do well to have for ourselves.

Try this at home:

*Mindfulness “task” 8: expanding self-interest*

Focusing on being practical and not merely idealistic, examine whether our view of self becomes isolated and cut off from others when we are stressed. We can try to expand our sense of self and of self-interest to increasingly include those around us. Examine what effect this has on stress. Do we help ourselves at the same time as we help others? See what effect an act or gesture of kindness, care or goodwill has on our stress. Without trying to manufacture any particular effect, see what effect this has on others.

“Too often we underestimate the power of a touch, a smile, a kind word, a listening ear, an honest compliment, or the smallest act of caring, all of which have the potential to turn a life around.”
Leo Buscaglia

“Happiness is a by-product of an effort to make someone else happy.” Greta Brooker Palmer
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Closing discussion, end of 6\textsuperscript{th} week: Part 1 Where to from here?

Meditation: a way to keep “fit”

- There are a lot of parallels between physical exercise and meditation:
  - They're both good for both the body and the mind.
  - They help best when they are done almost every day... but any little bit helps.
  - The benefits tend to accumulate with time as we keep going.
  - In the first few weeks they may seem like they are not “doing much”. There is no way to get fit quickly.
  - Often we may feel some resistance to “getting off the couch” to do them, but tend to feel glad we did them once we do.
  - People tend to gradually feel for themselves very clearly how good it is for them to do exercise or meditation regularly but they still “fall off the wagon”. Sometimes stopping for months or even years at a time. Any time we get back into it is a good time. The door's open all the time. We may get out of the habit of walking through it everyday, but can simply walk right back in any time we like. However long it’s been since the last time!

- Now that we've given meditation a go for a few weeks it might be helpful to see what our gut feeling says about it. If it feels like something that is good for us and is likely to lead us to have more peace of mind and happiness, then let’s commit to it. What is worth working towards more than “peace of mind and happiness”? We tend to be our best for others and the world too when we are at our most balanced. So if it feels right for us, we can make a firm decision to practise everyday. Not in a “grim determination, gritting our teeth” kind of way, but, gently, as an act of kindness towards ourselves. And if we fall off the wagon, let's let go of any self-blame. It doesn't help. We can just get back on. Walk back in. Just like we do when the mind gets distracted from the breath: letting go of any upset about it, and just coming back.

What about in day-to-day life?

- The top reason to meditate regularly is that the way of relating to what we experience that we practise on the cushion or the chair then naturally trickles into our daily lives. Surprisingly even if, because we meditate, we stay ruminating or feeling upset about something for 1 less hour out of 10 it feels like a big change. And slowly the 1 becomes 1½, then 2 and so on.
- It also helps to remember, as best we can, the mindful way of being in everyday situations. Here are a couple of tips:
  - \textit{Using the feeling of stress or upset itself as a reminder}: We can decide that whenever we feel stressed out the first thing we’ll do is “come back to our senses”. How are the sensations of breathing doing? What sensations are there in the body as a whole?
  - \textit{Peppering the day with regular “commas”}: These are 1 minute "meditations". There is an example on the CD: we simply stop what we are doing, be still, get in touch with our sense of breathing and any other sensations that are present, sit with that for a minute and then continue what we were doing from there. We may pick points of “transition” in the day for these e.g. getting home, once we’ve got on the train in the morning and so on.

- Keeping the handouts from the program somewhere handy for the next few months may help: having a look at the various “tasks” once a month can be a good reminder of all the different ways we can bring mindfulness into every day life.
- It can help a great deal to sometimes meditate with other people, read about mindfulness or discuss these ideas or our practice with others. In the next page there are a few suggestions...
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The MATE program

Closing discussion, end of 6th week: Part 2 Ways to keep this work alive and seek support and guidance

Going to a meditation group

People find that aside from their meditation “being stronger” when they do it with others, the chance to discuss any difficulties they are having or to ask questions can be very helpful. There are many different meditation traditions and styles. Most of them are helpful, so by all means try other options you may come across. We have listed these, run by the “Melbourne Insight Meditation Group”, as we are familiar with them and feel that they are consistent with what you have been learning in the program. If you are keen to attend, send an email to Suzie Brown suziebrown@iinet.net.au. They tend to be weekly but you can go as often or as little as you like. Usually there is a $5-$10 donation to cover the costs of hiring the room, but you are only expected to pay if you can afford it.

- Sunday nights: “Tastes of Yoga”, First Floor, 2a Barkly Ave, Armadale (cnr Glenferrie Rd): 6-7.30PM
- Monday nights: CERES, Lee St, East Brunswick: 7.15-9PM
- Thursday nights: Dassanayaka Yoga Centre, 58 Bastings St, Northcote: 6.30-7.30PM
- Friday nights: Dassanayaka Yoga Centre, 58 Bastings St, Northcote: 6.30pm-7.30PM

Books and websites

The key thing for gaining ground in mindfulness is daily practice: both on the chair or the cushion and in day-to-day activities. It can also help to read about mindfulness or listen to podcasts. It tends to deepen our understanding of what we are doing sometimes and at other times can be a source of support and guidance when “it all seems too difficult”.

Books

- The detail and background to the program you just did. Probably the best place to start.

- This book presents mindfulness in a series of short, easy to read chapters. Jon Kabat-Zinn is one of the most famous and well-respected Western mindfulness educators.

- This is a great brief book by a Vietnamese monk intended as an introduction to meditation for everybody.

CD’s

Mindfulness for beginners. Jon Kabat-Zinn.
- A mixture of discussion about mindfulness and guided meditation.

Websites

www.audiodharma.org
- This site has a great variety of talks about mindfulness and meditation as well as meditation instructions.

On this page of the site you can find a free five week course:
www.insightmeditationcenter.org/books-articles/meditation-instruction
Appendix D: Participant information and questionnaires

Materials used in the consultation process on MATE v.1 and evaluation MATE v.2 are presented in this Appendix. Information and consent forms for both studies, as approved by the University of Melbourne Human Ethics Sub-Committee, are followed by outcome measures used in the trial of Live MATE v.2 (including the two pages that preceded scales at each of the pre/post/follow-up time points and the protocol for the initial screening telephone interview). Questions used in qualitative stages in both Studies 1 and 2 are then presented. The appendix ends with the description of mindfulness prepared for Reachout.com and used in the consultation study.
Project title: Engaging young people in the design and evaluation of an innovative mental health promotion intervention.

Plain language statement: Ethics application ID no. 0932549.1

**Purpose of the project:** To obtain advice from a group of young people as to how an innovative intervention to improve the mental health of young people and prevent common emotional problems may be improved in its design and evaluation program. The intervention, as currently designed by the research team below, involves educating participants about how emotional stress is generated, what effects it has and how, using a mental training technique known as “mindfulness” it may be dealt with better. It is proposed that one version of the intervention is conducted online and that this be compared with a version delivered face to face (to groups of young people). Suggested outcomes of interest are changes in well-being, social and occupational functioning and frequency and severity of emotional difficulties experienced. It is proposed that changes in groups undergoing either version of the intervention be compared with a group who are simply placed on a waiting list with a view to receiving the intervention at a later date.

**Involvement requested:** Participants are encouraged to work in groups of up to 8 to discuss details of the intervention and associated evaluation protocol as presented by two of the researchers. Group discussions will be held at Orygen Youth Health in Parkville, Victoria. Participants may alternatively elect to be contacted by telephone by one of the researchers and provide input in that way, or instead contribute to an online forum discussion of the intervention on reachout.com. Group or telephone discussions will be audio-recorded to allow researchers to prepare accurate transcripts of participants’ statements.

**Possible risks:** Discussion of the intervention (e.g. how it is proposed to influence levels of stress) may remind some participants of their own emotional difficulties and this may be distressing. Participants are welcome to either take time out from involvement or cease involvement altogether if this occurs. The researcher involved will be available to provide initial debriefing and suggest appropriate avenues for emotional care as needed (see below).

**Confidentiality and data disposal:** All content discussed in focus groups, telephone interviews, or submitted via the internet will be de-identified irreversibly (i.e. no record will be kept relating names of participants to statements made). Participants will not be referred to by name in any publications produced as a result of the study. Please note that participant confidentiality is absolute except in the exceedingly unlikely circumstance that data that had been retained is subpoenaed by a court, or requested under the Freedom of Information Act. Data will be securely stored for 5 years following which time it will be destroyed by means of shredding of paper material and secure deletion of electronic/audio recordings.

**Consent to participation:** You will be asked to provide free and informed consent prior to involvement in the study. Please note that involvement in the project is entirely voluntary and you are free to withdraw your consent to continue at any time. You can also request that any unprocessed data previously supplied by you be withdrawn.

Community and health services available to provide psychological care if involvement in the project leads to distress: Lifeline 131114 is a 24 hour counselling service staffed by highly trained volunteers who can help both in times of crisis or where emotional support may be needed. If it is felt that immediate face to face assessment and crisis intervention is needed participants may be referred to/may contact their local Crisis Assessment and Treatment (CAT) service. Appropriate telephone numbers are based on the suburb where help is needed and will be provided by the researchers for participants being interviewed by telephone (and may be accessed at www.health.vic.gov.au/mentalhealth/services for participants contributing via the web forum). For participants who attend groups in Parkville the appropriate contact number is 1300 304 407.

**Project affiliations:** This project forms part of a PhD research program being undertaken by Dr Kaveh Monshat in the Centre for Youth Mental Health, University of Melbourne. He is supervised by Professor Helen Herrman (principal researcher) of the same department as well as Dr Jane Burns, Inspire Foundation and Dr Dianne Vella-Brodrick, School of Psychology, Psychiatry and Psychological Medicine, Monash University. **Researcher contact details:** Dr Kaveh Monshat Tel: +61 3 8346 8259; Professor Helen Herrman Tel: +61 3 9342 2800; Dr Jane Burns: +61 3 9342 2800; Dr Dianne Vella-Brodrick: +61 3 9903 2542.

*If you have any concerns about the appropriate conduct of this project please feel free to contact the Executive Officer, Human Research Ethics, The University of Melbourne, ph: 8344 2073; fax 9347 6739.*

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Project title: Engaging young people in the design and evaluation of an innovative mental health promotion intervention.

