Therapeutic Approaches to Suicidal Phenomena in Adolescence:
A Systematic Review of Mindfulness-Based Approaches and an
Investigation of the ‘Broad Minded Affective Coping’ Technique

A thesis submitted to the University of Manchester for the degree of

Doctor of Clinical Psychology

in the Faculty of Medical and Human Sciences

2013

CLARE JANE DUDDRIDGE

SCHOOL OF PSYCHOLOGICAL SCIENCES
List of contents

List of Tables ................................................................. 6
List of Figures ............................................................... 6
Abstract ............................................................................. 7
Declaration ........................................................................... 8
Copyright and Ownership of Intellectual Rights ......................... 9
Acknowledgments .................................................................. 10

PAPER ONE ........................................................................ 11

Abstract ............................................................................. 12

Introduction .......................................................................... 13

Mindfulness .......................................................................... 15
Mindfulness-Based Interventions .............................................. 16
  Mindfulness-based stress reduction (MBSR) ......................... 17
  Mindfulness-based cognitive therapy (MBCT) ...................... 17
  Dialectical behaviour therapy (DBT) ................................ 18
  Acceptance and commitment therapy (ACT) ..................... 18

Mindfulness for Suicidal Phenomena and Depression .................. 18
Mindfulness with Adolescents ............................................... 21
The Present Review ................................................................ 22

Method .................................................................................. 22

Figure 1. Flow Chart of the Search Process ............................. 24

Results ................................................................................... 25

Overview of the Studies ....................................................... 25
  Sample characteristics ..................................................... 25
  Interventions ..................................................................... 26
  Measures ........................................................................... 27

Terminology and Organisation of Papers ............................. 27

The Impact of Mindfulness-Based Approaches on Suicidal Phenomena ........................................................................ 28
  Suicidal ideation ............................................................ 28
  Suicide attempts, parasuicide and self-harm ...................... 31
  Non-suicidal self-injury (NSSI) ....................................... 36

The Impact of Mindfulness-Based Approaches on Depression ........................................................................ 39
  Dialectical behaviour therapy ....................................... 39
List of tables

PAPER TWO
Table 1 Mean Sessional Change on the Visual Analogue Scales ………….. 82
Table 2 Mean Scores and Effect Sizes …………………………………… ... 83

APPENDICES
Table E1 Characteristics of Studies Included in the Systematic Review ......154
Table F1 Measures of Suicidal Ideation ………………………………………171
Table F2 Measures of Suicide Attempts, Self-Harm and Non-Suicidal Self-Injury ……………………………………………………171
Table F3 Measures of Depression ……………………………………………172

List of figures

PAPER ONE
Figure 1 Flowchart of the Search Process ……………………………………….24

PAPER TWO
Figure 1 Change in Participant 1 Scores ………………………………………83
Figure 2 Change in Participant 2 Scores ………………………………………83
Figure 3 Change in Participant 3 Scores ………………………………………84
Figure 4 Change in Participant 4 Scores ………………………………………84
Figure 5 Change in Participant 5 Scores ………………………………………85
Figure 6 Change in Participants’ Rates of Self-Harm ………………………86
Figure 7 Change in Participants’ Scores on the Strategies Subscale of the DERS ……………………………………………………………87
Abstract

Therapeutic Approaches to Suicidal Phenomena in Adolescence: A Systematic Review of Mindfulness-Based Approaches and an Investigation of the ‘Broad Minded Affective Coping’ Technique

Clare Jane Duddridge

Doctor of Clinical Psychology

The University of Manchester

July 2013

The prevalence rates for adolescent suicide and self-harm are alarming, suggesting a continued need for research into effective treatment strategies for young people experiencing suicidal phenomena. This thesis explores the impact of two treatment approaches: Mindfulness and Broad Minded Affective Coping (BMAC; Tarrier, 2010).

Paper One is a systematic review exploring the potential role of mindfulness in the treatment of adolescent suicidality and depression. There were two broad aims: to present an argument for the utility of mindfulness practice in alleviating suicidal phenomena and depression in young people, and to systematically review studies that examined the impact of mindfulness-based approaches with adolescent populations, specifically exploring outcomes relating to suicide, self-harm, and depression. Twenty-eight papers were identified; studies were critically evaluated and findings were integrated to provide an overall account of the potential efficacy of mindfulness-based approaches. Findings were promising, suggesting that these approaches could be helpful in the treatment of young people experiencing suicidal phenomena or depression. Areas for further exploration are considered and clinical implications discussed.

Paper Two is an empirical paper investigating the effectiveness of a therapeutic tool of affect-regulation – the Broad Minded Affective Coping (BMAC) method. A case-series design was employed and participants were young people who had recently attempted suicide or self-harmed. The study explored the impact of BMAC practice on self-reported hope and happiness and on a range of outcomes associated with adolescent suicidality. Findings were promising; BMAC practice appeared to be associated with improvements in all areas of interest. Whilst encouraging, findings are considered in light of the limitations of case-series methodologies. Future investigations are recommended, and clinical implications outlined.

Paper Three is a reflective paper exploring the process of conducting the aforementioned research and discussing some of the challenges involved. Reflections on the strengths and limitations of the research are integrated within the paper, alongside areas for further research. The theoretical context and clinical implications of the research are considered.
Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or institute of learning.
Copyright and Ownership of Intellectual Rights

i. The author of this thesis (including any appendices and/or schedules to this thesis) owns certain copyright or related rights in it (the “Copyright”) and s/he has given The University of Manchester certain rights to use such Copyright, including for administrative purposes.

ii. Copies of this thesis, either in full or in extracts and whether in hard or electronic copy, may be made only in accordance with the Copyright, Designs and Patents Act 1988 (as amended) and regulations issued under it or, where appropriate, in accordance with licensing agreements which the University has from time to time. This page must form part of any such copies made.

iii. The ownership of certain Copyright, patents, designs, trade marks and other intellectual property (the “Intellectual Property”) and any reproductions of copyright works in the thesis, for example graphs and tables (“Reproductions”), which may be described in this thesis, may not be owned by the author and may be owned by third parties. Such Intellectual Property and Reproductions cannot and must not be made available for use without the prior written permission of the owner(s) of the relevant Intellectual Property and/or Reproductions.

iv. Further information on the conditions under which disclosure, publication and commercialisation of this thesis, the Copyright and any Intellectual Property and/or Reproductions described in it may take place is available in the University IP Policy (see http://www.campus.manchester.ac.uk/medialibrary/policies/intellectual-property.pdf) in any relevant Thesis restriction declarations deposited in the University Library, The University Library’s regulations (see http://www.manchester.ac.uk/library/aboutus/regulations) and in The University’s policy on presentation of Theses.
Acknowledgments

I would like to thank my supervisors, Dr. Daniel Pratt and Dr. Kirsty Smedley, for the guidance, feedback and encouragement they have provided during the course of the study. I would also like to thank my clinical tutor, Dr. Lara Bennett, for her support throughout my doctoral training, particularly during my pregnancy and return from maternity leave.

I would like to acknowledge Professor Nick Tarrier for giving up his time to provide training and guidance on the BMAC technique. I would also like to show appreciation to Dr Lauren McEwan for her assistance during the recruitment process.

I would like to thank my peers on the Clinical Psychology Doctoral programme (2009 and 2010 intakes). I am particularly grateful to Dr. Sarah Woodhead, Dr. Philippa Gardner and Dr. Sian Trenchard for being so supportive.

The research would not have been possible without the inspiring young people who participated in the study; they were such a pleasure to work with and I wish them all the very best for the future.

A very special thank you to my family and friends for the help and kindness they have shown me over the past few years.

I would like to express my utmost gratitude to my husband, Gavin, for his unwavering support and encouragement. Finally, I would like to thank my daughter, Daisy Alice, for helping me to keep perspective and never failing to make me smile.
PAPER ONE

The Impact of Mindfulness-Based Approaches on Suicidal Phenomena and Depression in Teenagers: A Systematic Literature Review

Prepared in accordance with requirements for submission to Clinical Psychology Review (Appendix A.)

WORD COUNT: 10,948
Abstract

There is growing interest in the application of mindfulness-based therapies with adolescent populations. It has been suggested that mindfulness practice might be an effective adjunct to current treatment strategies for individuals displaying suicidal behaviours; this is worthy of exploration within an adolescent population, given the increasing public concern regarding the prevalence of suicide and self-harm amongst teenagers. There were two broad aims of the review: firstly, to present an argument for the potential role of mindfulness as a treatment approach for adolescents displaying suicidal phenomena and secondly, to systematically review the existing literature that examines the impact of mindfulness-based approaches on adolescent populations, with a specific focus on outcomes relating to suicide, self-harm and depression. Overall, findings were positive and encouraging. The existing research appears to support the notion that mindfulness-based approaches could be a useful addition to the pool of treatment strategies for teenagers experiencing suicidality or depression. Findings are considered in light of the significant methodological limitations of the reviewed studies.

Keywords: Mindfulness. Suicide. Self-harm. Depression. Adolescents.
The Impact of Mindfulness-Based Approaches on Depression and Suicidal Phenomena in Teenagers: a Systematic Review.

Nock (2012) proclaimed, “the death of a child is one of the most tragic events imaginable. Even more gut-wrenching is when a child intentionally chooses to end his or her own life in order to escape from unbearable suffering” (p. 255). Sadly, adolescent suicide is a reality and continues to be a major public health issue. Global figures have revealed suicide as the second most common cause of death in young people (Patton et al., 2009). Furthermore, at any given time, many teenagers are contemplating suicide – 15.8% of young people report to have seriously considered taking their own lives (Centres of Disease Control and Prevention [CDC], 2012). These figures are alarming and suggest a need for continued research into effective treatment strategies targeting suicidal phenomena – a term used by Evans and colleagues (and throughout this paper) to integrate attempted suicide, self-harm, suicidal thoughts and suicidal threats or plans (Evans, Hawton, Rodham, & Deeks, 2005).

Self-harm is one of the main predictors of death by suicide in teenagers (Hawton & Harriss, 2007). Additionally, Whitlock et al. (2013) found that a history of self-harm significantly predicted concurrent or later suicidal thoughts and behaviours. This is perturbing, as it has been reported that around 10% of adolescents show self-harming behaviours, many of whom have suicidal motives (Hawton, Saunders, & O’Connor, 2012). In clinical populations, the prevalence of self-harm is reported to be around 40-60% (e.g. Klonsky & Muehlenkamp, 2007; Nock & Prinstein, 2004). For clarity, the term self-harm (SH) will be used henceforth to denote any non-fatal act of SH, irrespective of the motive or the extent of suicidal ideation (as defined by Hawton et al., 2003, and employed by the National Institute of Clinical Excellence [NICE], 2011).
Depression is also associated with adolescent suicide and often cited as the most prominent risk factor (e.g. Brent et al., 1993; Shaffer et al., 1996). Teenagers experiencing depression are believed to be twelve times more likely to attempt suicide than teenagers who are not experiencing depression (Miller & Eckert, 2009). Furthermore, Beautrais and colleagues (1996) found that the population attributable ratio (PAR) for depression in suicidal behaviour is 80%, suggesting that if depression could be eliminated there would be an 80% reduction in suicidal behaviour (Beautrais et al., 1996). The incidence of depression in young people is concerning; last year 28.5% of teenagers were depressed (CDC, 2012).

In light of these figures, there has been a mounting research interest in adolescent suicide, SH and depression (Costello, Erkanli, & Angold, 2006; Hawton & James, 2005; Hawton et al., 2012). An important direction for research has been the development of possible treatment strategies. Nock (2012) encouraged such research, asserting that “it is imperative that we act quickly, strongly, creatively, and comprehensively, so that we can begin to decrease the tragic injury and loss of life due to suicidality and self-injury” (p. 258).

In recent years it has been proposed that mindfulness may be useful in the treatment of both suicidal phenomena and depression (Luoma & Villatte, 2012; Segal, Williams, & Teasdale, 2002; Williams, Duggan, Crane, & Fennell, 2006; Williams & Swales, 2004). Mindfulness-based approaches have also been shown to be effective in alleviating a range of adolescent difficulties (see Burke, 2010, for a review). It seems feasible, therefore, that mindfulness-based approaches could influence suicidal phenomena and/or depression in young people.