Ethics application ID no. 0932549.1

Researchers: Professor Helen Herrman¹, Dr Kaveh Monshat¹,³, Dr Dianne Vella-Brodrick², Dr Jane Burns¹,³

1. Centre for Youth Mental Health, University of Melbourne
2. School of Psychology, Psychiatry and Psychological Medicine, Monash University
3. Inspire Foundation

Informed consent form

I (please PRINT name) ............................................ have read the “plain language statement” regarding this study and note that my contribution may be audio-recorded.

I understand that the researchers will treat all data confidentially and my name will not be recorded against statements made by me. I accept to treat statements made by other research participants confidentially. I accept, however, that an absolute guarantee of confidentiality is not possible e.g. in the exceedingly unlikely circumstance that data that had been retained is subpoenaed by a court, or requested under the Freedom of Information Act.

I further understand that involvement in the project is entirely voluntary and that I am free to withdraw at any time and ask that any unprocessed identifiable data previously supplied by me be withdrawn also.

I hereby provide my consent for participation (of myself/my child [delete as appropriate]) in this study free from any coercion and with a full understanding of what my involvement will entail.

Signature: ............................................ Dated: ............................................
Name of participant: .................................................................
Relationship of person signing this form to participant: self/parent/guardian
Thank you for considering being involved in the project:

**Design and evaluation of a mindfulness training program for promoting the mental health of young people.**

*Ethics application ID no. 1034066.1*

**What is this project about?** We have designed a mindfulness training program for young people which we would like you to be a part of. In this stage of our project we want to run the program face to face for a few young people and take videos from it. We can then put these videos online so that other young people, without having to come and do a face to face program, can learn the skill of mindfulness. In the program we will start by talking about stress, what leads to people getting stressed and what effects it has. Then we will teach you about a way of dealing with life called “mindfulness” (see below) which tends to lead to less stress. Apart from getting to make videos we want to see if doing this face to face program provides benefits for you for example in your sense of well-being as well as your social life, work and study. We are also hoping that after doing the program you will feel less stress or feelings of anxiety or of being depressed. We also want to learn from you about your experience of doing the program.

**What we will be asking from you?** We will ask you to come to Orygen Youth Health (35 Poplar Rd, Parkville, Victoria) every week for 6 weeks for 1.5 hours starting on Wed Feb 16th, 2011. We expect to have 5-15 young people in the group. Dr Hassed who is an experienced mindfulness teacher will run the program. We will start by a series of questionnaires (which would take about 15 minutes to complete) about your emotional situation and any difficulties you may be having. One of the researchers (Dr Monshat) will be there to record video of the group discussion and take notes. Also we might ask you to appear on video to discuss your experience of the program. You won't have to say yes.

During the program Dr Hassed will ask you to practise “mindfulness meditation” for 2-10 minutes. This will mean learning to focus on either your breathing or your body sensations while noticing any thoughts or feelings without getting caught up in them. This will help you develop your ability to be more “mindful” in everyday life: bringing your attention to what you can sense or feel at each moment rather than spending all your mental energy thinking about the past, worrying about the future or beating yourself up. Dr Hassed will then be provided with instructions about home practise which will involve 5-20 minutes of time out for meditation twice a day as well as some tips on how to apply mindfulness to day to day activities. There will be a great deal of opportunity for you to discuss whatever aspects of your own life you feel may be causing you stress and how you may be able to apply what you are learning to that.

At the end of the program and six weeks after that we will again ask you to fill out questionnaires to see if there has been any improvement in your emotional life because of doing the program.

**Possible risks:** Discussions about stress may remind you of your own emotional difficulties and this may be distressing. You are welcome to either take time out from the discussion or stop being involved altogether if this happens. Dr Monshat, who is a psychiatrist, will be available to talk with you about what you’re going through, provide any initial help needed and help you work out what kind of help may be needed in the long term. You can contact him between program sessions on (03) 8346 8259.
Additionally there are many resources available in the community to help with any emotional distress that may occur. You may like to see your GP to discuss how you are feeling and decide what kind of help may be necessary in the long term. In a crisis you may like to contact Lifeline (Tel: 131114) which is a 24 hour counselling service which can both help in a crisis but is also available if you just want to have some emotional support. If you feel that you need to see someone face to face immediately you can arrange for mental health professionals to visit you or go to a community mental health clinic to see them. You can contact your nearest clinic by calling your nearest hospital. In Parkville the phone number to call is 1300 304 407.

Confidentiality: We will ask you not discuss what you heard in the group about each other outside the group. However we cannot guarantee that all the young people who are involved will be able to stick to this rule. We estimate that 5-10% of the videos of group discussions will appear on the online version of the program. You will have the opportunity to see what we would like to be placed online and tell us if you are happy with it.

We will not keep a record relating your name to the answers you provide to questions about your well-being, mood etc. to protect your confidentiality. We will not refer to you by name in any publications produced as a result of the study. Please keep in mind that although we do not give out information you provide to anyone if for any reason, if a court orders us to we may have to provide them with what we have. This is extremely unlikely. We will store the information we gather securely at the university for 5 years and then destroy it.

Agreeing to be involved: We will ask you to sign a “consent form” to say that you understand what being part of the program involves and that want to join us. If you are younger than 18 we will ask you to have a parent or guardian read this material and sign the form as well. Keep in mind that if you change your mind later you can stop being involved at any time. You can ask us also to take out any information you have provided or videos in which you can be seen.

Who is running this project? This project is part of a Doctor of Philosophy degree that Dr Kaveh Monshat is doing in the Centre for Youth Mental Health at the University of Melbourne. Professor Helen Herrman (of the same department) is his main supervisor. He also has supervision from Dr Jane Burns (from the Inspire Foundation who run Reachou.com) and Dr Dianne Vella-Brodrick (School of Psychology, Psychiatry and Psychological Medicine, Monash University). Dr Craig Hassed who will be doing the teaching in the program is from the School of Primary Health, Monash University. 

Researcher contact details: Dr Kaveh Monshat Tel: +61 3 8346 8259; Professor Helen Herrman Tel: +61 3 9342 2800; Dr Jane Burns: +61 3 9342 2800; Dr Dianne Vella-Brodrick: +61 3 9903 2542; Dr Craig Hassed: +61 3 8575 2205.

If you are worried that the project is not being run properly please feel free to contact the Executive Officer, Human Research Ethics, The University of Melbourne, ph: 8344 2073; fax 9347 6739.
Thank you for considering being involved in the project:

**Design and evaluation of a mindfulness training program for promoting the mental health of young people.**

*Ethics application ID no. 1034066.1*

Informed consent form

I (please PRINT name) ........................................... have read the “plain language statement” (above) regarding this study and note that my contribution may be *video recorded* and that portions of this material may appear online.

I understand that the researchers will treat all data *confidentially* and my name will not be recorded against answers I may provide to questionnaires. I accept to treat statements made by other group members confidentially. I accept, however, that an absolute guarantee of confidentiality is not possible e.g. in the exceedingly unlikely circumstance that data that had been retained is subpoenaed by a court, or requested under the Freedom of Information Act.

I further understand that involvement in the project is entirely voluntary and that I am free to withdraw at any time and ask that any unprocessed identifiable data previously supplied by me be withdrawn also.

I hereby provide my consent for participation (of myself/my child [delete as appropriate]) in this study free from any coercion and with a full understanding of what my involvement will entail.

Signature of participant:............................Dated:.....................
Name of participant:..........................................................
Signature of parent or guardian (if participant < 18 years):......................
Name of parent or guardian:......................................................
Protocol for screening interview: mindfulness training program

[This interview is intended to assess English language proficiency, presence of active significant substance use, psychotic disorder or intellectual disability which may limit potential participants' ability to engage fully with the program. Additionally potential participants will be provided with detailed information about what the face to face program will entail and the level of commitment required. The following questions will be used as a minimum while the interviewer, Dr Monshat – a practising psychiatrist working with young people currently – may ask additional questions to clarify interviewee responses. English language proficiency will be assessed as part of the interview process. Information about the face to face program will be based on the plain language statement. The interview is expected to take 30-45 minutes.]

1. Have you ever been treated for a mental illness?
2. Do you have any problems that could make it hard for you to concentrate on and follow a group discussion?
3. Do you drink alcohol more than once a week or use drugs without a prescription?
4. Would you like to ask any questions about the program as has been outlined to you [as per plain language statement which will have been discussed during the telephone interview]?
5. Based on the information provided to you [as per the plain language statement], and keeping in mind that you can leave the program at any time, do you feel that it is likely for you to be able to come to all the 6 weekly program sessions?
Below are some statements about feeling and thoughts. Please circle the one that best describes your experience over the past week.

<table>
<thead>
<tr>
<th>STATEMENTS</th>
<th>None of the time</th>
<th>Rarely</th>
<th>Some of the time</th>
<th>Often</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’ve been feeling optimistic about the future</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling useful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling interested in other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve had energy to spare</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been dealing with problems well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been thinking clearly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling good about myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling close to other people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been able to make up my own mind about things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling loved</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been interested in new things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I’ve been feeling cheerful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
A questionnaire about the ability to manage emotions

Name:    Date:

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item:

______________________________________________________________________________

1----------------------2-----------------------3------------------------4--------------------------5
almost never    sometimes     about half the time most of the time almost always
(0-10%)              (11-35%)             (36-65%)                     (66-90%)             (91-100%)