This paper will describe mindfulness and outline some of the clinical interventions that have employed mindfulness techniques. There will be a further
discussion on how mindfulness might help depressed or suicidal individuals, followed by an exploration of the application of mindfulness strategies with adolescents. Subsequently, there will be a critical review of studies investigating the impact of mindfulness-based approaches on adolescent suicidal phenomena or depression. The review will conclude with a summary of the limitations of the research and implications for further research and practice.

**Mindfulness**

There is much controversy regarding the exact definition of *mindfulness*, with authors contributing a multiplicity of descriptions (e.g. Bishop et al., 2004; Brown & Ryan, 2003; Gunaratana, 1991; Hayes & Shenk, 2004). However, the most widely used definition appears to be the one specified by Kabat-Zinn (1994) who described mindfulness as “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (p.4). An analogous definition is given by Marlatt and Kristeller (1999), who described mindfulness as “bringing one’s complete attention to the present experience on a moment-to-moment basis” (p.68). The skill of directing one’s attention this way can be developed through the practice of *meditation*, which is described as deliberate self-regulation of attention from moment-to-moment (Goleman & Schwartz, 1976; Kabat-Zinn, 1982). Despite the variations in terminology, there is consensus that there are two important processes, specifically: present moment awareness and an attitude of non-judgmental acceptance of what is experienced (Bishop et al., 2004; Herbert & Cardaciotto, 2005). The hope is that when an individual focuses their attention in a *mindful* way, they can respond flexibly to current events with a full awareness of both their environment and their internal habitual perceptions, cognitions, emotions and sensations.
Mindful awareness contrasts with what is described as automatic pilot mode (Kabat-Zinn, 1982; McCracken, 2005), whereby people behave automatically and almost oblivious to the internal experiences causal to their actions. The problem with this mode is that people can have habitual tendencies (such as worry and rumination) that can reoccur and persist over time, and can contribute to the maintenance of clinical problems (Borkovec, 2002). By experiencing the present moment with an attitude of non-judgmental acceptance, individuals may become more aware of their automatic tendencies and can learn to make choices that are not constrained by these (Williams & Swales, 2004).

**Mindfulness-Based Interventions**

Mindfulness practice is most commonly associated with Buddhist spiritual traditions (Germer, Segal, & Fulton, 2005; Kabat-Zinn, 1982; Linehan, 1993a). Traditionally, it involved the practice of mindfulness meditation and was described as a technique accessible to all – to ease suffering and to enhance qualities such as awareness, compassion and wisdom (Goldstein, 2002). More recently, mindfulness has been thought about from a secular perspective and has shown promise as a clinical intervention for a range of difficulties (see Baer, 2003, and Hofman, Sawyer, Witt, & Oh, 2010, for reviews of the literature).

The most predominant mindfulness-based approaches currently used are mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982, 1990), mindfulness-based cognitive therapy (MBCT; Segal et al., 2002), dialectical behaviour therapy (DBT; Linehan, 1993a, 1993b) and acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999). The theoretical underpinnings and precise delivery of these interventions varies; however, they all have a fundamental focus on the development of mindfulness skills.
A plethora of meditation exercises are employed across these approaches; some encourage individuals to attend to internal experiences (such as thoughts and emotions) whilst others encourage attention to aspects of the environment (such as sights and sounds) (Kabat-Zinn, 1994; Linehan, 1993b). During practice, individuals are usually encouraged to view their thoughts as mental events (rather than aspects of the self or true expressions of reality) and not to attempt to suppress or alter them (e.g. Fresco et al., 2007; Hesser, Westin, Hayes, & Andersson, 2009).

The aforementioned therapies are outlined below, albeit briefly. (For specific guidance on these approaches, interested readers are directed to the original papers).

**Mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982, 1990).**

MBSR is a structured group programme employing mindfulness-based meditation to help individuals with a range of difficulties, both psychological and physical. It is usually delivered as a structured group programme, one 2-hour session per week, over a period of 8-10 weeks. Sessions cover specific topics and exercises that are conveyed in the context of mindfulness, such as meditation practice, mindfulness during yoga postures, and mindfulness within stressful situations and social encounters. Training focuses on the development of mindfulness in daily life and an attitude of acceptance of events and experiences (Shapiro, Carlson, Astin, & Freedman, 2006).

**Mindfulness-based cognitive therapy (MBCT; Segal et al., 2002).** MBCT is a group programme designed for use in the prevention of relapse in major depression. It was largely adapted from MBSR, but includes components of cognitive behaviour therapy for depression. Individuals are taught to observe their thoughts and feelings through the repeated practice of mindfulness. The cultivation of awareness during mindfulness practice is believed to help individuals to observe openly when habitual
tendencies have been activated and to detach from these processes by viewing them as mental events rather than reflections of reality.

**Dialectical behaviour therapy (DBT)** (Linehan, 1993a, 1993b). DBT amalgamates standard CBT with mindfulness practice. It was initially designed for ‘parasuicidal’ women with borderline personality disorders (Linehan, 1993a, 1993b); although it has been used for a variety of clinical difficulties (see Baer, 2003). The programme consists of both individual and group sessions, delivered weekly. There are four modules: mindfulness, interpersonal effectiveness, distress tolerance, and emotional regulation; however, mindfulness exercises are practiced throughout the programme.

**Acceptance and commitment therapy (ACT)** (Hayes et al, 1999). ACT is a cognitive-behavioural approach, theoretically based in contemporary behaviour analysis (Hayes & Wilson, 1993). In ACT, the focus is not on the control or reduction of symptoms per se; rather, it seeks to assist individuals to encounter distress openly, without unproductive resistance, and to observe their internal experiences as separate from the person having them. Thus, individuals are encouraged to experience thoughts and emotions as they arise, without evaluating or attempting to change them, and mindfulness training is a key part of this endeavour (Hayes et al., 1999). A further aim of ACT is to liberate people to focus on living meaningful and valued lives, despite inevitable encounters with distress and pain.

**Mindfulness for Suicidal Phenomena and Depression**

Mindfulness has been advocated as a useful approach in the treatment of suicidal phenomena (e.g. Linehan, 1993a; Luoma & Villatte, 2012; Williams et al., 2006; Williams & Swales, 2004). It has also been explored as a treatment approach for
depression (Eisendrath et al., 2005; Finucane & Mercer, 2006; Hofman, et al., 2010; Kenny & Williams, 2007; Ma & Teasdale, 2004; Teasdale et al., 2000). Authors have offered ample reasons why mindfulness ‘makes sense’ as an intervention for these difficulties and some of the key points shall be outlined below.

There is strong evidence that both depressed and suicidal individuals experience cognitive biases that maintain negative thinking. For instance, depressed individuals have been found to exhibit selective attention towards stimuli consistent with depressed mood, such as indicators of rejection or failure (Mathews, Ridgeway, & Williamson, 1996; Mogg, Mathews, & Eysenck, 1992). Similarly, suicidal individuals are believed to experience negative attentional biases, particularly towards suicide-related stimuli (Becker, Strohbach, & Rinck, 1999; Wenzel & Beck, 2008; Williams & Broadbent, 1986). Negative attentional biases may lead to the automatic activation, or exacerbation, of negative affect, which may maintain low mood or a fixation on suicidal phenomena. It has been suggested that mindfulness could interrupt the automacity of this process and allow individuals to notice and detach from their thoughts, and thereby react less impulsively and more reflexively (Williams & Swales, 2004).

A second argument is that depressed and suicidal individuals are known to experience depressive rumination, defined as “behaviour and thoughts that focus one’s attention on one’s depressive symptoms and on the implication of these symptoms” (Nolen-Hoeksama, 1991, p. 569). A typical presentation of depressive rumination involves repetitive and ongoing thinking about the self, past events, unresolved worries and current symptoms. Rumination has frequently been associated with depression (Just & Alloy, 1997; Nolen-Hoeksema, 2000; Robinson & Alloy, 2003) and suicidal ideation and behaviours (Abramson et al., 1998; Eshun, 2000; O’Connor & Noyce, 2008). It has been suggested that mindfulness can help with rumination such that, rather than be
caught up in unhelpful cognitive processes, individuals can learn to focus on moment-to-moment experiences and observe these in a *decentred*, non-judgmental fashion (Luoma, Hayes, & Walser, 2007). Mindfulness practice has been found to disrupt rumination (Jain et al., 2007; Kingston, Dooley, Bates, Lawlor, & Malone, 2007) and, as such, might allow for more adaptive responses to current difficulties.

A third proposition is for the role of mindfulness in eliminating *experiential avoidance*, that is, behaviours that function to avoid or escape from unwanted internal experiences and the situations that create them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Experiential avoidance is common in suicidal individuals; for instance, they often report experiencing invasive mental images and thoughts of suicide (Holmes, Crane, Fennell, & Williams, 2007) and will attempt to suppress these from awareness, which can be counter-productive by increasing the intensity and frequency of these experiences (Pettit et al., 2009). It has also been suggested that suicide might be the most extreme expression of experiential avoidance (Chiles & Strosahl, 2005). Indeed, there is evidence that suicidal behaviour is an attempt to escape, or avoid, seemingly intolerable experiences (Baumeister, 1990; Crane et al., 2008; Williams, 2001). Since mindfulness training emphasises *observation* and *acceptance* of present-moment experience, this might increase a person’s willingness to tolerate these difficult internal experiences (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Linehan, 1993a) which, in turn, might also eliminate the detrimental effects of attempts at thought suppression (e.g. Hepburn et al., 2009). Moreover, whilst mindfulness is not intended to actually reduce distressing thoughts or imagery, it has been shown to have this effect (Frewen, Evans, Marak, Dozois, & Partridge, 2008).

Finally, the essence of the mindfulness approach is the importance of well-being and self-compassion, rather than simply the reduction of symptoms. Development of
self-compassion might be an important buffer for negative feelings (Leary, Tate, Adams, Allen, & Hancock, 2007). Furthermore, Williams and Swales (2004) have suggested that the building of resilience, through mindfulness practice, could be important for suicidal patients, since they often come for treatment when their worst symptoms have abated and a particular crisis has ended.

**Mindfulness with Adolescents**

A substantial range of research into mindfulness-based approaches has been conducted with adult populations. Baer (2003) performed a meta-analysis of 21 studies of mindfulness interventions with a range of difficulties and found a large mean post-treatment effect size (Cohen’s $d=0.74$; Cohen, 1977) and a medium effect size at follow-up ($d=0.59$). Mindfulness-based approaches have been found to be specifically effective in reducing depression and suicidal phenomena (including SH) with adult samples (e.g. Barnhofer et al., 2009, Luoma & Villatte, 2012; Williams et al., 2006).

Given these findings, interest has grown regarding the potential use of mindfulness-based approaches with adolescents, in both clinical and non-clinical settings (see Burke, 2010, for a review). Furthermore, some authors have proposed specific modifications that could be made to these approaches to facilitate their delivery to a younger population (Miller, Rathus & Linehan, 2007; Thomson & Gauntlett-Gilbert, 2008).

In a review of the research into mindfulness-based approaches with children and adolescents (focusing on MBSR and MBCT), Burke (2010) reported the findings of 15 studies. It was concluded that there was a “reasonable base of support for the feasibility and acceptability of mindfulness-based approaches” (p. 143), with a younger population. However, the author noted that research was still in its infancy and that
some of the studies were methodologically limited. Following this review, there was a rapid increase in studies investigating the use of mindfulness with youth. As such, it seems timely to review this increased body of literature again.

The Present Review

This systematic literature review advances the aforementioned review (Burke, 2010) by considering the more recent influx of research, but also by broadening the scope to include other predominant mindfulness-based approaches (specifically DBT and ACT). The relative contribution of mindfulness training to treatment outcomes for DBT and ACT is unsubstantiated; however, mindfulness is a core component of both approaches. Furthermore, the current popularity of these approaches in clinical settings suggests that their inclusion in the review is worthwhile.

The review focuses exclusively on work with adolescents and on the impact of these approaches on suicidal phenomena (as defined by Evans et al., 2005) and on symptoms of depression. Whilst it is known that there are many correlates of suicidality in youth, the strong relationship between depression and suicide has been particularly emphasised (Hawton & James, 2005). Therefore, the inclusion of studies investigating depressive symptoms as an outcome is deemed helpful and appropriate. Moreover, it is notable that some mindfulness-based approaches (e.g. MBCT) have been designed with depression as the specific target for change.