_____________________________________________________________________________________________

______ 1) I am clear about my feelings.
______ 2) I pay attention to how I feel.
______ 3) I experience my emotions as overwhelming and out of control.
______ 4) I have no idea how I am feeling.
______ 5) I have difficulty making sense out of my feelings.
______ 6) I am attentive to my feelings.
______ 7) I know exactly how I am feeling.
______ 8) I care about what I am feeling.
______ 9) I am confused about how I feel.
______ 10) When I’m upset, I acknowledge my emotions.
______ 11) When I’m upset, I become angry with myself for feeling that way.
______ 12) When I’m upset, I become embarrassed for feeling that way.
______ 13) When I’m upset, I have difficulty getting work done.
______ 14) When I’m upset, I become out of control.
______ 15) When I’m upset, I believe that I will remain that way for a long time.
______ 16) When I’m upset, I believe that I’ll end up feeling very depressed.
______ 17) When I’m upset, I believe that my feelings are valid and important.
______ 18) When I’m upset, I have difficulty focusing on other things.
______ 19) When I’m upset, I feel out of control.
______ 20) When I’m upset, I can still get things done.
______ 21) When I’m upset, I feel ashamed with myself for feeling that way.
______ 22) When I’m upset, I know that I can find a way to eventually feel better.
______ 23) When I’m upset, I feel like I am weak.
______ 24) When I’m upset, I feel like I can remain in control of my behaviors.
______ 25) When I’m upset, I feel guilty for feeling that way.
______ 26) When I’m upset, I have difficulty concentrating.
______ 27) When I’m upset, I have difficulty controlling my behaviors.
______ 28) When I’m upset, I believe that there is nothing I can do to make myself feel better.
______ 29) When I’m upset, I become irritated with myself for feeling that way.
______ 30) When I’m upset, I start to feel very bad about myself.
______ 31) When I’m upset, I believe that wallowing in it is all I can do.
______ 32) When I’m upset, I lose control over my behaviors.
______ 33) When I’m upset, I have difficulty thinking about anything else.
______ 34) When I’m upset, I take time to figure out what I’m really feeling.
______ 35) When I’m upset, it takes me a long time to feel better.
______ 36) When I’m upset, my emotions feel overwhelming.
## A questionnaire about mood, anxiety and stress

**Name:**  
**Date:**

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- **0** Did not apply to me at all
- **1** Applied to me to some degree, or some of the time
- **2** Applied to me to a considerable degree, or a good part of time
- **3** Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td></td>
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<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
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<td></td>
<td></td>
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<tr>
<td>6</td>
<td>I tended to overreact to situations</td>
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<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
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<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
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<td></td>
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<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
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<td></td>
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<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>I felt I was close to panic</td>
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<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
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<tr>
<td>17</td>
<td>I felt I wasn’t worth much as a person</td>
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<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
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</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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A questionnaire about how “mindful” you are at the moment
Below is a collection of statements about your everyday experience. Using the 1–6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I could be experiencing some emotion and not be conscious of it until some time later</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I break or spill things because of carelessness, not paying attention, or thinking of something else</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I find it difficult to stay focused on what's happening in the present</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way</td>
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<td>5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention</td>
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<td>6. I forget a person's name almost as soon as I've been told it for the first time</td>
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<td>7. It seems I am &quot;running on automatic&quot; without much awareness of what I'm doing</td>
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<td>8. I rush through activities without being really attentive to them</td>
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<td>9. I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there</td>
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<td>10. I do jobs or tasks automatically, without being aware of what I’m doing</td>
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<td>11. I find myself listening to someone with one ear, doing something else at the same time</td>
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<td>12. I drive places on “automatic pilot” and then wonder why I went there</td>
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<td>13. I find myself preoccupied with the future or the past</td>
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<td>14. I find myself doing things without paying attention</td>
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<td>15. I snack without being aware that I’m eating</td>
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Mindful Awareness Training and Education

Welcome to the MATE program, a collaboration between staff at the University of Melbourne, Monash University and Reachout.com.

We hope that you find the program of great benefit.

We are keen to find out in what ways the program may help. That’s why we will ask you to fill out these questionnaires now, at the end of the program and 6 weeks after that. Anything you say here will be kept confidential. Your name or any other details that can be used to identify you will not be revealed to anyone.

Please take care to answer all questions. We analyse these numbers and (again without any names etc.) can publish a report about them. This then helps other people running these programs around the world to learn how beneficial it is. Also it makes it much more likely that we will be able to obtain support (e.g. from schools) to offer the program to other young people in future.
Tell us about yourself...

Name: Date:

How old are you? ☐

Are you a female or a male? ☐

What is the postcode for where you live?

How many standard drinks of alcohol did you have in the last week (a regular strength stubby of beer has 1.5, spirits poured in a bar have 1 and a glass of wine has 1.5)? ☐ last month? ☐

Did you use any illicit drugs (e.g. dope or speed etc.) in the past week?

Yes ☐ No ☐ Last month? Yes ☐ No ☐

How many cigarettes did you smoke in the past week? ☐

Are you working, studying or unemployed currently (tick all that apply)?

Working full-time ☐ Working part-time ☐ Studying full-time ☐ Studying part-time ☐ Neither working nor studying ☐

What was the highest level of education that either of your parents have completed?

Middle school ☐ High school ☐ TAFE, apprenticeship or similar ☐ University degree ☐ Postgraduate degree (e.g. Master, PhD or from a professional college or association e.g. chartered professional accountant) ☐

Have you ever seen any health professionals about emotional difficulties? (e.g. counsellor, psychologist or psychiatrist or a general practitioner)

Yes ☐ No ☐ Currently? Yes ☐ No ☐

Have you ever taken a medicine for emotional difficulties? (e.g. an antidepressant, mood stabiliser, antipsychotic, anti-anxiety or tranquilizer drug)

Yes ☐ No ☐ Currently? Yes ☐ No ☐

Please tell us what you expect to gain from doing this program?
Thank you for joining us in this program. We hope that it has been of benefit to you.

We are keen to find out in what ways the program may have helped. We’d be grateful if you can fill out these questionnaires so we can compare your answers to when you began the program. Anything you say here will be kept confidential. Your name or any other details that can be used to identify you will not be revealed to anyone. **Please take care to answer all questions.** We analyse these numbers and (again without any names etc.) can publish a report about them. This then helps other people running these programs around the world to learn how beneficial it is. Also it makes it much more likely that we will be able to obtain support (e.g. from schools) to offer the program to other young people in future. We’ll give you these questions again in 6 weeks... and if you agree in a few months again and then we’re done!
Other mental health interventions undertaken during the program

Name: Date:

In the past 6 weeks:

Have you seen any health professionals about emotional difficulties? Yes ☐ No ☐
(e.g. counsellor, psychologist or psychiatrist or a general practitioner)

If so, how many times? ☐

Have you started (or continued) taking a medicine for emotional difficulties? Yes ☐ No ☐
(e.g. an antidepressant, mood stabiliser, antipsychotic, anti-anxiety or tranquilizer drug)

Please write about any other course or program you've taken to improve your well-being:


Please tell us how what you got out of the program differed from any expectations you might have had at the beginning.
Thank you for your great work, both in doing the program and filling out what may have seemed like endless questionnaires on it... this is the LAST ONE!

We are keen to find out how things have progressed in the six weeks since the program finished. We’d be grateful if you can fill out these questionnaires so we can compare your answers to when you began and when you finished the program. Anything you say here will be kept confidential. Your name or any other details that can be used to identify you will not be revealed to anyone. **Please take care to answer all questions.** We analyse these numbers and (again without any names etc.) can publish a report about them. This then helps other people running these programs around the world to learn how beneficial it is. Also it makes it much more likely that we will be able to obtain support (e.g. from schools) to offer the program to other young people in future.
Other mental health interventions undertaken during the program
Name: Date:

In the past 6 weeks:

Have you seen any health professionals about emotional difficulties? Yes ☐ No ☐
(e.g. counsellor, psychologist or psychiatrist or a general practitioner)

If so, how many times? ☐

Have you started (or continued) taking a medicine for emotional difficulties? Yes ☐ No ☐
(e.g. an antidepressant, mood stabiliser, antipsychotic, antianxiety or tranquilizer drug)

Please write about any other course or program you’ve taken to improve your well-being:

Please tell us if you’ve been practising meditation or day-to-day mindfulness tasks since the program finished, if so how often, how many minutes on average each day. Also what continuing effect on your life, since the program finished having learnt about mindfulness might be having, whether you’ve continued practising or not.
Questions in qualitative interviews

Questions and explanatory notes as approved by the University of Melbourne Ethics Committee used in the consultation (Study 1) and pilot trial (Study 2) are presented below. During each interview, wordings may have been modified in response to the particular young person’s apparent level of education and preference for formality of language.

Study 1
Questions to be used as prompts in focus group discussions, telephone interviews or web forums:

1. What aspects of the structure of the intervention and homework could be changed to make it more likely for young people to engage in these tasks?

2. What in the content of the homework could be changed to make it more attractive/likely to be undertaken?

3. How can this intervention be advertised in the recruitment phase to make young people more likely to be interested in participating while accurately reflecting the content?

4. What else could be changed about the intervention program, especially in terms of preliminary information provided to young people who have signed up to participate, that would make participant retention and full engagement more likely?

5. How can the measurement method (outcome measures used, frequency, time requirement, follow-up duration) be improved to make it more attractive and relevant to young people?
Study 2

[This interview will be held in keeping with qualitative interviewing methodology. Keeping the key theme of 'what was the participant’s experience of mindfulness' (as provided to participants in the PLS supplement) the interviewer will aim to privilege the interviewee’s own views and agenda. He will endeavour to speak as little as possible, having commenced the interview with an open question. This allows the minimization of any of his assumptions (e.g. that the program was a good or useful thing) or agenda being introduced into the interview and thus potentially biasing the interviewee’s responses. Only the two open questions as detailed below will have been defined before commencing the interview. He will only ask additional question or provide direction if absolutely necessary and only as they arise directly from interview material e.g. if an interview says, ‘This program was just like being on science camp’ and does not elaborate the interviewer may ask ‘can you please tell me what it was about the program that was like the camp’. Such questions, as illustrated by the example above will only be for clarification purposes and will not introduce new themes or go beyond the scope of the two open questions stated below.]

Question 1.

Please tell me what your personal understanding is of the ideas and practices that we have been calling ‘mindfulness’ in the program?

Question 2.

Please tell me what it has been like for you to try out these ideas and practices at home?
Mindfulness and Well-being

History of Mindfulness

- The practice of mindfulness has been applied to human consciousness for thousands of years
- Its origins are in Eastern philosophy but over the past 40 years it has taken root in western societies
- In addition to people using it daily, in forms such as meditation and yoga, it has been incorporated into many types of therapy including:
  - Mindfulness-Based Stress Reduction (MBSR), developed in the 1970s by Jon Kabat-Zinn
  - Mindfulness-Based Cognitive Therapy (MBCT), developed out of MBSR as a way to treat and prevent depression

What is Mindfulness?

- ‘Mindfulness is the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment’ (Kabat-Zinn, 2003)
- It is about training your attention to be able to rest in the present moment. Thoughts about the past and future are acknowledged without necessarily being focused on. In this way, while able to truly experience life as it happens, we can avoid being caught up in ruminating on the past or worrying about the future.
  - The word mindfulness can be used to refer to both the state of being mindful and the daily practices (e.g. meditation) that help to bring it about.