Method

Relevant papers were identified through searches of PsychINFO, CINAHL Plus (Cumulative Index to Nursing and Allied Health Literature), and Web of Science. Key search terms included a combination of words relating to ‘adolescents’, ‘suicide’, ‘self-harm’, ‘depression’ and ‘mindfulness’ (see Appendix B, for a list of search terms). The
search strategy was limited to articles written in English and no date restrictions were applied.

To be included in the review, articles needed to: (a) be published in a peer-reviewed journal, (b) be written in English, (c) involve adolescent participants aged 11-18 years (or a sample mean between 11-18 years), (d) report on the use of a mindfulness-based approach, and (e) use outcomes measures related to suicidal phenomena, SH, or depression. Articles were excluded if they were dissertation abstracts or conference proceedings, or did not meet the inclusion criteria.

The abstracts of identified articles were screened by the first author (CD) to determine whether they were potentially relevant to the review, and, if so, the full-text articles were retrieved. Each article was then further scrutinised to determine inclusion. In cases where further information was needed to determine inclusion, the corresponding author was contacted. When inclusion was still unclear, the article was discussed with an independent reviewer (DP) and agreement sought. Electronic search strategies were supplemented by hand-searching and thorough checking of references cited in the identified literature. Database email alerts were also subscribed to and additional articles reviewed, and added, during the review process. A flowchart of the search process is presented in Figure 1.

Information of interest was extracted from each article using a pro-forma designed for the purposes of the review (Appendix C). These summaries were then collated and reviewed, and findings from each article were synthesised to provide an overall review of the literature.
Figure 1. Flowchart of the Search Process

The methodological quality of the studies was assessed using the Effective Public Health Practice Project (EHPP) Quality Assessment Tool for Quantitative Studies (Thomas, 2003; see Appendix D.). The EHPP quality assessment checklist has been found to be both reliable and valid and has been recommended as an effective tool for systematic reviewers of both randomised and non-randomised studies of healthcare interventions (see Deeks et al., 2003, for a systematic review of quality assessment tools). Use of a quality assessment tool alerted the reviewer to the methodological strengths and weaknesses of each paper, thereby facilitating critical appraisal. A sample
of the papers (n=5) were assessed by an independent reviewer (a doctoral student, LF) to establish inter-rater reliability – there was 80% agreement of scores.

Results

Overview of the Studies

Twenty-eight studies met the inclusion criteria and were, therefore, included in the review. Specific details of these studies are presented in Table E1 (Appendix E), in chronological order, and full references are provided in the reference list.

The included papers were all published after 1998. Studies were carried out in six countries, predominantly the USA (n=15), but also in Australia (n=3), Canada (n=3), United Kingdom (n=3), Germany (n=2), China (n=1) and Sweden (n=1). Studies were carried out in a range of settings. The majority of the research took place in outpatient settings (n=17), with the remaining studies taking place in inpatient settings (n=3), in residential services (n=3), in schools (n=3), and in a forensic setting (n=1).

Researchers employed various research designs in the studies, including: case illustrations (n=4), one group pre-post designs (n=11), quasi-experimental designs (n=10) and randomised controlled trials (n=2). One paper was a published service outcome report, which did not employ a specific research design (The Grove Street Adolescent Residence of the Bridge of Central Massachusetts, Inc. [GSAR], 2004).

Sample characteristics. Sample size varied from single participant case illustrations (Katz & Cox, 2002; Nock, Teper, & Hollander, 2007; Turner, Barnett, & Korslund, 1998; Welch & Kim, 2012) to larger controlled trials, with the largest sample being 246 participants (Schonert-Reichl & Lawlor, 2010). The mean sample size across the papers was 46 participants. The age of the participants ranged from a sample mean of 11.4 (Joyce, Etty-Leal, Zazryn, Hamilton, & Hassed, 2010) to aged 17 (Nock et al.,
Young people from a range of ethnic backgrounds participated in the studies, including Caucasian, Hispanic/Latino, African-American, and Asian. Participants were predominantly female.

Studies involved participants with a range of difficulties, including mood disorders (n=14), personality disorders (n=7), anxiety disorders (n=6), attention-deficit hyperactivity disorder (n=5), oppositional-defiance disorder (n=4), post-traumatic stress disorder (n=3), conduct disorder (n=3), stress and adjustment disorders (n=2), eating disorders (n=1), and ‘severe emotional disturbance’ (n=1). Some papers described their sample solely in terms of presenting with suicide attempts or suicidal ideation, or having histories of severe and persistent SH (n=3). One study included a sample of both ‘mental health’ and ‘general population’ incarcerated young offenders (Trupin, Stewart, Beach, & Boesky, 2002) and two studies involved non-clinical samples (Joyce et al., 2010; Schonert-Reichl & Lawlor, 2010).

**Interventions.** The majority of papers reported the use of DBT (n=16), two of which used DBT combined with another therapy: DBT with music therapy (Plener, Sukale, Ludolph, & Stegemann, 2009) and ‘DBT-enhanced CBT’ (Welch & Kim, 2012). One study investigated the effectiveness of MBSR (Biegal, Brown, Shapiro, & Schubert, 2009), whilst another described a mindfulness intervention modified and adapted from MBSR (Lau & Hue, 2011). Four studies examined ‘mindfulness programmes’ that were described as being *informed* by MBSR, MBCT or relevant literature on mindfulness (Zylowska et al., 2008; Joyce et al., 2010; Tan & Martin, 2013; Schonert-Reichl & Lawlor, 2010). Three studies investigated the impact of ACT (Wicksell, Melin, Lekander, & Olsson, 2009; Hayes, Boyd, & Sewell, 2011; Gauntlett-Gilbert, Connell, Clinch, & McCracken, 2013). Surprisingly, there were no studies found specifically investigating the impact of MBCT.
Measures. An array of measures were utilised within the studies, mostly self-report questionnaires (see Tables F1-F3, Appendix F). However, studies also utilised diary-card measures, service records and databases, observations, and parental reports.

Terminology and Organisation of Papers

Due to the disparity of terms used in the literature, the organisation of papers within the synthesis shall be explained. It became apparent, during the review, that there is substantial variation across studies in the definitions of suicide attempts and SH. There appears to be much controversy regarding the degree of intent needed for a self-harming behaviour to be considered suicidal (Bille-Brahe, Kerkhor, De Leo, & Schmidtke, 2004). Some researchers choose to imply intent by labelling all self-harming behaviours not resulting in death as ‘suicide attempts’. Other authors employ the term ‘parasuicide’ (coined by Kreitman, 1977) to include all SH behaviours, with or without the intent to die. Similarly, the phrase ‘deliberate self-harm’ is used, which denotes all non-fatal acts of SH, irrespective of intent (Hawton et al., 2003). All of these terms denote behaviours that may be precipitated by suicide intent and where there is a risk of suicide occurring; as such, studies employing these terms shall be considered together. On the contrary, some authors advocate that intent should be assessed, and that self-injurious behaviours with no suicidal intent should be defined separately, for example as ‘non-suicidal self-injury’ (NSSI) or non-suicidal self-injurious behaviours (NSIB). Papers reporting outcomes relating to these behaviours shall be synthesised separately, as intended by the original authors.

Regardless of the terminology used, all of the studies reporting outcomes reflecting suicide attempts or acts of SH are presented under the heading of ‘suicidal phenomena’. This decision was informed by an argument by Miller et al. (2007) summarised henceforth. First, SH is believed to occur with colossal ambivalence and
rapidly changing intent. Second, behaviour that starts as non-suicidal can quickly change into suicidal and vice-versa. Thirdly, non-suicidal SH can be lethal and can become a suicidal act by default. Fourth, SH, regardless of the motive, is a strong predictor of eventual suicide. Therefore, by excluding NSSI from the spectrum of suicidal phenomena, one might trivialise these behaviours (see Miller et al., 2007, for further discussion).

The Impact of Mindfulness-Based Approaches on Suicidal Phenomena

Suicidal ideation. Six studies reported outcomes relating to suicidal ideation, all of which used DBT as the therapeutic approach. A range of measures were used including self-report questionnaires, diary-cards, and parental reports (see Appendix F.).

Four of the six studies reported reductions in suicidal ideation from baseline to post-treatment, following a DBT intervention. The fifth study did not provide outcome data at post-intervention, but reported a reduction in suicidal ideation at 12-months post-discharge (Katz & Cox, 2002). The sixth study (Memel, 2012) did not replicate these findings; frequency of suicidal ideation across the sample did not significantly change over the course of treatment. One of the studies provided outcome data at both post-intervention and follow-up (Katz, Cox, Gunasekara, & Miller, 2004) and found that suicidal ideation had significantly reduced by one year post-intervention. Specific details of these studies shall be considered henceforth.

Rathus and Miller (2002) investigated the effectiveness of a 12-week DBT intervention, delivered in an outpatient setting, to participants with ‘borderline personality traits’ (n=29). The authors reported a significant reduction in suicidal ideation from pre- to post- intervention, in participants receiving DBT. This is a promising finding, although it is difficult to draw conclusions about causality due to the
lack of outcome data for suicidal ideation from the comparison group (n=82).

Unfortunately, no follow-up data was collated, so the maintenance of the effect could not be observed,

In a later study, Katz et al. (2004) evaluated the effectiveness of a 2-week intensive DBT intervention, delivered in an inpatient setting (n=26). A treatment-as-usual (TAU) comparison group (n=27) was utilised and between-groups comparisons were made regarding changes in suicidal ideation. There were significant reductions in suicidal ideation over the course of treatment in the DBT group ($d=2.12$), but also in the TAU group ($d=1.36$). Both effect sizes were large, albeit greater in the DBT group, however no significant differences were found between the groups in the degree of suicidal ideation at discharge and there were no group by time interaction effects. At one-year follow-up, significant reductions in suicidal ideation were found in the DBT group; however, this reduction was not significantly different to that found in the TAU group. The authors concluded that a larger study might have detected significant differences between the groups, considering the different effect sizes. The findings suggest that whilst DBT may have been effective in reducing suicidal ideation, the effect was no greater than for TAU.

Goldstein, Axelson, Birmaher, & Brent (2007) reported the use of a 12-month DBT intervention for the treatment of adolescents diagnosed with bipolar disorder (n=10). A significant reduction in suicidal ideation from pre- to post- intervention was reported, replicating the findings of Rathus and Miller (2002) and Katz et al. (2004). Again, the effect size was large ($d=1.2$) and participants in this study reported a complete absence of suicidal ideation by the end of the programme. Limitations included the lack of a control group and a small sample size, precluding attribution of causality and generalisability of the findings.
Woodberry and Popenoe (2008) delivered DBT to adolescents (with mixed diagnoses) and their families, over 15-weeks, in an outpatient setting (n=28). In this study, there was a significant decrease in the frequency of adolescents reporting of ‘wanting to kill myself’ (item#52 on the Trauma Symptom Checklist for Children, TSCC; Briere, 1996). Interestingly, parental reports of their adolescents’ expressed suicidal ideation did not replicate this finding, as there was no significant change over time on the item ‘talks about killing self’ (item#91 on the Child Behaviour Checklist, CBCL; Achenbach, 1991). These findings should be interpreted with caution, given that suicidal ideation was measured by only a single item on a questionnaire. However, a particular strength of the research was the inclusion of parental reports to supplement self-report data. It was interesting to note the difference in outcomes, which suggests a discrepancy between adolescents’ actual experience of suicidal ideation and the degree to which they vocalise suicidal thoughts to their parents. It has previously been noted that parents report smaller changes in their children than the children do themselves, and a number of hypotheses regarding this discrepancy have been suggested (see Weisz, McCarty, & Valeri, 2006, for a discussion).

Memel (2012) investigated a 5-week DBT intervention (n=18), but did not replicate the promising results of the four above studies. In this study, ‘suicidal ideation’ was consolidated with other experiences (urges to commit suicide, urges to self-harm, urges to hurt others) into one outcome variable termed ‘life-threatening urges’ (LTU). It was found that the total number of weekly LTU’s did not change during the DBT intervention, although the desire to ‘act’ on the LTU’s was found to reduce from 70% of the time, to 20% of the time. A tentative conclusion was that adolescents might have been better able to tolerate their LTU’s as a result of the DBT intervention. It is difficult to make conclusions regarding the impact of the intervention on suicidal ideation per se,
due to the integration of a number of outcomes into one variable. Additionally, a small sample size was used (n=18) which prevented statistical testing, thereby making it difficult to assess the reliability of the findings.

Two of the papers investigating suicidal ideation reported data at one-year post-discharge (Katz & Cox, 2002; Katz et al., 2004) following an inpatient DBT intervention. The former paper reported a case illustration of an adolescent with major depressive disorder and ‘borderline features’ who showed a reduction in suicidal ideation from admission to 12-months post-discharge. This suggests a positive impact of DBT; however, conclusions have to be made tentatively when considering a single case study with no comparison. As discussed previously, Katz et al. (2004) found significant reductions at one-year follow-up in the DBT group, but this reduction was not significantly different to that found in the TAU group.

To recap, four out of the five studies reporting pre-post comparisons found a significant reduction over time in suicidal ideation, and observed effect sizes were large. However, only one of the studies used a comparison group and DBT was found to be no more effective than TAU in reducing suicidal ideation. This creates uncertainty about whether DBT, specifically, led to the reductions observed. The fifth study did not find a reduction in suicidal ideation over time in the DBT group.

**Suicide attempts, parasuicide and self-harm.** There were 11 studies reporting outcomes related to ‘suicide attempts’, ‘parasuicide’ or ‘deliberate self-harm’. These behaviours were measured in different ways across the studies, including: diary cards, clinical interviews, parental report, use of healthcare records, and the Lifetime Parasuicide Count interview (LPC; Linehan & Comtois, 1994).
Of the 11 studies, eight reported a reduction in these behaviours between pre- and post- treatment. Two papers did not provide outcome data at post-intervention, but reported reductions at one-year post-discharge (Katz & Cox, 2002; Katz et al., 2004). A further two studies did not make pre-post comparisons, but conducted between-groups comparisons of the total number of suicide attempts that occurred during the course of treatment (Rathus & Miller, 2002; Sunseri, 2004). These studies shall be discussed in further detail.

In the latter two studies, comparisons were made between the DBT group and a control group. In the first study, the DBT group was compared with a TAU group on the number of suicide attempts made during treatment; no significant differences were found, although the proportion of adolescents making suicide attempts was noted to be higher in the TAU group. Rathus and Miller (2002) did not conduct any within-groups analyses and there was no follow-up data, thus preventing any conclusions regarding changes in suicidal ideation over time, in either group.

In the second study (Sunseri, 2004) DBT was implemented within a residential treatment facility for adolescent females with mixed diagnoses. Here, two samples were compared: an historical sample (n=42) and a cohort of residents who received DBT (n=26). The outcome measure of interest was the number of ‘premature terminations’ precipitated by parasuicidal behaviour (a ‘premature termination’ was defined as a client who harmed herself and was admitted to a psychiatric hospital, who subsequently refused to return to treatment). It was found that 17% of participants in the pre-DBT cohort had premature terminations, which was significantly greater than the 0% found in the DBT cohort. Whilst promising, there are difficulties interpreting these findings. Firstly, there were important diagnostic differences between the groups, which may have confounded the results. Secondly, the outcome measure is questionable; there may
have been undetected incidences of self-harm which did not, therefore, result in ‘premature terminations’ and, as such, were not included in the analyses. A self-report measure may have captured the data more accurately. The conclusions that can be drawn from these two studies are limited by the lack of within-groups analyses; little can be established regarding the change in suicidal behaviours over time.

More conclusive findings were reported in the paper by Goldstein et al. (2007). In this study, 80% of the sample had a history of suicide attempts and had expressed suicidal ideation at intake, yet there were no suicide attempts made during the 12-month programme. As previously discussed, this study was limited by a small sample (n=10) and lack of a control group, preventing conclusions about causality. Similar findings were reported by Fleischaker et al. (2011) - 67% of their sample had a history of suicide attempts, but none of the participants attempted suicide during the DBT intervention or by 12-month follow-up. Unfortunately, this study was also limited by the lack of a comparison group and a small sample size (n=12).

In the earlier mentioned study by Woodberry and Popenoe (2008), parental reports were utilised to measure the number of adolescent suicide attempts. On the CBCL (item#18), parents reported a decrease in the frequency in which their child ‘deliberately harms self or attempts suicide’ ($d=0.46$). This is a positive finding, but should be considered in light of the reliance on third-party observation. There may have been suicide attempts or incidents of SH that were undetected by parents and these would not have been recorded or included in the analyses.

James, Taylor, Winmill, and Alfoadari (2008) reported the effectiveness of a 12-month DBT programme, delivered in an outpatient setting, to adolescents with chronic SH. Weekly clinical interviews were conducted during the study to determine the number of SH episodes for each client; a significant reduction was found, across the
sample, over the course of treatment. Whilst encouraging, the study could be criticised for the small sample size (n=16) and lack of a comparison group, which limits the validity of the findings. However, James and colleagues replicated these findings in another study in which they evaluated DBT for self-harming adolescents (n=25) within the ‘looked after care’ system (James, Winmill, Anderson, & Alfoadari, 2011). Again, a significant reduction was found in the frequency of SH over time; however, similar limitations were observed regarding the study design. In this paper, authors noted that participants had described using the DBT material, specifically, to reduce their self-harming behaviours.

In two of the studies, suicidal behaviours were measured alongside other behaviours and consolidated into one outcome variable. Trupin et al. (2002) measured the number of ‘behaviour problems’ (which included parasuicidal acts, aggression and classroom disruption) and Memel (2012) measured ‘life threatening behaviours’ (LTB) (encompassing suicide attempts, self-injury, and aggressive acts towards others). The former study reported the application of a 4-week DBT intervention with incarcerated female offenders across a number of prison units (‘cottages’). Within the mental health ‘cottage’, a significant reduction (pre-post) was found in the number of ‘behaviour problems’ displayed by participants, although this reduction was not significantly different to that observed in a matched historical sample who received TAU the year previously. Within the non-clinical ‘cottage’, there was no reduction in ‘problem behaviours’ (pre-post) amongst participants. Thus, DBT appeared to be effective in reducing ‘problem behaviours’ in a clinical sample, but was no more effective than TAU. In the latter study (Memel, 2012) the number of LTB’s across the sample was lower each week than at baseline, and during the final week there were none. It remains difficult to determine whether there were any notable changes in suicidal behaviours, in
these two studies, due to them being amalgamated with other behaviours into one outcome variable.

Two papers compared data obtained by participants at admission with data obtained at one year post-discharge (Katz & Cox, 2002; Katz et al., 2004). The one-year version of the LPC was utilised to record parasuicidal behaviours in the year prior to intervention, and then administered again at the 12-month follow-up. In the 2002 paper, the participant reported 143 parasuicidal acts in the year prior to DBT, compared to 113 incidents in the following year. The reliability of this finding is difficult to determine, since it reflects only a single participant. In the 2004 study, involving a larger sample (n=62), LPC data was corroborated with objective measures (emergency room visits and hospitalisations). A significant reduction was found in the number of parasuicidal acts recorded for the year prior to treatment and by the one-year follow-up. However, this finding was true for both the DBT group ($d=0.63$) and the TAU group ($d=0.73$) and there were no group by time interaction effects. Therefore, whilst DBT did appear effective in reducing the number of parasuicidal acts, it did not prove any more effective than treatment-as-usual.

In summary, all of the studies reporting pre-post change found a reduction in suicide attempts, parasuicidal behaviours, or SH. Whilst promising, only one of the studies compared pre-post change between groups (Trupin et al., 2002) and found no difference between the DBT group and the historical sample (although frequency of ‘suicide attempts’ were combined with other behaviours in the analyses). Therefore, whilst DBT appears to be related to reductions in suicidal behaviours during treatment and at follow-up, no definitive conclusions can be made regarding causality due to the overall lack of comparison data.
Non-suicidal self-injury (NSSI) Six studies investigated the effectiveness of DBT in reducing NSSI. A number of measures were used to record the frequency of these behaviours, including diary cards, self-report questionnaires (see Appendix F2), the LPC interview, and service-specific databases. There was an overall reduction in the frequency of NSSI, although in one study, the effect was not statistically significant (Goldstein et al., 2007) and in three of the studies, statistical analyses were not used (GSAR, 2004; Nock et al., 2007; Plener et al., 2009). There were two papers reporting reductions in NSSI at follow-up (Fleischeiker et al., 2011; Plener et al., 2009). Study findings and methodological issues are discussed henceforth.

Of the six studies, McDonell et al. (2010) was assessed as the most methodologically sound, by involving a much larger sample size than the other studies (n=106) and by utilising a comparison sample. The paper described a pilot evaluation of DBT in long-term inpatient care. In this investigation, DBT was the core milieu strategy for all participants, although they were assigned varying intensities of DBT, based on clinical judgement of need. The historical control group received individual, group and/or family therapies. In the DBT group, there was a significant effect of time on NSSI (accounting for age, gender and length of stay) and there was a significantly lower rate of NSSI during a 12-month period, compared to historical controls (accounting for gender, age, length of stay, and the effect of time). A particular strength of this paper was the use of a historical comparison group, although this involved reliance on retrospective data. A limitation of the study (identified by the authors) was that the implementation of DBT had been only one of many quality improvements made within the hospital during the research period; therefore, findings may have reflected other treatment efforts.
In an earlier empirical investigation, Goldstein et al. (2007) also reported a reduction in NSSI; however, this finding was non-significant. Notably, this study employed a small sample (n=10) which may have prevented a significant finding. With a larger sample, the reduction may have reached statistical significance. Unlike McDonell et al. (2010) there was an absence of comparison data, which limits the conclusions that can be made regarding causality.

Fleischaker et al. (2011) reported follow-up data for a clinical trial of DBT for adolescents with suicidal behaviour, self-injury, and borderline symptoms. Using the LPC, they measured the frequency of NSSI and found a significant reduction from pre-treatment to one-month follow-up ($d=0.89$) and a significant reduction of NSSI from pre-treatment to 12-month follow-up ($d=0.92$). In this study, there was no comparison group, preventing firm conclusions to be made regarding the unique effect of DBT. These findings do, however, suggest large treatment effects (>0.8) which could be stable over time.

Findings from the three remaining studies appear less reliable: one paper reported a single case illustration (Nock et al., 2007), one integrated DBT with music therapy (Plener et al., 2009), and the final paper (GSAR, 2004) was a non-research based service outcome report. The first paper, (Nock et al., 2007) reported a case illustration of an adolescent with major depressive disorder and borderline personality disorder who was treated with a 24-session DBT intervention. At the start of the intervention, the client reported NSSI once per day, 2-3 times per week, in the prior six months. However, by the 6th week of treatment, the frequency of NSSI (measured using a diary card) had reduced to zero, with only two further incidents reported in the remaining six weeks. Whilst promising, this finding is limited since it reflects only a single client with no treatment comparison.
Plener et al. (2009) reported a pilot study of a combined DBT and music therapy programme for self-injuring adolescents. The study involved five participants, with a range of diagnoses, reporting previous urges or acts of NSSI. It was found that four out of five participants did not injure themselves at the end of the programme or at the two-month follow-up. Authors reported that the rate of NSSI was consistently reduced within the first sessions and remained stable in the latter sessions. This paper is limited by a small sample size and lack of statistical analyses. It is also unclear in the paper as to which elements of the DBT programme were utilised; although correspondence with the authors clarified that mindfulness strategies were taught and practised throughout the programme. Nevertheless, it cannot be established from the study which aspects of the programme were effective – DBT or music therapy – or whether the intervention caused the effect at all (in the absence of a control group).

The third paper (GSAR, 2004) reported outcomes from a ‘non-profit human service agency’ - a community residence using DBT to treat adolescents with ‘extreme emotional dysregulation’. Nine of the 20 residents were admitted to the service with a history of NSSI, reporting 23 incidents in the six months prior to admission. In the first six months of the programme, there were 12 reported incidents amongst these residents, only 1 incident in the second six-month period, and no further incidents amongst the four residents who stayed on the programme for longer than a year. At six months following discharge, none of these residents reported any further incidents of NSSI. Whilst the outcome data is encouraging, the sample size was small and there was no comparison group. Moreover, data reporting was minimal and no statistical analyses were employed.