- In relation to thoughts, our minds participate in habitual thinking. This means it goes to places and thoughts that we usually think of out of habit.
- We all have automatic thoughts that our minds go to, focusing our attention on something that we may or may not want to think about simply because our minds have not learned how to focus differently.
- Mindfulness training can give you more say over where your thoughts become focused

Mindfulness Meditation

There are many different types of meditation with the two most common approaches being:
  - Concentrative meditation
Focuses the attention on the breath, an image, or a sound (mantra), in order to still the mind and minimize thoughts.

- Mindfulness meditation
  - Involves training the attention to become aware of the continuously passing sensations and feelings, thoughts and images that make up one’s moment to moment experience. Additionally an attitude of simply ‘noticing and letting be’ is cultivated towards what one becomes aware of.

- In mindfulness meditation you learn to remain aware of what is happening and what you’re feeling in that moment, whether you like it, dislike it, or are confused about it.
- You work to increase your ability to be aware and be present with the unpleasant - neither identifying with it, nor running from it.
- As you become more and more familiar with the usual patterns in your mind, mindfulness allows you to choose what your mind focuses on by interrupting its habits e.g. to put yourself down.

**Mindfulness and your well-being**
- Practising mindfulness has benefits to both your psychological health and physical health.
- Possible psychological benefits include:
  - decreased anxiety
  - decreased depression
  - increased coping skills
  - decreased irritability and moodiness
  - improved learning ability and memory
  - increased happiness
  - increased emotional stability
  - increase ability to effectively manage problems
  - improved self-esteem

- Possible physical benefits include:
  - lowered blood pressure
  - improved immune function
  - reduced physical stress responses
  - better sleep
  - better management of physical symptoms e.g. pain

**Mindfulness and Therapy**
- Due to all the benefits mindfulness has for your health, certain therapies (such as MBSR and MBCT) are incorporating it into the treatment of patients with depression, anxiety disorders, bipolar disorder and other mental health issues and physical problems.

**Who do you know that practises Mindfulness?**
• Many celebrities are starting to look into meditation to lower their stress and increase their happiness
• Madonna, Richard Gere, Sting, Halle Berry, Goldie Hawn and Danny Glover are just a few

Where can you go?
• If you are interested in learning more or participating in a mindfulness program here are some places to check out:
  o http://mindfulnesscentre.com/public.html

• Reachout is currently setting up a mindfulness training program of its own. We would love to hear from you if you want to help us design it. Click here to find out more: Mindful Awareness Education and Training (MATE) program.

Additional Resources
• http://mindfulnesscentre.com/mindfulness.html
• Know Thyself by Craig Hassed
• Full Catastrophe Living by Jon Kabat-Zinn
Appendix E: Papers arising from this project

An article based on Study 1 was published online in Health Promotion International in 2011 and in print in 2012. This is a peer reviewed journal with an impact factor of 1.9 (2011). The article focused on the contribution of Study 1 to online program design. This was thought to be a unique aspect of the study and thus of greater likely interest to readers (e.g. vs. previous literature on optimal characteristics of face to face programs for young people).


An article based on Study 2a was submitted to Health Promotion International in Oct 2011. It was declined after 9 months in peer review and is currently being rewritten with a view to submission to an alternative journal.

An article based on Study 2b was submitted to the Journal of Adolescent Health (impact factor 3.3, 2011) in April 2012 and was accepted later that year and published online.


Only the first and third article have been included in this appendix.*

* This is in keeping with the University of Melbourne PhD Handbook which stipulates that only papers published or accepted for publication may be included.
Mental health promotion in the Internet age: a consultation with Australian young people to inform the design of an online mindfulness training programme

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¹Orygen Youth Health Research Centre, University of Melbourne, Locked Bag 10, Victoria 3052 Australia ²School of Psychology and Psychiatry, Monash University, PO Box 197, Caulfield East, Victoria 3145, Australia
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SUMMARY
Mindfulness training (MT) has been shown to lead to significant improvements in psychological distress and emotion regulation skills. The Internet has many advantages as a medium for building emotional skills in young people. The aim of this study was to involve young people in designing an online MT programme. A draft programme was initially designed based on a review of the literature and an established face-to-face programme for medical students. Twenty young people were then recruited through online advertising and 13 (age 16–26) interviewed. They were asked to comment on how useful, easy to use and enjoyable they found the proposed programme and how the draft version and its planned evaluation strategy could be improved. Interviewee responses were independently processed by two of the authors within a qualitative thematic analysis paradigm. The results showed that young people were eager to engage with the design of this health promotion programme and provided valuable input. All interviewees believed that young people would find the programme desirable. They provided a variety of suggestions about how training structure and content could be improved, how best it could be evaluated and how young people could be encouraged to engage with and complete the programme. It thus appears that online MT is a feasible mental health promotion strategy for young people and that it can be evaluated in a controlled trial. The result of this consultation process was the Mindful Awareness Training and Education (MATE) programme, which has been detailed.

Key words: mental health promotion; mindfulness; Internet; young people

BACKGROUND
A focus on mental health and particularly individual mental and emotional skills has come to occupy an increasing priority within the overall health promotion effort in recent years (Patel et al., 2010). A participatory approach where young people are involved in optimizing the effectiveness of health promotion activities is a relatively new phenomenon that has increasingly been shown to have utility and feasibility (Powers and Tiffany, 2006). Young people or transitional age youth, variously defined as 12 or 14–25, form a critical target group for mental health promotion (Rowling and Walker, 2002). This argument is often made citing...
statistics about the high incidence rate of mental disorder in this age group [e.g. >75% of all mental disorders begin before age 25 (Kessler et al., 2005)]. Keeping in mind broader goals of health promotion such as enabling individuals to realize optimal health and cope with adversity (Heggenhougen and Quah, 2008) it is important that efforts are made not only to deal with illness specifically but also to foster the development of individuals’ emotional skills.

Why mindfulness?
A key developmental challenge in young people is self regulation of emotions (Institute of Medicine, 2009). Adolescents with poor emotional control are twice as likely to develop depression as they grow into young adulthood (Patton et al., 2008). Emotional control thus appears to be a key mediator accounting for the rise in emotional difficulties or diagnosable mental disorders correlated with pubertal stage in adolescents (Patton et al., 2008).

Mindfulness training (MT) enhances individuals’ ability to be aware of their feelings and choose how intensely to engage with them (Brown et al., 2007). It is thus a particularly effective way to enhance the capacity of young people to regulate emotions (Chambers et al., 2009). This may help young people negotiate the vicissitudes of development and possibly lower the incidence of depressive or anxiety symptoms (Burke, 2010).

Mindfulness has been defined as ‘the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment’ ([Kabat-Zinn, 2003], p. 145). Greater awareness and equanimity, as paths to well-being, while emphasized in a great majority of Eastern and Western spiritual and philosophical traditions, comprise a central feature of Buddhist philosophy (Hassed, 2006). Mindfulness is a psychological trait that occurs without any training to a greater or lesser degree in all people and grows naturally with emotional maturation (Brown et al., 2007). As such, MT can be seen as a way of accelerating a normal maturation process (Mace, 2008).

Initially empirical research focussed on clinical samples and demonstrated, in the past three decades, an association between mindfulness meditation practice and mental and physical health disorders such as chronic pain, cancer, depression and anxiety in adults [reviewed in (Brown et al., 2007)] and anxiety, ADHD and PTSD in young people [reviewed in (Burke, 2010)].

In the 1980s and 1990s, empirical research in MT was severely hampered by small sample sizes, the use of limited or non-standardized measures, the lack of control groups or fidelity checks and an absence of blinding of assessors (Bishop, 2002). In parallel with an explosion in the sheer number of studies, improvements in methodological rigour have also occurred (Chiesa and Serretti, 2009a; Chiesa and Serretti, 2009b).

Recently an increasing number of studies have reported benefits in measures of stress, symptoms of distress and emotion regulation ability in healthy adults [reviewed in (Chiesa and Serretti, 2009a; Chiesa and Serretti, 2009b)] and adolescents or young adults (Napoli et al., 2005; Wall, 2005; Saltzman and Goldin, 2008; Broderick and Metz, 2009; Campion and Rocco, 2009; Hassed et al., 2009; Huppert and Johnson, 2010). MT may yet prove to have its most powerful role as a tool in mental health promotion since: (i) it enhances skills in dealing with all experience, not just the symptoms of an illness and (ii) with the exception of intensive multi-day silent retreats—when undertaken by person with a fragile mental state—, there appear to be no adverse effects associated with MT (Haruki and Kaku, 2000; Mace, 2008). While programmes currently exist that aim to improve emotional regulation through means other than MT, they tend to be based on therapeutic models (esp. CBT) originally developed for ill populations which limits their applicability to the general population (Smyth and Arigo, 2009).

Engaging potential users in Internet-based health promotion programme design
Health promotion is more effective when the population of interest is engaged in programme design (Stacey and Herron, 2002) and this is particularly so where young people are concerned (Australian Research Alliance for Children and Youth, 2009). Professionals are faced not only with the challenge to make programmes consumer-friendly but also youth-friendly (Powers and Tiffany, 2006).

There is a surge of interest currently in innovative modes of service delivery considering
only one-third of the 20% of Australians who suffer mental illness in any 1 year seek face-to-face mental health care (Slade et al., 2009). The Internet has proved to be an effective tool for building individual skills of interest to the mental health promotion effort (Lintonen et al., 2008). It provides a setting for the delivery of mental health interventions that is both relatively cheap and easily accessible (Christensen, 2007). Young people report that using the Internet to obtain information and support helps to dissolve some important barriers to seeking help such as stigma and loss of privacy (Burns et al., 2007). Internet-based health promotion for young people is both uniquely suited to and stands to gain significantly from a participatory research methodology (Flicker et al., 2008).