To summarise, all six papers reported positive findings in relation to NSSI. However, only half of the studies reported findings of statistical significance. DBT was
consistently associated with reductions in NSSI, and was found to be more effective than TAU in one study (McDonell et al., 2010). The latter finding is promising, however further work is needed to replicate this and to permit more definitive conclusions regarding the effect of DBT on NSSI.

The Impact of Mindfulness-Based Approaches on Depression

Nineteen studies reported the impact of mindfulness-based approaches on depressive symptoms. Ten studies evaluated the impact of DBT, three considered ACT, two investigated MBSR, and four studies reported outcomes following ‘mindfulness training’. For specific details regarding the measures used, see Table F3 (Appendix F).

Dialectical behaviour therapy (DBT). Ten studies investigated the impact of DBT on depressive symptoms, all of which reported a reduction in depression over the course of treatment; however, there was considerable variation in the quality of the research. Katz et al. (2004) compared DBT with TAU and found a significant reduction in depression scores from pre- to post- treatment in both conditions, and a continued main effect of time for both groups at the one-year follow-up. There were no interaction effects; therefore, whilst DBT was associated with reductions in depressive symptoms over time, it did not appear to be any more effective than TAU.

Wasser, Tyler, McIlhaney, Taplin, and Henderson (2008) also used a control group in their study investigating the effectiveness of DBT delivered on an inpatient unit. The control group (n=12) was a matched sample of adolescents from a different unit receiving ‘standard therapeutic milieu’ (STM), which involved a behavioural group, individual therapy, family therapy, and medication. A significant improvement was found for depression in the DBT group (n=12), whilst a ‘trend significant’ improvement was reported for those receiving STM. In this study, DBT demonstrated
significant symptom improvement over STM on the depression subscale, suggesting that DBT was more effective than STM in treating depression. This study had methodological limitations in relation to treatment adherence – some components of DBT were not delivered and not all of the treatment sessions were conducted by a DBT trained clinician, therefore the exact exposure to DBT techniques could not be objectively quantified.

In previously discussed studies, significant reductions in depression scores were found for adolescents treated with DBT. Rathus and Miller (2007) found a significant decrease in scores on the depression scale of the Symptom Checklist 90 – Revised (SCL-90-R; Derogatis, 1977) during the course of treatment, and Goldstein et al. (2007) reported a significant improvement between pre and post treatment in depressive symptoms ($d=0.7$). James et al. (2008) also reported improvements in depression in their DBT group at both post-treatment and at 8-month follow-up assessment. Similarly, Woodberry and Popenoe (2008) found a significant reduction in depression in their sample on both the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1987) ($d=0.84$) and the depression subscale of the TSCC ($d=0.80$); notably, the effect size was large on both measures (i.e. >0.8). Fleischaker et al. (2011) reported a significant reduction in depression in their sample, as measured using the Depression Inventory for Children and Adolescents (DIKJ; Steinsmeier-Pelster, Schumann, & Duda, 2000) and the depression dimension of the SCL-90-R, from pre-treatment to 12-month follow up. Similarly to Woodberry and Popenoe (2008), the effect size was found to be large for both measures ($d=1.51$ and $d=2.14$ consecutively). All of these studies reported significant improvements in depression following a DBT intervention; however, they all employed pre-post designs with no control group. Therefore, whilst DBT appeared to be effective in reducing depression, causality cannot be established.
In 2006, Nelson-Gray et al. reported on the effectiveness of a 16-week DBT intervention, delivered in an outpatient setting, with adolescents diagnosed with oppositional-defiant disorder (n=32). Significant reductions in depressive symptoms were found from baseline to post-DBT and, notably, 83% of participants were found to move from ‘clinical’ to ‘non-clinical’ status. These findings are encouraging, although the methodology was limited by the lack of a comparison group. Additionally, the study excluded participants assessed as ‘suicide risk’, thereby limiting generalisability of the findings to individuals currently displaying suicidal phenomena.

Two studies examined the effectiveness of DBT integrated with other treatment approaches and, as such, the findings are inconclusive in terms of DBT’s specific impact on depression. Plener et al. (2009) found that the mean score across the sample on the Beck Depression Inventory – 2nd edition (BDI-II; Beck, Steer, & Brown, 1996) reduced during the course of treatment; however, no statistical analyses were employed due to the small sample (n=5), thereby limiting the reliability and generalisability of the findings. Welch and Kim (2012) reported a case illustration of an adolescent with trichotillomania who received ‘DBT-enhanced-CBT’. The participant showed a reduction in depressive symptoms from baseline to post-treatment and follow-up. In both studies, it remains difficult to assess which elements of the treatment were effective – whether it was the DBT, the additional therapy, a combined effect, or something unrelated to the treatment. However, it is noteworthy that in the latter study the client gave positive feedback regarding the specific utility of the mindfulness techniques.

Acceptance and commitment therapy (ACT). Three studies assessed the efficacy of ACT in reducing depression. Two of these studies provided DBT to adolescents experiencing chronic pain. Wicksell et al. (2009) investigated ACT versus
TAU delivered in a pain treatment service (n=32). Consecutive patients were randomised to one of two conditions: the ACT group received 10 weekly individual sessions and 1-2 sessions with parents, whilst the TAU group received a mean of 10.6 sessions and occasional family sessions. The ACT group showed a decrease in depression scores (pre-post) but this did not meet statistical significance. There was a difference between the groups in the change over time, in favour of ACT, although this was slightly above the criteria for statistical significance ($p=0.055$). This study was limited by a relatively low sample size but was strengthened by the use of a comparison group and randomisation of participants to conditions. Gauntlett-Gilbert et al. (2013) also provided ACT to participants with chronic pain (n=98), albeit there was no comparison group. In this study, ACT was delivered as a residential programme over three weeks, totalling 90-hours treatment time. A significant reduction was found across the sample (n=98), from pre- to post- intervention, however this was no sustained at follow-up ($d=0.22$).

Hayes et al. (2011) applied ACT to a population of depressed adolescents (n=35). Participants were referred to an outpatient service and randomly allocated to a treatment condition, ACT or TAU. The ACT group showed significant improvement in depressive symptoms at post treatment ($d=-0.38$), whilst the TAU group did not significantly improve. At three months follow-up, the ACT group continued to show significant improvements and the effect size was large ($d=-1.45$). Between-groups analyses found that adolescents in ACT group showed significantly greater improvements over time than the TAU sample. Moreover, 58% of the ACT group displayed ‘clinically significant change’. Whilst these findings are encouraging, there were concerns regarding treatment fidelity. All of the therapists received ACT training, but were required to deliver both treatments (ACT and TAU) and they also received
supervision in a group forum; therefore, it is possible that there was contamination between treatment conditions. Additionally, the ACT group received more therapy hours than the TAU group, which could explain the larger improvements. However, the use of a comparison group and random allocation to treatment conditions should be considered a strength of the research design. Finally, it is notable that the study excluded ‘actively suicidal’ participants, thereby limiting the generalisability of the findings to adolescents displaying suicidal phenomena.

**Mindfulness-based stress reduction (MBSR).** Two studies investigated the impact of MBSR in treating adolescent depression. Biegal et al. (2009) reported outcomes for an MBSR treatment programme for adolescent outpatients with a range of clinical diagnoses. In this study, MBSR was offered as an adjunct to TAU. A control group was utilised in which participants received TAU-only. The intent-to-treat sample (n=102) receiving MBSR+TAU, showed significant improvement in depressive symptoms at post-treatment and follow-up, and the effect size was large ($d=0.95$). The TAU-only group also showed improvement, but had a smaller effect size ($d=0.31$). Moreover, there was a significant group by time interaction effect favouring MBSR+TAU. The findings suggest that the addition of MBSR to TAU was related to improvements in depression. A positive aspect of this study is its novel area of enquiry, being the first to conduct a randomised trial of MBSR with an adolescent population. However, there are limitations; there was considerable variance in TAU and the MBSR group may have had more treatment time. Additionally, the study assessed a very broad range of indicators and no adjustments to statistical significance levels were made.

Lau and Hue (2011) examined the impact of a six-week MBSR-based programme delivered to a non-clinical sample of adolescents in schools. In this study, there was matched control sample of school children who did not receive the
intervention. A significant difference was found between the groups in relation to change over time on combined depression and stress scores on the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Post-hoc t-tests revealed that the control group showed deterioration in depression levels at post-treatment, whilst the intervention group showed small, albeit non-significant, improvements. The authors interpreted this finding to suggest that the mindfulness programme significantly reduced the depression levels amongst adolescents in the intervention group; however, this is difficult to establish from the results.

**Mindfulness training.** Four studies evaluated the effectiveness of ‘mindfulness training’ on symptoms of depression. Each of these studies cited MBSR, MBCT or mindfulness-related literature as the basis for the interventions; however, there was variation in how these were delivered.

Zylowska et al. (2008) evaluated the impact of an 8-week mindfulness-training programme for adolescents with ADHD. The authors reported ‘negligible’ changes in depression from baseline to post-treatment. The study was limited by a small sample, which the authors also noted was ‘atypical’ in respect of the ADHD population, thereby limiting generalisability of the findings. Furthermore, the programme was applied to both adolescents and young adults, which may have affected the suitability of the intervention for the younger population and this was not controlled for in the analysis.

Tan and Martin (2010) reported a study into the impact of a 5-week ‘mindfulness intervention’ (informed by MBSR and MBCT) for adolescents with mixed diagnoses. They found significant reductions in depression scores, across the sample, from baseline to post-treatment and follow-up ($d=0.42$). These findings are very promising, but should be considered in light of the small sample size employed ($n=10$).
Furthermore, adolescents experiencing ‘acute suicidality’ were excluded from the study, preventing generalisability to this population.

Two studies examined the use of mindfulness programmes in schools and reported mixed findings. Joyce et al. (2010) piloted a 10-week ‘mindfulness meditation’ programme, informed by MBSR, to adolescents in two schools and investigated the impact on their mental health status. There was a significant improvement in depression scores on two measures (Strengths and Difficulties Questionnaire [SDQ], Goodman, Ford, Simmons, Gatward, & Meltzer, 2003; Child Depression Inventory [CDI], Kovacs, 1992), albeit the effect sizes were small ($d=0.38$ and $d=0.27$ consecutively). Whilst encouraging, the findings are limited by methodological limitations, such as the lack of control over confounding variables (e.g. other interventions delivered in the schools). Schonert-Reichl and Lawlor (2010) described a ‘mindfulness education programme’ delivered across 12 schools and examined the impact on a non-clinical sample. In this study, a control group was used, consisting of pupils from schools where the programme was not implemented. In this study, there was no difference in the degree of change in depression between the mindfulness group and the control group. It is notable that both interventions were delivered by teachers (rather than clinicians), which may have affected treatment fidelity.

Summary of Findings Related to Depression. To recapitulate, those studies investigating the impact of DBT (not combined with another therapy) reported significant improvements in depression from pre-post treatment. Furthermore, three studies reported effect sizes in the medium to large range. In the two studies that employed control groups, findings were mixed; DBT was superior to STM in one study, but no more effective than TAU in another. Findings are inconclusive; DBT may be
effective in treating depression, but further work is required to substantiate these findings.

Symptoms of depression appeared to improve following ACT interventions. In two of the studies, there was an improvement in depression, favouring the ACT condition over TAU. Two studies reported follow-up data – one study found a continued main effect for ACT in reducing depression, whereas the other study reported that positive changes were not sustained at follow-up.

MBSR also appeared to be effective in reducing depression. In the study investigating MBSR+TAU, improvements in depression from pre-post were superior to the improvements seen in the TAU condition and the related effect size was large. The second study reported a positive impact of MBSR on depression, although the conclusions were questionable. Findings related to the impact of ‘mindfulness training’ are mixed. In the study utilising a control group, there were no differences found in the change in depression over time. Two studies found significant reductions in depression following the intervention, although the effect sizes were small and no comparison groups were used. A third study reported minor improvements in depression following a mindfulness intervention.

Discussion

The 28 studies included in this systematic review represent a relatively new area of enquiry, that is, the use of mindfulness-based approaches with adolescents and their impact on suicidal phenomena and depression. Findings were predominantly positive, despite some significant methodological flaws. The evidence base is encouraging and, whilst preliminary, appears to suggest that further investigation into the impact of mindfulness-based approaches for adolescent suicidal phenomena and depression is
warranted. Indeed, suicidal ideation improved in the majority of studies, as did the frequency of reported suicide attempts, parasuicidal behaviours or acts of SH. Rates of NSSI were also observed to decrease in all of the studies measuring this outcome. A large proportion of studies investigating depression reported improvements, a finding which was most prominent in investigations of DBT and ACT.