To our knowledge there is no current example of an online MT programme designed specifically for young people. K.M. initially designed a draft model, the Mindful Awareness Training and Evaluation (MATE) programme, which we aimed to improve through consultation with young people in this study and subsequently to offer and evaluate via Reachout.com a youth-specific mental health promotion space. Between going live in 1998 and 2007 Reachout.com had recorded 7.3 million unique user visits (Burns et al., 2007). Fifty percent of Australian young people had heard of Reachout.com by 2009 and 80% of young people who had used the website found it helpful and would refer a friend to it (Burns et al., 2007). Following successful translation of the Australian model in Ireland, a US version became available in 2009. Involving young people in the design and evaluation of the website and all programmes featured thereon has been a key principle underpinning the development of Reachout.com throughout its history (Burns et al., 2007).

The programme was deliberately simple in design both to improve flexibility and usability (Nielsen, 2000) and to limit the need for specialized human resources and minimize costs. Core characteristics were based on a review of the literature and an established face-to-face programme for medical students [detailed in (Hassed, 2006)]. Using this programme as a cornerstone of a health enhancement course, Hassed et al. showed significant improvements in the psychological subscale of the WHO Quality-of-Life instrument (within group effect size of 0.18) and on the depression, hostility and global severity index subscales of the Hopkins symptom checklist (Hassed et al., 2009).

According to the Technology Acceptance Model (Davis et al., 1989) both the perceived usefulness and ease of use of a system or programme are likely to influence users’ engagement. This model has been revised in recent years to include perceived enjoyment as an intrinsic motivational influence (Legris et al., 2003). There is evidence that usefulness and enjoyment may explain most of the variance in participant engagement (Lee et al., 2005).

We aimed in this study to obtain views from young people about all three aspects (viz. usefulness, ease of use and enjoyment) of the proposed MATE programme as well as the planned evaluation process. Based on an analysis of this input, we aimed to devise a training programme likely to be acceptable to young people and effective in improving their mental health and well-being.

METHODS

An advertisement about the study was placed on the Reachout.com website for 4 weeks in November 2009. Twenty-one young people initially responded to the advertisement via email, 13 of whom remained in contact and agreed to be interviewed. An interview, rather than focus group format, was chosen as we intended to recruit participants Australia-wide making travel costs prohibitive. Ten participants were ultimately interviewed by telephone and three face-to-face. Interviews were 30–90 min in duration.

The draft structure for a 6-week training programme was developed as discussed above and a simple demonstration website prepared. The draft structure (noted briefly in the Table 1) was sent to potential interviewees by email and again described at the beginning of interviews. Interviewees also viewed the demonstration website for the MATE programme during the interview.

Interviews included five open questions phrased as ‘In what way can the program’s [subject of interest] be improved’? Key subjects were: structure, delivery mode, homework, advertising plan and enhancement of the rate of young people accessing the site and participant

Downloaded from medico.clinic.org by guest on March 22, 2011
Table 1: Mental health promotion in the Internet age: a consultation with Australian young people to inform the design of an online mindfulness training programme

<table>
<thead>
<tr>
<th>Domain</th>
<th>Draft design presented to participants</th>
<th>Changes and additions based on participant suggestions</th>
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<tbody>
<tr>
<td>Weekly online education</td>
<td>Duration: 6 weeks</td>
<td>5–10 min ‘talking head’ streaming video to introduce key topics for the week</td>
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<td>Core information presented weekly in video format</td>
<td>5–10 min streaming audio guided meditation exercise</td>
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<td>Videos comprise an edited recording of a live training group</td>
<td>5–10 min videos of group discussion of successes and difficulties in gaining mindfulness skills</td>
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<td>5–10 min closing talking head video (including a recap of week’s learning, practice tasks for the coming week and a brief guided meditation)</td>
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<td>Downloadable PDF file summarizing the week’s key teaching content, which may be used as an alternative or adjunct to videos for learning or reviewing information</td>
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<tr>
<td>‘Timeout’ practice</td>
<td>Meditation at home in between weekly sessions supported by downloadable audio instructions</td>
<td>Downloadable MP3 of meditation instructions for twice per day practice with length increasing gradually from 5 min in week 1–20 min in week 6</td>
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<td>Everyday mindfulness ‘tasks’: a variety of ways of remembering to bring present-moment-focused awareness to routine activities such as walking to school, doing homework or socializing; a new task presented each week. To be suggested in final video, at the end of the PDF file and briefly mentioned at the end of that week’s home meditation instructions</td>
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<tr>
<td>Online discussion forum</td>
<td>Set up to allow sharing experience of the programme and to ask questions from other participants or facilitator.</td>
<td>A bulletin board hosted on Reachout.com itself (rather than the study website) with access restricted to study participants (both aspects seen as improving sense of trust and privacy). One of the programme authors experienced in teaching mindfulness (K.M.) to review responses and questions and contribute to the discussion on a daily basis during weekdays.</td>
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<tr>
<td>Evaluation</td>
<td>A randomized, wait-list controlled trial</td>
<td>Quantitative: online Likert scale outcome measures taking a maximum of 15 min to complete</td>
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<td>Key outcome domains: depressive or anxious symptoms, subjective well-being and sense of functioning and mental skills (emotion regulation ability and mindfulness)</td>
<td>Qualitative: (i) feedback about experience of undertaking the programme and how it may be improved in future versions (ii) feedback about engagement with and experience of the construct of mindfulness and associated practices independent of this particular course structure</td>
</tr>
<tr>
<td>Advertising</td>
<td>Qualitative evaluation</td>
<td>Qualitative: (i) feedback about experience of undertaking the programme and how it may be improved in future versions (ii) feedback about engagement with and experience of the construct of mindfulness and associated practices independent of this particular course structure</td>
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<td>Via a link on Reachout.com</td>
<td>Additionally to include: links to the programme on websites of youth-specific organizations; presence on Facebook and Twitter; personal attendance at educational institutions and public events (e.g. music festivals) where young people are likely to be present</td>
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</table>

How the mindful awareness training and education (MATE) programme developed from draft to the final version by incorporating interviewee comments.

*Participants were provided with two pages of text elaborating the draft design and a discussion of this, to ensure understanding, formed the first 5–15 min of the interview. Only a brief outline has been provided in this column in the interests of brevity.

*See ‘Results’ for further details of additions, changes and suggestions.

engagement and retention in the programme. A semi-structured format was chosen to allow participants ample room to suggest any spontaneous or original ideas not triggered by above standardized questions. This also allowed, as increasing numbers of participants were interviewed, additional unscripted questions aimed at deeper exploration of new ideas suggested by
initial interviewees. Little new information was obtained in interviews subsequent to the first nine indicating data saturation.

Notes taken during interviews were manually analysed by one of the authors (K.M.). Initially a matrix was devised to summarize and group various interviewees’ responses according to key areas of enquiry (i.e. structure, homework etc. as above). Based on a review of this matrix, a large number of initial categories were delineated. These were condensed into a small number of core themes following further analysis. Raw interview notes were then re-analysed to ensure that categorized themes comprised a complete reflection of issues raised by participants and to clarify how frequently interviewees had emphasized each theme. The three lengthiest interview notes were independently coded by one of the co-authors (D.V.). Comparison of data categories identified by two authors revealed 86% agreement. It was deemed unnecessary to have multiple coders on all interview notes.

Approval for this project was obtained from the University of Melbourne Human Research Ethics Committee.

RESULTS

Interviewee characteristics
Participants were aged 16–26 (average 22). Sixty percent were female. Fifty percent were studying full time and the rest were in full or part-time employment. Fifty percent had had some previous experience of MT. None reported an extensive background in meditation practice (i.e. meditation on most days for a number of months). Fifty percent had previously been diagnosed with a mental illness [major depressive disorder (6), anxiety disorder (4), bipolar disorder (2), PTSD (1)—all reported currently stable]. All participants denied a current substance use disorder.

Desirability of an online programme and ideal appearance, structure and content
All interviewees commented that an online mindfulness programme would be of interest to their peers. They suggested that many young people would prefer it to a live programme as (i) the latter would take too much time; (ii) it would involve travelling to where training was held which would be a ‘hassle’; (iii) ‘the net’s where we spend all our time anyway’ and (iv) ‘if you’re all anxious you wouldn’t want to sit with a group of people’. They saw Reachout.com as a ‘brand young people trust’ which would lend authority to a programme presented thereon.

‘Look and feel’ of the website and structure of training modules
Male interviewees were concerned that the demonstration site, coloured a pale green and decorated with flowers, would not be appealing to young men. They suggested using darker, bolder colours (e.g. black, yellow and dark blue). All interviewees suggested not having pictures of meditators on the site as it may communicate a religious overtone. Instead they suggested pictures of young people ‘being happy, being active and having fun’ perhaps enhanced with online animation. Two interviewees encouraged the use of slang and mobile telephone text language (e.g. abbreviating ‘you’ to ‘u’) especially in headings.

All interviewees were in favour of information delivery in video format rather than through text or audio. Although suggesting ‘as little text as possible’ (2–3 sentences in each page) on webpages they asked that teaching material be available as a downloadable PDF file as well as videos. This could allow participants to quickly review the teaching content for the week if they wished.

All interviewees preferred a series of short videos each week rather than one long presentation. Reasons given were: young people have a ‘short attention span’ and are unlikely to remain attentive to a video for more than a few minutes; young people tend to do several things at once when online (e.g. chat rooms, Facebook, instant messaging etc.) and as such are unlikely to continue viewing a video if it interferes with this process and; it allows them to progress at their own pace (e.g. take breaks between videos if needed) to go back and watch each section separately if they so desired.

To avoid boredom they suggested no more than four videos each week with a maximum duration of 10 min each (three suggested a maximum of 5 min). Two interviewees commented that participants viewing latter weeks of the programme may ‘cope with longer videos’ as (i) they were obviously committed and (ii) their
ability to attend to material may have improved through the mindfulness practices they have been engaged with.

One interviewee suggested that the whole week's page not be longer than one mouse scroll long. Another suggested videos are placed in a horizontal line (e.g. two at a time) rather than vertically. Four interviewees suggested using 'progress bars' at the top of each page, whether a teaching module or outcome measurement, so as to orient participants, create a sense of fulfilment and encourage completion.

‘Timeout’ practice
All interviewees advised against the use of the word ‘homework’ as it may remind participants of their university or school homework and thus be off putting. Suggested alternatives were ‘home practice’, ‘meditation practice’, ‘rest’ or ‘timeout’.

Interviewees suggested a maximum of 5 min of daily meditation practice not more often than twice a day. They were comfortable with meditation instructions being provided in downloadable MP3 format.

To make home practice engagement more likely three interviewees suggested asking participants to practice at the same time every day perhaps ‘pegging it’ to a routine activity (e.g. after brushing their teeth in the morning). Two interviewees suggested asking participants to log their home practice and record any difficulties experienced with it in a diary. Another suggested drawing a parallel with the ritual and regularity of ‘when you’re on a medication’ when describing the approach to practice.

Retaining participants
A consistent message from all interviewees was that any form of feedback or communication from the programme was likely to improve retention. In addition to forms of feedback already mentioned, email (even if automated and using a ‘no-reply’ address), and text message reminders, were thought to be likely to be helpful without being intrusive.

All interviewees agreed that an online forum, which enabled discussion about their programme experiences, was highly desirable and was likely to boost retention significantly through: clarifying aspects of the teaching; sharing and overcoming difficulties with practice; and encouraging participants to remain engaged and complete home practice sessions.

Sunday morning was suggested by two interviewees as a suitable time for each weekly module of the programme to become available as ‘young people check their email and Facebook on a Sunday afternoon.’

Another interviewee suggested phrasing the initial registration step as an ‘application process’. She suggested that this would communicate the serious nature of their undertaking and encourage young people to persevere.

Two forms of reward were suggested by interviewees to ensure programme and outcome measure completion. First by highlighting the opportunity to benefit other young people a sense of ‘doing good’ and ‘being part of a bigger thing’ may be created. Interviewees suggested that it be emphasized early on that this was a world first programme of its kind and that a future roll out of the programme would be based on the experience of participants in this pilot version.

Second physical rewards were suggested in three forms: (i) a certificate for those who complete the programme and outcome measures which may be a desirable inclusion in resumes of participants who may be engaged in mental health or community studies or careers (ii) a token reward that all programme completers and all who finish all three rounds of outcome measures would receive (e.g. a Reachout.com arm band or sticker) and (iii) a prize draw for items of monetary value.

Interviewees commented that a higher chance to win small prizes was likely to be more motivating than a small chance to win large prizes. Suggested prizes were: movie vouchers; vouchers for electronics and music stores (esp. ones which had an online purchase option); music and application download credits; mobile telephone call credits; event ticket credits and driving lessons.

Evaluation method
All interviewees concurred that proposed demographic data and assessment domains (positive mental health, symptoms of ill health and mental skills) were appropriate and likely to seem relevant to participants. One interviewee suggested additional functional items to capture such aspects as ‘eating pattern, having a routine.
they are happy with, and being able to catch public transport'.

All preferred online to mailed questionnaires. Completing outcome measures should take no more than 15 min according to half of the interviewees, while the other half suggested that any measurement would be problematic: 'When I was doing Moodgym [an Australian online depression treatment resource] it was 50,000 questions and by the end I said stuff like: people get bored after 5 min and... they'll just tick at random'.

One interviewee suggested dividing questions into sections (e.g. titled ‘positive stuff’ etc.) to make the task less daunting. Three interviewees suggested providing brief personalized feedback about scale scores and graphs showing changes at follow-up assessments.

One interviewee suggested that participants be asked to log how much practice they had done and how their mood had been each week before viewing videos. He commented that this may provide useful data and encourage participants' progress in the programme especially if it was followed by an automated message of encouragement.

All agreed that young people were likely to be eager to provide qualitative feedback about their experience of the programme. They emphasized that the plan to devise a future, improved version of the programme based on their feedback be highlighted at the outset. One interviewee suggested asking, 'What are the things that have changed in your life since you began the program?' upon completion to capture any adverse or stressful life events. Two were concerned that random allocation was likely to deter many potential participants but suggested that a waitlist rather than non-intervention control model would mitigate this effect somewhat.

Advertising and recruitment

Four interviewees suggested avoiding any reference to ‘spirituality’ or even ‘meditation’ as they might think it is some spiritual bull...'. They suggested instead focusing on the likely benefits of the programme. Suggested terms were: ‘stress reduction’; ‘managing procrastination’; ‘getting your anxiety down’; ‘stop stressing out’; ‘relieve the stress of everyday life’; ‘relieve the pressure of everyday life’; ‘increase your happiness’; ‘learn to listen to yourself’ and ‘become aware of your reactions’. One interviewee advised caution in using references to stress or ‘stress management’ as in his view potential participants were already (especially in educational settings) ‘bombarded’ with tips on reducing stress. Aside from formal avenues of advertising one interviewee suggested the study have a Facebook and a Twitter presence. One interviewee suggested a video of a young person who has had MT previously speaking about the benefits of the programme on the website homepage.

Potential problems envisaged by interviewees

Ten interviewees commented that although the idea of learning mindfulness skills is likely to appeal to many young people, persevering in the programme to the end and completing home practices were likely to prove difficult. One interviewee pointed out that young people may be reluctant to undertake the programme because of concerns about privacy (e.g. when using a family or other public computer).

An outline of the MATE programme informed by input from young people

The brief draft MATE programme originally presented to interviewees was refined and elaborated based on the aforementioned input as noted in the Table 1. All suggestions outlined above were incorporated into the design of the website, evaluation plan and advertising activities (though not all are detailed in Table 1 for conciseness). The following were exceptions: omission of references to ‘meditation’ and ‘stress’; phrasing initial registration as an ‘application’; limiting outcome measures to take no longer than 10 min to complete (suggested by half); including functional outcome measures beyond what is captured in the assessment of subjective well-being and personalized feedback regarding scale scores and programme progress. The rationale for exclusion is discussed below.

DISCUSSION

In this study, a group of young people were interviewed to help inform the design, recruitment and retention strategy as well as the evaluation plan for an online mindful awareness
training and education (MATE) programme. Interviewees commented that such a programme was likely to be well received by young people and offered an extensive range of suggestions for improvement centred around the following themes: 'look and feel' of the webpage; information delivery medium and pattern; provision of feedback to participants; making homework practical and appealing; volume and composition of outcome measures and qualitative enquiry; tailoring advertising material and avenues to young people and strategies for retaining participants in the programme.

Formative feedback has been an integral part of programme design in the education setting since the 1960s (Van den Akker et al., 1999). Its use in health promotion has been a later development (Dehar et al., 1999). This is especially so where young people are concerned (McGraw et al., 2000). Empirical evidence has only recently begun to emerge that obtaining and implementing such feedback leads to improvements in programme outcomes (Brown and Kiernan, 2001).

Nonetheless, in youth-specific research, there is a strong drive to involve young people from the very earliest stages of intervention development (Stafford et al., 2003). This involvement is often within the bounds of an adult agenda, distinguishing it from true youth participation involves young people deciding on the agenda itself (National Children’s Advisory Council, 2009). Consultation, of which this study is an example, entails, by its nature, a balance of power biased towards adults: they determine the questions to be asked and decide what to do with the information (National Children’s Advisory Council, 2009).

Notably, in a study exploring the views of children and young people about the consultation process, Stafford et al. found that young people saw this form of participation as very valuable (Stafford et al., 2003). They suggested that the process should be: inclusive of a wide variety of young people; motivated by a genuine interest in making use of their views; have a clear purpose that is well communicated to young people and is respectful of young people’s role as making an important contribution (Stafford et al., 2003).

We used a variety of methods to reduce the imbalance engendered in a consultation approach: provision of a minimal amount of draft content so as to ‘lead’ interviewees as little as possible; a minimum number of standardized questions with an open format and allowing flexibility in responding to material provided by interviews by using additional, unscripted clarification questions. We found that face-to-face interviews provided richer and more detailed data than telephone interviews (held with participants geographically distant from researchers). Participants appeared eager to engage in the process and required little encouragement to elaborate. Additionally, none reported feeling tired, requiring a break or termination of interview.

A limitation of this study may be its relatively small sample size. This is mitigated by the fact that suggestions became repetitive after the ninth interview, where we concluded that data saturation may have been reached. A contributor to relatively early saturation may be the possibility that the draft programme characteristics (Table 1) restricted the range of suggestions that occurred to them or that they saw as relevant. Another limitation, related to the recruitment via Reachout.com, is that participants may not be representative of the general youth population: they are clearly interested in accessing mental health information online and also in programme development.

A common challenge in making use of consultative feedback is the fundamental tension between what a health promotion professional or researcher may feel is important to include in a programme (e.g. randomization) and what potential recipients may desire. Negotiating differences may be particularly difficult when initial consultation is held, as in this study, without participants having actually experienced the programme in full and understood its characteristics and rationale experientially (e.g. regarding sustained meditation practice if attentional skills are to be improved). A balance should ideally be struck between respect for the need for autonomy and the self-knowledge that a chosen target population brings and ‘expert’ knowledge based on previously available evidence of what works and what does not (Castro et al., 2004). Using a blueprint for interviews, in the form of an intentionally brief draft (Table 1), allowed us to ‘insist’ on some key aspects, which we thought were necessary (e.g. practice between teaching sessions). Also we chose not to follow some suggestions to ensure accurate and ethically sound communication to
potential participants and effective programme evaluation: that words such as ‘meditation’ or ‘stress’ be omitted from advertising; that registration is phrased as an application process; and that questionnaires not take >10 min to complete (versus the other half of participants who suggested a maximum of 15 min).

Some suggestions could not be incorporated into the final programme design as the software costs would have been prohibitive: personalized automated feedback based on outcome measure scores; automated reminders to do ‘timeout’ practice; and online animations. Additionally, some suggestions from participants were in conflict with others, which meant compromises had to be made in incorporating them. For example, minimizing the number of questions asked during outcome measurement was unanimously agreed on. Nevertheless some participants suggested additional items to be added to the already broad range of domains they had felt was relevant.

An ideal alternative consultation study design would perhaps involve interviews with a group of young people with extensive personal training in mindfulness or as mindfulness educators. Such a group could then be presented with no draft plan at all but simply with the question: ‘How would you design an online MT program for young people?’ This exercise was not undertaken in this study as recruiting a sufficient number of young people with extensive personal experience in this area was not deemed possible. Additionally, interview feedback may be enriched had we circulated a summary of the results back to participants and conducted a second round of interviews. We aim to redress these issues in a detailed qualitative study planned as part of the evaluation of the online MATE programme once it has been finalized and delivered based on the results of this initial consultation.