Methodological Issues

The studies included in this review had significant methodological weaknesses, precluding firm conclusions about the unique effects of mindfulness-based approaches on suicidal phenomena and depression in adolescents; these shall be considered in turn.

Firstly, a preponderance of studies examined the effects of interventions using pre-post research designs with no comparison group. Whilst these studies often reported positive change, of statistical significance, they did not control for confounding variables (such as placebo effects, maturation, or spontaneous remission), nor did they compare the intervention with other treatments. Some studies did use between-groups designs, thus controlling for potentially confounding variables. However, these were often non-randomised methodologies and sometimes involved a non-equivalent sample, thus threatening the internal validity of the findings.

Sample size was a significant methodological flaw amongst the studies in the review. As highlighted by Baer (2003) in a similar review, and according to Cohen (1977), an 80% chance of detecting a medium-to-large treatment effect ($d=0.70$) using a two-tailed t-test (at alpha=0.05), a sample of 33 participants would be required. Only six studies in this review would have met such criteria. In addition to sample size, participants across the studies were predominantly female, thereby preventing generalisability of the findings to male populations.
Another methodological limitation amongst the studies is in relation to the integrity of treatment implementation. According to Kazdin (1994), evaluation into the effects of any treatment intervention requires that it be appropriately administered. Few studies measured treatment adherence and there was a lack of information regarding treatment protocols. Furthermore, the treatment programmes were delivered by a wide range of professionals – including psychiatrists, psychologists, nurses, social workers, occupational therapists and teachers – and also students of different levels (e.g. masters level, doctoral level etc.). Whilst multi-disciplinary delivery of interventions can be positive, there should be a measure of treatment adherence in place to ensure treatment integrity is upheld, particularly given the differential training, experience and style of different disciplines. It is also notable that there was substantial variation in the delivery of interventions in respect of the frequency and duration of sessions, and the length of the treatment programme. Additionally, programmes were often ‘modified’ to meet the needs of specific client groups or settings, but these modifications were not always adequately described.

Finally, it is notable that the majority of papers investigated the use of DBT. This is unsurprising given that DBT was originally developed to target ‘parasuicidal’ behaviours. However, since this approach uses mindfulness techniques alongside other strategies, it is difficult to know whether mindfulness per se led to the improvements observed in participants, or whether other aspects of the treatment were equally or more influential.

**Future Investigations**

In light of the potential benefits of mindfulness highlighted by this review, and the increasing popularity of mindfulness-based approaches in clinical settings, it is imperative that further research involves methodologically robust evaluations of the
effects of these approaches. This is particularly important if they are to be utilised with individuals at risk of suicide or SH. Further investigations should address some of the methodological limitations highlighted by this review, to enable more clarity in the results.

It is acknowledged that research into the use of mindfulness-based approaches with adolescents is a relatively new area of enquiry; therefore case illustrations, pilot studies and small quasi-experimental designs are somewhat timely and appropriate. However, in light of the positive findings obtained to date, future research should involve randomised controlled trials (RCTS) to facilitate the establishment of causality and to enable firm conclusions to be made regarding the unique impact of mindfulness training. Comparisons between mindfulness-based approaches and existing evidence-based interventions would also be useful. Furthermore, studies investigating the relative contribution of the different treatment elements within DBT and ACT would help to establish whether ‘mindfulness’ has any exclusive effects.

Further work should aim to recruit larger samples to allow for thorough statistical analyses and the detection of adequate effect sizes. Additionally, efforts should be made to recruit more males within the sample pool, as they are currently under-represented in these studies.

Adherence to standardised intervention formats is also encouraged, to allow studies to be adequately replicated, and therefore compared, across different settings and with different samples. Furthermore, clinicians should be appropriately trained in the interventions, with measures of treatment adherence being consistently utilised and reported and supervision being provided from a suitably trained clinician.
Future empirical work should also consider specific issues pertaining to adolescent participants. Programmes designed for adults should be adapted for adolescents, to ensure developmental appropriateness. For example, they should consider the appropriateness of the setting, the cognitive abilities of young people, the suitability of the content and so forth. Whilst some of the reviewed studies did use adapted protocols, such as DBT for adolescents (DBT-A, Miller et al., 2007), this was not consistent. Future investigations should evaluate age-appropriate interventions and endeavour to use outcome measures designed for this age group.

Another area for consideration is the involvement of families in both the interventions and reporting of outcomes. Many of the studies involved families in the interventions (particularly DBT), however only one study used parental observations in their data analysis. Many of the studies included in the review relied exclusively on adolescent self-report, data that could have been corroborated with third-party observations and/or institutional data.

**Limitations of the Review**

The review findings must be considered in light of several limitations. The search strategy was limited to English Language papers; therefore, studies involving participants from different cultures may have been missed. Additionally, the organisation and synthesis of findings may be criticised due to the terminology used and the placing of SH behaviours under the subheading ‘suicidal phenomena’ (which may be considered inappropriate by some researchers).

Finally, this review considered a limited number of risk-factors for suicide in adolescents – namely, suicidal ideation, suicide attempts, SH, and depression. It is recognised that there are a plethora of known risk factors for suicide adolescence
(including substance abuse, trauma, anxiety etc.). However, to include all of the known proximal and distal risk factors would have been beyond the scope of this review. It was felt that the inclusion of depression as an outcome of interest was both appropriate and useful; however, further reviews may wish to consider the impact of other risk factors.

Clinical Implications and Conclusions

In terms of clinical implications, this review indicates that mindfulness-based approaches may be helpful in reducing suicidal phenomena and depression in adolescents. However, these findings are provisional and further work is needed. Therefore, clinicians are encouraged to detach from the current popularity of mindfulness-based approaches in the field and to consider carefully the presented evidence base. Mindfulness-based approaches could be employed in addition to established treatment interventions for this population, however their use as the predominant approach may be considered premature on the basis of the presented research. To conclude, whilst the current evidence base is certainly encouraging, further work is needed, using rigorous methodologies, to establish clarity around the unique impact of ‘mindfulness’ on suicidal phenomena and depression with adolescent clients.

Acknowledgments

I would like to thank Lynsey Fulton (doctoral student) for providing an independent quality assessment of a sample of the papers included in this review

References

References marked with an asterisk indicate studies included in the review.


Goleman, D. J. & Schwartz, G. E., (1976). Meditation as an intervention in stress...


of an extension of a community dialectic behaviour therapy (DBT) programme to adolescents in the looked after care system. Child and Adolescent Mental Health, 16(1), 9-13.


evidence in support of a robust association. *Depression and Anxiety, 26,* 758–763.


*Tan, L., & Martin, G. (2012). Taming the adolescent mind: preliminary report of a mindfulness-based psychological intervention for adolescents with clinical...


PAPER TWO

An Investigation of the Impact of the Broad Minded Affective Coping (BMAC) Technique with Adolescents Experiencing Suicidal Phenomena: A Case Series.

Prepared in accordance with requirements for submission to Behaviour Research and Therapy (Appendix G)

WORD COUNT: 7,725
Abstract

There is a mounting body of literature on treatment approaches designed to increase positive emotion. A technique that has been proposed is ‘Broad Minded Affective Coping’ (BMAC; Tarrier, 2010) which aims to elicit positive past memories and the positive emotional states associated with them. Preliminary research into the utility of the technique has yielded positive results. The current study investigated the immediate impact of BMAC on self-reported hope and happiness and the impact of BMAC practice over time. Outcomes of interest included: changes in suicidal ideation, self-harm, hopelessness, depression, and perceived access to emotion regulation strategies. A case-series methodology was utilised and participants were five female adolescent psychiatric inpatients who had recently displayed suicidal behaviours. Outcomes were positive –BMAC practice appeared to be associated with improvements in all areas of interest. Whilst case-series designs are considered appropriate for exploratory investigations of novel approaches, findings are considered in light of the methodological limitations of such designs. Further investigations into the efficacy of the BMAC technique are recommended, alongside further research into positive psychological interventions for adolescents experiencing suicidal phenomena.

Keywords: Suicide. Self-harm. Adolescents. Case-series. Positive emotion.
Adolescent suicide is a major public health concern; international figures show that suicide is the second most common cause of death in young people and the most common cause of death in female adolescents aged between 15 and 19 years (Patton et al., 2009). Moreover, it has been suggested that prevalence may be underestimated, as coroners can be reluctant to give the verdict of suicide following the death of a young person (Gosney & Hawton, 2007). In 2005, Evans and colleagues conducted a review of literature exploring the prevalence of adolescent suicidal phenomena – a term used to integrate attempted suicide, self-harm, suicidal thoughts, and suicidal threats or plans (Evans, Hawton, Rodham, & Deeks, 2005). It was found that the mean proportion of adolescents who had attempted suicide at some point in their lives was 9.7%, with 6.4% reporting suicide attempts in the previous year. Additionally, 29.9% of adolescents had thought about suicide during their lifetime, with 19.3% reporting suicidal ideation in the past 12 months (Evans et al., 2005).

Rates of self-harm amongst adolescents are also perturbing. Self-harm (SH) which denotes any non-fatal act of SH, irrespective of the motive or extent of suicidal ideation (Hawton et al., 2003; National Institute for Clinical Excellence [NICE], 2011), is a predominant predictor of death by suicide in adolescent populations, increasing the risk ten-fold (Hawton & Harriss, 2007). This is worrying, since around 10% of adolescents report to have self-harmed, some of whom described suicidal ideation at the time (De Leo & Heller, 2004; Hargus, Hawton, & Rodham, 2009; Hawton, Rodham, Evans, & Weatherall, 2002; Madge et al., 2008; Moran et al., 2012). In clinical populations, prevalence of SH is even higher, with 40-60% of young people reporting previous SH (Klonsky & Muehlenkamp, 2007). Regardless of the initial intent of the SH, these behaviours can significantly increase the risk of further injury or death.
Psychological autopsy of adolescent suicides suggests that mental disorders are often present, with affective disorders being common (Brent et al., 1993; Patton et al., 2009; Shaffer et al., 1996; Sourander et al., 2009). Depression is often cited as the most likely risk factor for suicide in young people (Brent et al., 1993; Shaffer et al., 1996). Moreover, it has been suggested that untreated depression could be the leading cause of adolescent suicide (King & Vidourek, 2012). This is concerning, given the prevalence of depression amongst young people; last year 28.5% of teenagers were reported to be depressed (Centres for Disease Control and Prevention, [CDC], 2012).

Positive Psychological Interventions

In light of the alarming rates of suicide amongst young people, it has been suggested that researchers endeavour to establish effective treatment strategies for working with adolescents who display suicidal phenomena (Gould, Greenberg, Velting, & Shaffer, 2003; Ougrin, Tranah, Leigh, Taylor, & Asarnow, 2012). An avenue worth exploring may be the use of positive psychological interventions –“treatment methods or intentional activities that aim to cultivate positive feelings, behaviours or cognitions” (Sin & Lyubomirsky, 2009, p. 468) – given the emerging body of research suggesting that such interventions can effectively boost well-being and ameliorate depression (see Sin & Lyubomirsky, 2009, for a review). In their meta-analysis of positive psychological interventions, Sin and Lyubomirsky (2009) found that techniques such as writing letters of gratitude, rehearsing optimistic thinking and replaying positive experiences, all resulted in increases in well-being.
There is also research suggesting that positive constructs can buffer against suicide (Rebellon, Brown, & Keyes, 2000) and depression (Lewisohn, Redner, & Seeley, 1991). Additionally, it has also been noted that within some psychological models, such as dialectical behaviour therapy (Linehan, 1993a, 1993b), brief solution-focused therapy (O’Connell, 2003) and narrative therapy (White & Epston, 1990), positive emotions and positive experiences have a central therapeutic role (Morris, Simpson, Sampson, & Beasley, 2013). The effectiveness of positive constructs in improving well-being has also been reported in studies involving adolescents (Bohanek & Fivush, 2010; Froh, Yurkewicz & Kashdan, 2009). Consideration of the aforementioned literature suggests that positive approaches to the treatment of suicidal adolescents warrant further investigation.