CONCLUSIONS

This study demonstrated that young people were enthusiastic about contributing to the design of an Internet-based health promotion intervention intended for the use of their peers. Their contributions were rich in breadth and detail and had a major impact on the design and the strategy for recruitment and evaluation of the eventual programme: Mindful Awareness Training and Education (MATE).

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"A Conscious Control Over Life and My Emotions:" Mindfulness Practice and Healthy Young People. A Qualitative Study

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Keywords: Meditation; Adolescent; Young adult; Qualitative research

ABSTRACT

Purpose: Although quantitative benefits of mindfulness training have been demonstrated in youth, little is known about the processes involved. The aim of this study was to gain a detailed understanding of how young people engage with the ideas and practices known as mindfulness using qualitative enquiry.

Methods: Following completion of a six-week mindfulness training program with a nonclinical group of 11 young people (age 16–24), a focus group (N = 7) and open-ended interviews (n = 5) were held and audio-recorded. Qualitative data, collected at eight time points over three months from the commencement of training, were coded with the aid of computer software. Grounded theory methodology informed the data collection process and generation of themes and an explanatory model that captured participants' experiences.

Results: Participants described their daily lives as beset by frequent experiences of distress sometimes worsened by their unhelpful or destructive reactions. With mindfulness practice, they initially reported greater calm, balance, and control. Subsequently they commented on a clearer understanding of themselves and others. Mindfulness was then described as a "mindset" associated with greater confidence and competence and a lessened risk of future distress.

Conclusions: Participants demonstrated a sophisticated understanding of and engagement with mindfulness principles and practice. Their reported experience aligned well with qualitative research findings in adults and theoretical literature on mindfulness. An encouraging finding was that, with ongoing mindfulness practice and within a relatively short time, participants were able to move beyond improved emotion regulation and gain greater confidence in their ability to manage life challenges.

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Mindfulness has been used to "describe a theoretical construct (mindfulness), the practice of cultivating mindfulness (e.g., meditation) or a psychological process (being mindful)" [7]. The latter may be operationalized as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" [8]. This may at first appear to be simple and thus easily achievable (e.g., 8–12), but it is not discussed here because of methodological and reporting limitations. Only two studies of adolescents or young people (defined as ages 15–24 by the World Health Organization [18]) are available and are outlined briefly here. Themes identified in articles are denoted in italics. Following an eight-week MT program for socially disadvantaged and HIV-infected young people, 10 participants (ages 13–19) were interviewed regarding their experience (under-taken and reported by both Kerrigan et al [19] and Sibinga et al [20]). External stressors and unhelpful reactions to stress were prevalent before the program. Perceptions of and experiences with mindfulness centered around increased attentiveness to moment to moment experience, a more open-minded, nonjudgmental attitude as well as calmness and reduced stress. As a result of practice, shifts in perspective, for example, in relation to having a physical illness and positive changes in coping with daily stressors, for example, through immediately noticing and letting go of unhelpful emotional reactions occurred [19,20].

Dellbridge and Lubbe [21] conducted a single-participant case study involving observation of MT sessions, interviews, diaries and artistic expression by a 17-year-old female. Psychiatric history or reason for referral for MT was not reported. The participant’s experience was compatible with the following a priori themes associated with mindfulness derived from theoretical literature: present-centered attention and awareness, attitude and heart qualities (e.g., compassion), self-regulation, universalism of mindfulness (i.e., that it is not bound to a particular spiritual tradition but a fundamental human tendency), and mindfulness (i.e., greater awareness of the wandering mind in daily life) [21].

This study aimed to extend the limited available qualitative literature involving young people by using grounded theory methodology [22] to develop an integrative explanatory model of their understanding and experiences of mindfulness practice.

Methods

Mindfulness training program

Characteristics and development of the MT program employed and its initial evaluation are detailed elsewhere (Monshat, 2011, in peer review). Briefly, it involved six weekly 1.5-hour sessions facilitated by C.H., an academic primary care physician with more than 20 years’ experience in teaching mindfulness. Meditation practice was supported between sessions through audio-recorded instructions and handouts outlining ways to apply mindfulness skills to day-to-day life.

Recruitment

As well as posters at a local university campus and contact with welfare officers in local high schools, an advertisement was placed on a youth mental health promotion website (Reachout.com). MT was advertised as a way to reduce stress and the program pitched at all young people whether or not they experienced a clinical disorder.

Participants

The MT program included 11 young people (ages 16–24). Eight participants completed the program. A focus group was held with seven program completers. Five participants also volunteered to attend private individual interviews. All participants were engaged in full-time study or employment. None had practiced meditation regularly before. Three participants had previously been diagnosed with depression, including one who had received antidepressant medication. All reported being well before the MT program and were not receiving any form of ongoing treatment.

Data collection

One week after program conclusion the first author (K.M.) facilitated a semistructured focus group (60 minutes, n = 7). Open-ended interviews (30–40 minutes, n = 5) were then held by K.M. between two to seven weeks after program completion. Transcripts were prepared from audio recordings of the previously mentioned interviews, with one exception resulting from a technical problem. These were supplemented by field notes. Written responses to questions about program expectations and outcomes were collected before program commencement, weekly for six weeks and again six weeks after completion. An online, study-specific questionnaire was designed and distributed to all program completers after the focus group to enhance trustworthiness of qualitative data analysis and extend the data obtained.

Data analysis

The data collection and analytical process was informed by grounded theory [22]. As data became available, emergent themes and a likely model that could capture and integrate participants’ experiences were recorded and reflected on to
inform each subsequent interview and other forms of data collection. A balance was struck between detailed analysis prior to subsequent interviews, the timing of participant availability for interviews, and the necessity of capturing data close to the MT experience. After completion of all data collection activities NVIVO-9 software (QSR, 2010) was used to code transcripts and written responses by K.M. As a check of coding validity, J.N. independently coded a portion of four transcripts and suggested emergent themes. There was a more than 90% correlation between coding by K.M. and J.N. Fifty-nine initial categories (i.e., data groupings) were derived. Analytic iterations led to an eventual six themes that could be unified into a main storyline, or core category [22].

Approval

The study protocol was approved by the Human Research Ethics Committee of the University of Melbourne.

Results

The main storyline, which aims to capture the experience of participants in this study, is presented in Box 1.

An explanatory model of young peoples’ experience with mindfulness

Participants’ experience appeared to progress through three phases as illustrated in Figure 1.

Phase 1 represents young people’s experience before exposure to mindfulness practice. Emotional distress was common and there was a tendency to react to emotions in ways that were often unhelpful, for example “shutting them [emotions] out or overreacting.” This could create a vicious circle whereby reactions to challenges led to greater stress or a worsening of the stressful situation. Initially, in phase 2, young people engaged with mindfulness practice as a “stress management technique”: “I was able to relax on a lot of things I used to be so uptight about.” With ongoing practice, they began to realize that even when they could not control situations they had some control over emotional responses. Finally, in phase 3, with ongoing mindfulness practice, greater clarity of mind, self-reflection, and self-understanding were facilitated. This “changes how you operate and perceive the world,” creating greater “confidence” and a sense of being “competent” and “a part of the world.” By “bringing that [mindfulness] into your everyday life,” the same challenges and stressors that fueled the discomfort in phase 1 were now dealt with differently. The vicious circle above was countered by “this fantastic cycle of identifying stress, handling it, ... so there is less stress to identify and handle.”

Box 1. Main storyline reflecting data from interviews, focus group, and text feedback

Young people “freak out” in response to the challenges they face. They initially relate to mindfulness practice as a “soothing drug” but soon discover that it is “a mindset, not just a stress-management technique” and that it “allows you to have that confidence in yourself” and “made you more competent” to meet future challenges.

Figure 1. Relationship between phases and themes of participants’ experiences with mindfulness.

An overview of phases along with a summary of themes is presented in Table 1. Themes are then elaborated in detail below with reference to participants’ own words.

Phase 1: Distress and reactivity

“Freak out:” Participants associated being a young person with emotions “being all extreme all the time” and the tendency to “change moods in a split second.”

“I was really, really stressed. I was actually quite distressed about being, you know, being an adolescent, that’s what adolescents do. Freak out.”

A “self-doubting, self-questioning voice” was often present in this state.

“You’re always saying to yourself, Am I doing the right thing? Or I’d put myself in someone else’s shoes and I’d think if I was looking at myself I’d think I was lazy and it’s a kind of self-hate cycle and you get that anxiety as well.”

Interpersonal and academic challenges were the most frequently identified sources of stress. One participant noted that before MT “I was frequently losing my temper at my family” and spoke about the difficult emotions experienced when “friends have been spreading rumours.” Another spoke about nagging worries regarding tests “particularly ‘If I fail, if I fail.’”

“Overreacting:” Participants associated “freak out” with “emotionally responding or being selfish or destructive.” This involved “being caught up... like when you get more emotional reactions, as opposed to being considered and thought out in actions that you take when you have a clear mind.” Reactions were reported to occur internally whereby intense or unpleasant emotions were dealt with by “shutting them out” or externally through “overreacting” or being “socially destructive” that, aside from creating greater distress, could worsen the originally stressful situation.

Phase 2: Gaining stability

“Relaxing:” Participants reported that initially mindfulness practice was simply “relaxing:” “I feel more stable... there's
Table 1
Phases and themes defining young peoples’ experience of mindfulness

<table>
<thead>
<tr>
<th>Phases</th>
<th>Themes</th>
<th>Associated experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: distress and reactivity</td>
<td>“freak out”</td>
<td>Emotional volatility, sensitivity, and self-doubt. Dealing with emotions in unhelpful ways such as shutting them out or reacting impulsively.</td>
</tr>
<tr>
<td></td>
<td>“Overreacting”</td>
<td></td>
</tr>
<tr>
<td>Phase 2: gaining stability</td>
<td>“Relaxing”</td>
<td>Calming, dis-identifying from emotions, and lessening self-doubt.</td>
</tr>
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<td></td>
<td>“Conscious control”</td>
<td>Agency in handling inner emotional experience and recognizing the limits of control over situations.</td>
</tr>
<tr>
<td>Phase 3: insight and application</td>
<td>“Clarity of mind”</td>
<td>Greater understanding of self and others leading to more constructive internal and external actions.</td>
</tr>
<tr>
<td></td>
<td>“Confidence” and competence</td>
<td>An enhanced sense of engagement with day-to-day living and the ability to apply mindfulness to meet ongoing challenges.</td>
</tr>
</tbody>
</table>

a balance." Besides a “stopping” or “slow down” effect, mindfulness was reported to lead to inner calm through:

1. Allowing, in relation to stressors, “perspective... Like it’s OK, I’m still breathing, it could be a lot worse.”
2. Enabling disidentification from unpleasant emotions: “being apart from the worry: like there was you and there was the worry” but “I don’t mean detached in these as my emotions and they’re totally separate, I mean I, I don’t get caught up in everything so it really helps to distance myself just slightly.”
3. Diminution of the “self-questioning voice” wherein young people were able to “not shut it out all the time but choose whether or not to listen to it.” Mindfulness practice had “sort of stopped that kind of mental beatings of myself... You just don’t really think like that when you’ve been practicing mindfulness because you think “if I think like that, it’s just being self-destructive.”