**Positive Emotions in Therapy**

There is a growing recognition that positive emotional experiences, in particular, could be helpful in clinical practice (Dunn, 2012; Kimball, 2009; Tarrier, 2010; Wood & Tarrier, 2010). This idea is based on psychological theory and a body of literature regarding the benefits of experiencing positive emotions.

The *broaden and build* theory of positive emotion (Fredrickson, 1998) outlines how emotions function to create pathways to act in particular ways, known as *specific action tendencies*. The example is given that the feeling of ‘fear’ creates an urge to escape, whilst the feeling of ‘joy’ creates an urge to play or be playful (Fredrickson, 2001). The theory posits that negative emotions are threat-focused and can restrict a person’s attention, cognition and associated behaviours, whereas positive emotions, on the contrary, are not threat-focused and can actually expand or *broaden* the range of thoughts and actions in which a person engages. This broadening of the cognitive
context might lead to flexible thinking, creativity, enquiry, inquisitiveness and problem-solving, and might facilitate social behaviour and interaction (Fredrickson, 1998, 2001; Garland et al., 2010). It is proposed that these actions, in turn, may create further opportunities for positive emotion, thereby creating an upward spiral into well-being (Fredrickson & Joiner, 2002). The theory also contends that, over time, the ‘broadening’ triggered by positive emotions could build a range of psychological resources, such as resilience, optimism and creativity, which in turn may improve an individual’s coping ability (Fredrickson, 2003).

There is empirical evidence to support the broaden-and-build theory, indicating that positive emotions do broaden attention, cognition and behaviour, and can build physical, intellectual and social resources (Fredrickson & Branigan, 2005; Kahn & Isen, 1993; Rowe, Hirsch, & Anderson, 2007; Schmitz, De Rosa, & Anderson, 2009; Soto et al., 2009). There are also findings that the experiences of positive emotions can reduce or undo the effects of negative emotion (Fredrickson & Levensohn, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000) and evidence to suggest that even transitory experiences of positive affect can lead to increased psychological resilience and life satisfaction, in adult samples (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Tugade, Fredrickson, & Barrett, 2004).

It follows from this research that the introduction of positive emotion, at times when negative emotions are heightened, may be helpful. Positive emotion may expand thought-action repertoires (the range of potential actions the body and mind are prepared to take) and boost cognitive processes, thus allowing for positive action (perhaps at times when SH would normally be the default coping strategy). Indeed, Joiner et al. (2001) found that positive moods were associated with increased problem-
solving abilities and reduced suicidal behaviour in a sample of military personnel experiencing mental health difficulties.

Research into the role of positive emotion in youth is limited. One study has investigated the broaden-and-build theory with an adolescent sample and found that higher levels of experienced positive emotion were associated with more adaptive coping (Reschley, Huebnar, Appleton, & Antaramian, 2008). It was concluded that experiences of positive emotion were related to broadened cognition (improved problem-solving) and enhanced coping strategies, such as support-seeking (Reschley et al., 2008). Such benefits of positive emotional experience could be helpful for young people in emotional distress.

The possibility of experiencing positive emotion during a negative event might seem unfeasible; yet there is evidence that positive and negative emotion can co-exist (Cohn et al., 2009; George et al., 1995). Thus, a young person experiencing negative emotion might still be able to experience positive emotion and benefit from this experience. There is preliminary research suggesting that people can experience positive emotions even when faced with the most difficult circumstances, such as the loss of a child or chronic illness (see Folkman & Moskowitz, 2000).

**Broad Minded Affective Coping (BMAC)**

The potential clinical utility of positive emotional experiences inspired the development of a clinical technique known as ‘Broad Minded Affective Coping’ (BMAC; Tarrier, 2010). The BMAC method aims to elicit and enhance positive emotion by using cued recall and reliving of personal positive memories. BMAC practice involves the person receiving prompts (as questions or suggestions) which help
them to scaffold sensory, emotional, and cognitive aspects of a personal positive memory. Tarrier (2010) devised the BMAC method by drawing on evidence of an association between autobiographical memories and positive affect (Cabellero & Moreno, 1993) and the role of mental imagery in psychopathology (Hackmann & Holmes, 2004). The method was described as fitting into the broad remit of affect regulation and Tarrier (2010) postulated that it could be used in therapy in two ways: to increase the occurrence of positive affective states and the related psychological benefits, and to elicit positive mood and facilitate the initiation of behaviour incompatible with depression and reduced motivation. A number of benefits for the individual were described, including: being able to focus attention on a positive memory and achieve a balance of positive and negative memories, being able to regulate emotion, and to learn and implement a coping strategy.

These benefits of BMAC practice might be helpful for adolescents displaying suicidal behaviours, including SH, as these young people can often struggle with emotional regulation (Chapman, Gratz, & Brown, 2006; Gratz, 2007; Klonsky, 2007) and are described as having a narrow range of healthy coping strategies (Gratz & Roemer, 2008). Practice and acquisition of the BMAC method might help to extend a young person’s coping repertoire and allow them an opportunity to develop a sense of control or mastery over their emotions: mastery has been found to be an important component of psychological health and well-being (Mirowsky & Ross, 1999; Shanahan & Bauer, 2004).

An additional proposed benefit of BMAC practice is that it may boost feelings of hope, due to its use of autobiographical memories (Johnson, Gooding, Wood, Fair, & Tarrier, 2013). To support this postulation, Johnson et al. (2013) cited evidence that
autobiographical memory recall is linked to the ability to generate hopefulness (D’Argembeau, Raffard, & Van der Linden, 2008; Evans, Williams, O’Louglin, & Howells, 1992). They further suggested that BMAC may be helpful for individuals for whom reduced hope is associated with suicide risk.

Practice of the BMAC technique over time might also be helpful; the broaden-and-build theory of positive emotion postulates enduring effects of recurrent experiences positive emotion. For example, Fredrickson (2003) proposed that the experience of positive emotion can momentarily broaden a person’s mode of thinking, which can improve their ability to cope with stress, and that, over time, and with repeated experiences of positive emotion, this style of ‘broad minded’ coping might become habitual.

Support for the BMAC method has been provided by case-study evidence and two empirical investigations. Tarrier (2010) discussed its use with individuals with post-traumatic stress-disorder (PTSD) and depression and found it to be acceptable and feasible procedure. Panagioti, Gooding, and Tarrier (2012) examined the effectiveness of BMAC with individuals diagnosed with PTSD and found that participants in the BMAC condition experienced greater increases in positive emotion and greater reductions in negative emotion than participants in a control condition. Johnson et al. (2013) examined the impact of the BMAC method on mood, with a sample of participants diagnosed with schizophrenia-spectrum disorder. They found that participants who took part in the BMAC procedure showed greater increases in hope and happiness than participants in a control task. This research supports BMAC as an effective method for inducing and boosting positive affect amongst individuals with psychological difficulties.
The Current Investigation

The current research investigates the impact of the BMAC technique with adolescents who have recently experienced suicidal phenomena. The study had a number of aims: to carry out a further investigation into the effectiveness of the BMAC method in enhancing positive emotion (happiness and hope), to establish its utility and feasibility with an adolescent population, and to examine the impact of practising the BMAC technique over time. The study investigated the impact of the BMAC method on suicidal ideation, SH, depression, hopelessness and perceived access to emotion regulation strategies.

When deciding upon the target population and setting for the current study, the authors considered recommendations by Stanley et al. (2009). Stanley and colleagues highlighted the importance of investigations into techniques that aim to reduce risk factors for suicide, and suggested that such techniques would be most effective if they targeted these risk factors during acute suicidal crises. They argued that intervening with people who have recently self-harmed or attempted suicide is crucial because these behaviours are predictive of future suicidal behaviour (Stanley et al., 2009). With these points in mind, and with an overall interest in conducting ‘real life’ research that examines practical applicability within clinical populations, this study took place on an adolescent inpatient ward, with the aim of recruiting young people who had recent experiences of suicidal ideation or SH (with or without suicide intent).
Method

Design

The case-series involved an A-B direct replication design (Barlow & Hersen, 1984) to evaluate the effectiveness of the BMAC technique with young people who had recent experiences of suicidal ideation or SH (irrespective of the intent). Participants attended three baseline sessions, four treatment sessions, and a final session, which involved the completion of measures, and a verbal debrief.

Participants

Five participants with histories of suicidal ideation or SH were recruited to the case-series. Inclusion criteria were (a) aged 13-18 years, (b) male or female, (c) psychiatric inpatients (either informal or detained), (d) experiencing suicidal ideation or SH within the past month (determined by self-report or clinical records). Young people were excluded from the study if they were (a) experiencing acute psychosis, or (b) had a body mass index (BMI) < 16. These exclusion criteria were applied, as it was felt that these young people might be too distressed, thought disordered, or physically unwell to use the BMAC technique or remain engaged for the duration of the study.

Eleven people were approached to take part in the study. Six people (2 male, 4 female) decided not to take part. Reasons for not participating were given as follows: the young person did not think that they would be in hospital long enough to complete the study (n=2), the young person did not wish to engage in psychological interventions (n=2), the young person initially agreed but was then notified of a potential transfer to another hospital, so later declined (n=2). The remaining five participants (described below) completed the study.
Potential participants were identified on admission to the ward and enrolled in the study if they met the inclusion criteria and provided full consent. Participants were recruited during the assessment phase of their hospital admission, to minimise any overlap with concurrent psychological interventions. Participants were not prevented from accessing other therapies during the course of the study, as this was considered unethical. However, the timing of recruitment meant that the participants’ likely involvement in other therapies was minimised; thereby reducing the potential confounding effects of additional therapeutic input.

Participant 1: was a 17-year old White British female admitted into hospital following a serious suicide attempt involving an overdose of tablets. The suicide attempt was described as an effort to escape from increasing difficulties at home. Participant 1 reported feeling low in mood and hopeless about her family situation and the possibility of change. A history of depression was described, in the context of a problematic upbringing and ongoing adversity within the family. Participant 1 also reported a history of SH, which she described as a method of punishing herself, regulating her emotions, and communicating her distress to others.

Participant 2: was a 16-year old White British female who has admitted into hospital following an increase in suicidal ideation and thoughts to SH. Participant 2 stated that she wanted to end her life, due to believing that nobody loved her and that life was pointless. She described being bullied in school and having difficulties at home. Participant 2 described self-harming as a coping mechanism, to help distract from her difficult feelings about herself and her situation.

Participant 3: was a 17-year old White British female admitted into hospital following a serious suicide attempt involving an overdose of tablets. Participant 3
described her suicide attempt in the context of feeling hopeless about her future, and as a method of escape from the experience of “painful memories”. She described a difficult upbringing, which included a number of significant losses and experiences of abuse. She reported ongoing symptoms of PTSD and periods of low mood. Participant 3 described using SH as a method of distraction from negative thoughts and recurrent ‘flashbacks’ of difficult past experiences.

Participant 4: was a 17-year old White British female who was admitted into hospital after making repeat suicide attempts, involving walking in front of moving vehicles. Participant 4 reported that she had wanted to end her life because she was a “bad person and deserved to die”. Participant 4 described a problematic childhood; she was severely neglected by her parents and had been subsequently taken into care. She had been sexually assaulted on a number of occasions and had made a number of previous suicide attempts. Participant 4 described ongoing feelings of shame and guilt and feelings of hopelessness about the future.

Participant 5: was a 16-year old White British female, admitted into hospital following a deterioration of mood and an increase in the severity of self-harming behaviours. Participant 5 began self-harming after her parents had discovered she was having an inappropriate relationship and had reported this to the police. She described her SH as a way of managing overwhelming feelings and as a way to communicate her distress to others. She reported a history of being bullied and said that she “hated” herself. Participant 5 presented with low self-esteem and described ongoing difficulties with interpersonal relationships.

Since all of the participants in the sample were aged 16 or over (and were deemed Fraser competent) parental consent was not required.
Measures

Participants completed a range of measures during the study, to assess depression, suicidal ideation, frequency of SH, hopelessness, emotional regulation, and feelings of hope and happiness.

*Depression Inventory for Youth (BDI-Y; Beck, Beck, Jolly & Steer, 2005)*: The BDI-Y (Appendix H) is a 20-item self-report scale designed to identify symptoms of depression in children and adolescents. The BDI-Y has good internal consistency reliability (Stapleton, Sander, & Stark, 2007) and good test-criterion validity, with higher levels of distress found in clinical samples versus controls (Beck et al., 2005). The BDI-Y was completed each week throughout the study.