Examination of weekly written records of meditation experience revealed that in the first two weeks, all participants “managed stress better” and were “less anxious,” and found meditation “calming.” In weeks three and four, three participants reported “strong emotions”: “[meditation] brought about very negative feelings (sadness, grief) but I was aware of them”; “It was intense, just being with your thoughts. Some thoughts you don’t want to think about.” A unanimously positive relationship with meditation reoccurred in the final two weeks as participants reported “getting more used to it”... “amazing how practice helps you to improve so much over a relatively short period of time.”

“Conscious control.” This eventually calmer mind was associated with a sense of having “conscious control over life and my emotions.” Being “more in control” of oneself meant “not controlling [emotions] but being aware of them and then dealing with them.” While regarding situations, “It’s good to be able to recognise it: things that you can and can’t control.” This recognition reduced the need to struggle with undesirable situations while some degree of mastery was gained through changing the relationship to “something that you can’t always have total control over. I find like at least you can recognise it’s happening.” And, “I’d be able to just let it pass me by rather than getting all emotionally caught up in it.”

Phase 3: Insight and application

“A more in-depth consideration.” Ongoing mindfulness practice, through “a clarity of mind which doesn’t allow you to go into that destructive, stressed out mental state,” led to “a more in-depth consideration of the world around you. As well as your own thoughts and feelings.”

“I initially thought mindfulness was merely a stress-management technique. I now understand that it’s so much more than that: it’s a way of viewing oneself, one’s emotions, one’s surroundings and one’s general well-being. It’s a mindset, not just a stress-management technique.”

As “a way to look into yourself” and “getting a sense of who you are,” mindfulness practice allowed “understanding how you work and what freaks you out and how to avoid that or remedy it.” Participants appeared to gain greater understanding regarding the body, thoughts, emotions, and the relationships between them as well as their ever-changing nature.

“I consider mindfulness as observing myself so that would be observing my body and how it’s feeling um... and also observing my mind and how it’s feeling and then making a link between the two.”

“Helps me sort out what my mind thinks I’m feeling and how I’m actually feeling and then relate the two together.”

“You are aware of the change that is happening within yourself... You’re changing all the time. All the time and you change in the present.”

This greater understanding allowed inner experience to be managed more effectively:

“My mind cleared and I realised that once I’d achieved that, it was OK once some thoughts came back in and I could deal with them a lot more easily.”

“It’s not like those thoughts have stopped or inhibited in anyway. It’s more like you can see the progression happening between those thoughts. And there are more clear links and everything makes much more sense.”

Self-understanding was distinguished from self-centeredness because mindfulness was “about acknowledging how you’re feeling. And I think that’s a big deal for me because I don’t really listen to myself. So I’m able to think about myself a lot more without being overly selfish and self-indulgent.”

“Confidence” and competence: Having achieved greater stability and understanding, young people were now more open to the world around them “rather than have an egocentric kind of perspective.”

“You actually just become kind of um... a part of the world and um, by being in the present moment and by bringing your focus back to now it’s like ‘Hang on, I’m here and I’m participating in what’s going on right now.’
In contrast to being wracked by the "self-doubting" voice in phase 1, "Mindfulness allows you to have that confidence in yourself." "Lessening the intensity of the emotions that had the potential to cloud my reasoning" meant that a mindful stance "allows you to make decisions or to tackle situations...without a yeah, best mindset that you possibly can tackle them with. Without the resulting stress that "Did I make the right decision?" or whatever. Because you feel like you dealt with it as best you can."

Furthermore, mindfulness practice "made you more competent." "You know of course you're making less mistakes because you're considering things more deeply."

"You see things much more clearer and are able to make more balanced decisions because you feel like you're acting more rationally."

For instance, in relation to procrastinating about writing essays:

"When you're thinking clearly you think 'Well I'd just be avoiding it, and it's just going to prolong how long it's going to take to do it so the best decision in this situation would be to just write it.'"

In interpersonal situations "more consideration for others [as a result of mindfulness practice] leads to having a better relationship with others" and being able to "let it [a perceived slight] just pass by rather than creating confrontation or that kind of struggle."

**Discussion**

This is the first study to develop an explanatory model of how adolescents or young people relate to mindfulness practice. With the exception of the single-case adolescent study reviewed previously [21] and one study of adult college students [23], this is the first detailed qualitative study, known to the authors, of MT in participants of any age not suffering from a specific clinical disorder or social disadvantage. Young people in this study were able to go beyond an arguably superficial, regulatory [24] engagement with mindfulness, wherein relaxation and a sense of control may be gained, to experience benefits such as an expanded understanding of themselves and others and greater confidence and competence.

Themes derived here that are similar to those in previous qualitative studies of young people and high-quality studies involving adults [12–14] were:

- Attainment of a sense of relaxation or calm [12,19,20];
- An ability not to be controlled by one's emotions (directly [13,14,21] or where a sense of agency in specific situations was created by engaging with a particular mindfulness practice (e.g., bringing attention to the breath) [12,19,20]); and
- A more considered stance toward oneself and others (expressed as a shift in perspective [13,19,21] or a greater awareness and acceptance [12,14]).

Characteristics of participants' emotional lives before engagement with MT were presented in one study of young people [19,20] and one adult study [12]. Consistent with the findings in this study, key stressors identified by young people related to schoolwork and relationships and were referred to as forms of "drama" [19]. Unhelpful ways of dealing with these difficulties such as to "tune out" [19] from stress or to express hostility was again consistent with "shutting them [unwanted emotions] out" and "overreacting" or being "socially destructive" noted by participants in this study. Living in "total denial" is a similar theme expressed by adults [12].

The shift from viewing mindfulness as a "stress management technique" to a "mindset" presented here aligns with the findings in one study in which the participant reported in the latter part of the MT course: "I know now that it's a way of life" [21]. Similarly Mason et al [12] found that participants began with relaxation and the learning of skills but then became focused on integrating mindfulness into day-to-day life [12].

Participants' understanding of mindfulness was quite sophisticated as demonstrated by the following examples and their correlation with the mindful stance as discussed in the literature:

- Mindfulness allowed to "distance myself just slightly [from unpleasant emotions]", but "I don't mean detached:" The aim in mindfulness practice is to cultivate a meta-awareness wherein one does not eschew, numb or try to dissociate from unpleasant emotion but gains the ability to both experience and observe it at the same time [25].
- Recognizing that "conscious control" entitled "not controlling [emotions] but being aware of and then dealing with them." Mindfulness involves being aware of and accepting whatever happens to be occurring in the present moment, rather than attempting to force experience to take a certain, desired, course [8].
- Appraising the paradox that mindfulness practice was "a way to look into yourself" but was not "selfish and self-indulgent" or "ego-centric." The form of self-awareness fostered in mindfulness practice often leads to a compassionate openness towards others and their concerns [26].

This study involved a small number of participants. Depth and breadth of data was enhanced by the use of a variety of methods (i.e., focus group, interview, and written and online feedback) and an iterative approach to data collection and analysis. Although small sample sizes can allow successful application of grounded theory [22], it nonetheless constitutes a limitation of this study. In future, this limitation can be addressed by extending the theory building process over more than one MT course cycle.

The extensive pre-existing personal and professional engagement of the lead researchers (K.M., B.K., C.U.) with mindfulness may have been a source of bias in interview focus group facilitation and data analysis. Independent data analysis (J.N.) and review (H.H., D.V., J.B.) by other authors, without a background in mindfulness, was intended to counteract this.

As outlined previously, there is great convergence between the data in this study of a unique group (young people without current specific clinical or psychosocial difficulties) and findings from previous qualitative studies of MT. It may be argued that persons suffering illness-related or psychosocial distress would be more motivated to engage with an intervention, or that the life experience accrued by adults will lead to their having a different or more sophisticated understanding of mindfulness from youth. The similarities discussed here counter such concerns and suggest a broad accessibility of the underlying principles of mindfulness even though they can be difficult to
define and at times appear paradoxical [9]. These results may be a source of encouragement in the expanding effort to bring mindfulness training to young people [4–6].

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References

Appendix F: Publicly available online mindfulness training courses

A selection of sites that aim to provide mindfulness training as a modular, progressive course is presented below. Sites have been selected that, in the author’s view, present mindfulness practice as taught in evidence-based programs such as MBSR and have been established by suitably qualified teachers. Sites that present meditation purely as a relaxation technique outside the larger philosophical context of mindfulness practice are not included. There are many thousands of sites that present information and instructions on mindfulness not arranged as a course. A review of those was considered outside the scope of this project (see also ‘1.3.6. Mindfulness training and the Internet’, page 92).

www.emindful.com
This site delivers MBSR via videoconference. Participants and a facilitator are present live at assigned times. The cost is US$495.

www.bemindfulonline.com
Developed by the UK Mental Health Foundation and Wellmind Media in 2011, this site makes MBCT available to the public using text, video and audio presentations at a cost of £40.

www.wildmind.org
Four week courses that use a mixture of online information, online discussion and private online interview with a facilitator are available at a cost of US$85.

www.mindfulschools.org
This site provides a variety of resources for educators. It includes a six-week online course established in 2010 and particularly suited to teachers available at a cost of US$150.

www.dharmaseed.org and www.audiodharma.org
These sites present hundreds of free audio recordings of talks about mindfulness and meditation instructions given live at two US centres. Some series of talks can be listened to in order to simulate the experience of taking a course live and are provided with supporting downloadable written material: e.g. www.insightmeditationcenter.org/books-articles/meditation-instruction.
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