*Beck Hopelessness Scale (BHS; Beck & Steer, 1988)*: The BHS (Appendix I) comprises 20 true-false items that reflect hopelessness (e.g. ‘my future seems dark to me’). Items are scored to indicate the existence of hopelessness and the extent of negative attitudes about the future. The BHS has sound validity and reliability data across samples (e.g. Metalsky & Joiner, 1992). Additionally, it associates positively with reported suicidal ideation and suicide attempts (Beck & Steer, 1988). The scale has been used extensively with adolescents, showing good reliability and validity with this population (e.g. Johnson & McCutcheon, 1981). The BHS was completed every week for the duration of the study.

*Beck Scale for Suicidal Ideation (BSS; Beck & Steer, 1991)*: The BSS (Appendix J) is a 21-item inventory used to rate the intensity of suicidal thoughts, plans and behaviours. The BSS is widely used and has shown strong psychometric properties in both adult and adolescent samples (Allan, Kashani, Dahlmeier, Taghizadeh, & Reid,
The BSS was completed each week over the course of the study.

**Difficulties with Emotion Regulation Scale (DERS; Gratz & Roemer, 2004):** The DERS (Appendix K) is a measure of emotional regulation involving six subscales. Participants completed eight items from the ‘strategies’ subscale, which assesses participants’ perceived access to emotion regulation strategies. The DERS has high internal consistency, good test-retest reliability, and adequate construct and predictive validity (Gratz & Roemar, 2004). It has shown high internal consistency with clinical samples (Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007; Gratz, Tull, & Gunderson, 2008) and good reliability and consistency with an adolescent population (Neumann, van Lier, Gratz, & Koot, 2010). The ‘strategies’ subscale of the DERS was completed at baseline and week eight of the treatment phase.

**Diary measure:** A weekly diary log (Appendix L) was completed by participants to self-report the ‘number of times you self-harmed’. These logs were compared against hospital records and a weekly total was established through discussion with the young person. Diary logs have been used to good effect in similar studies investigating adolescent SH (Goldstein, Axelson, Birmaher, & Brent, 2007; Woodberry & Popenoe, 2008) and are relatively simple for young people to use.

**Visual Analogue Scales (VAS):** Visual analogue scales were used to measure levels of happiness and hope. These were 100mm vertical lines, with the bottom of the line representing an absence of the construct (‘not at all happy’ and ‘not at all hopeful’) and the top of the line representing high levels of the construct (‘extremely happy’ and ‘extremely hopeful’). Participants were required to draw a dash across the line at the point that they felt reflected their current mood. Such scales, whilst simple, have been
effective at capturing mood changes following experimental mood induction (Liverant, Brown, Barlow, & Roemer, 2008; Johnson, Tarrier, & Gooding, 2008). Participants were required to complete these scales at the start and end of each session, throughout the study.

**Procedure**

Ethical approval was obtained from the Local Research Ethics Committee to conduct the study within an NHS trust, albeit a non-NHS site (Appendix M).

All sessions took place in the same therapy room within the hospital and were delivered by the same trainee clinical psychologist (CD), under the supervision of clinical psychologists (DP and KS). The trainee clinical psychologist (CD) had received training in the BMAC method from Professor Nick Tarrier.

**Baseline Phase**

Measures were completed each week to reflect the occurrence of symptoms over the previous week. Baseline measures were collected at sessions 1, 2, 3 and 4. During baseline sessions, the young person would be engaged in social conversations to help put them at ease and to build an appropriate level of rapport; this felt important given the age of the participants, but also provided an appropriate control for the BMAC sessions (in respect of interaction with the therapist). Sessions lasted approximately 45 minutes.

**Treatment Phase**

The BMAC technique was introduced at session 4, immediately after the final baseline measures had been collated. The treatment phase thus began at week 4, through
to week 8 when the final measures were collated. Sessions lasted approximately 45 minutes.

Immediately prior to BMAC practice, participants were asked to recall a recent time when they had enjoyed themselves, felt happy, or had had a good time. They were then asked to provide a detailed oral description of this event, which the therapist noted. The six steps of the BMAC procedure followed:

**Preparation:** Participants were asked to close their eyes and relax themselves. They were engaged in a brief relaxation procedure using breathing exercises. The aim of this was to create a calm, relaxed state to facilitate the experience of positive emotion.

**Guided imagery of positive memories:** Participants were prompted to use their memory to ‘paint a picture in their mind’ of the positive memory. They were instructed to recall the situation and as much environmental detail as possible. Participants were told to make the memory as vivid as they could, and were instructed to ‘look around’ at the place, people and situation and to use different perspectives.

**Engaging the senses:** Participants were given prompts to recall as much sensory detail as possible (e.g. ‘Were there any particular sounds associated with the experience?’; ‘Did anybody speak? What did they say? What did their voice sound like?’). The aim was to prompt the participant to re-experience the memory by engaging and integrating all of the sensory aspects of the event.

**Re-experiencing the associated emotion:** Participants were instructed to recall how they had felt emotionally at the time of the event. They were prompted to scaffold an emotional response by using verbal descriptors of emotion, that is, to describe to themselves how they felt and how the emotion was experienced by them.
**Interrogate the memory:** Participants were told to ask themselves ‘*What was it about the experience that made you feel happy? What made you feel so positive?*’ They were encouraged to think about what the positive feelings meant for them at the time, and now. The aim was to make them aware of their appraisal of the experience, which led to the positive emotion. This enabled a link to be made between cognition and emotion.

**Feedback and Debriefing:** after approximately 30 minutes practice, participants were asked to open their eyes and stretch. They were instructed to complete the two VASs, rating their current levels of happiness and hope. Participants were then asked how they were feeling and given the opportunity to share their reflections on the BMAC practice. At the end of each treatment session, participants were encouraged to practice the technique on a daily basis and whenever they thought it might be helpful.

**Data analysis**

In case-series research, the predominant form of analysis involves graphical representation and visual inspection of the data (Parsonson & Baer, 1992). Such methods of analysis are considered appropriate for preliminary investigations into the impact of new therapeutic approaches and have been widely used for this purpose (e.g. Challacombe & Salkovskis, 2011; Fisher & Wells, 2008; Searson, Mansell, Lowens & Tai, 2012; Watkins et al., 2007; Wells & Papageorgiou, 2001; Whitall, Otto & Hong, 2001).

For this investigation, participants’ scores across baseline and treatment phases are graphically presented. Mean baseline scores were calculated for each participant, followed by the overall baseline mean for the sample. Post-treatment means were also
calculated. These means were then compared and the effect sizes calculated. Effect sizes (Cohen’s \(d\); Cohen, 1977) were calculated by dividing the mean change in participants’ scores (from baseline to end of therapy) by the pooled standard deviation (SD) of scores. Standard deviation is calculated as \(\sqrt{[\text{SD}_{\text{pre}}^2 + \text{SD}_{\text{post}}^2]/2}\), where ‘pre’ refers to mean baseline scores and ‘post’ to end of therapy scores. This method has been described by Cohen (1977) who identified effect sizes as either small (\(d=0.2\)), medium (\(d=0.5\)) or large (\(d=0.8\)). This procedure for effect size measurement has been used within other case-series (e.g. Searson et al., 2012; Wells & Sembi, 2004).

Results

Feasibility and acceptability

All five participants completed the full course of sessions, suggesting that the technique was acceptable to the young people. However, positive attendance rates should be considered in light of the setting of the study. Thus, whilst participants were frequently reminded that attendance was optional and that nonattendance would not affect their hospital treatment, participants may have perceived a lack of choice, given that they were based on a locked ward, amongst authority figures, with a prescribed regime. Nonetheless, participants did report to enjoy the BMAC sessions and this appeared to be reflected by the positive changes observed on the VASs (described below).

Hope and Happiness

Visual analogue scales were completed before and after sessions 1, 2 and 3 (baseline sessions) and 4, 5, 6 and 7 (BMAC sessions), for all participants. VASs were not completed at session 8, as this session did not involve BMAC practice.
The position of the dash (between 0-100 mm) was measured on both occasions and the difference between the VAS ratings was calculated. The mean *sessional change* (difference) across baseline sessions was calculated for each participant. The individual means were then used to calculate an overall sample mean for sessional change across baseline sessions. This procedure was then repeated for the treatment sessions. The sample mean sessional change for both baseline and treatment sessions are shown in Table 1.

It is notable that the mean sessional change was greater during the treatment phase than the baseline phase on both scales, and the effect sizes were large (d=>0.8; Cohen, 1977). Baseline sessions appeared to lead to increases in hope and happiness, which may have been due to spending time with the therapist; however, the effect was greater during the BMAC sessions, suggesting an additional benefit of the BMAC technique in boosting mood and optimism.

**Table 1.**
Mean Sessional Change on the Visual Analogue Scales

<table>
<thead>
<tr>
<th>Visual Analogue Scale</th>
<th>Baseline phase mean difference</th>
<th>Treatment phase mean difference</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=5 M (SD)</td>
<td>n=5 M (SD)</td>
<td>d</td>
</tr>
<tr>
<td>Hope</td>
<td>4.60 (5.41)</td>
<td>15.20 (5.22)</td>
<td>1.99</td>
</tr>
<tr>
<td>Happiness</td>
<td>4.26 (1.61)</td>
<td>12.30 (1.92)</td>
<td>4.54</td>
</tr>
</tbody>
</table>

M=mean; SD=standard deviation
Note: Baseline mean difference=mean of all participants’ sessional change across baseline sessions. Treatment mean difference=mean of all participants’ sessional change across treatment sessions.

**Depression, Suicidal Ideation, Hopelessness and Self-Harm**

Participants’ scores on the BDY-Y, BSS and BHS during the baseline and treatment phases are shown in Figures 1-5. The number of SH incidents reported for
each participant are displayed in Figure 6. Mean baseline scores, end of therapy scores, and effect sizes, for the BDI-Y, BSS, BHS, and diary log, are shown in Table 2.

Table 2.

Mean Scores and Effect sizes.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean baseline (N=5)</th>
<th>End of therapy (N=5)</th>
<th>Effect size pre-post D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td>BDI-Y</td>
<td>36.70 (7.01)</td>
<td>28.20 (7.32)</td>
<td>1.19</td>
</tr>
<tr>
<td>BSS</td>
<td>25.20 (5.16)</td>
<td>18.00 (4.36)</td>
<td>1.51</td>
</tr>
<tr>
<td>BHS</td>
<td>15.95 (4.67)</td>
<td>9.60 (2.79)</td>
<td>1.65</td>
</tr>
<tr>
<td>SH</td>
<td>6.10 (3.20)</td>
<td>2.00 (1.58)</td>
<td>1.62</td>
</tr>
</tbody>
</table>

M=mean; SD= standard deviation; BDI-Y=Beck Depression Inventory for Youth; BSS= Beck Scale for Suicidal Ideation; BHS=Beck Hopelessness Scale; SH=number of self-harm incidents.

Note: Mean baseline= mean of all participants’ baseline scores. Mean baseline for each participant is calculated from all baseline visits (1-4)

Figure 1: Change in Participant 1 Scores

Figure 2: Change in Participant 2 Scores.
Figure 3: Change in Participant 3 Scores

Figure 4: Change in Participant 4 Scores

Figure 5: Change in Participant 5 Scores
**Depression**

Visual inspection of the data showed that baseline scores on the BDI were relatively stable across the sample, although Participant 5 scores showed an increasing trend. During the treatment phase, scores tended to decrease over time and the mean percentage reduction in scores (from mean baseline to end of therapy) was 23%. The mean end of therapy score across the sample was lower than the mean baseline score, with an effect size of $d=1.19$. The data suggests that treatment was associated with reductions in depressive symptoms.

**Suicidal ideation**

The baseline phase for the BSS appeared less stable, showing a declining trend for all participants. The percentage improvement on the BSS at post-treatment was 29%, whilst the effect size for the change from mean baseline to end of therapy was $d=1.51$. The data suggests that participants experienced less suicidal ideation by the end of therapy than during the baseline phase; however, the reduction in scores showed a declining trend across the whole course of the study, not just following the introduction of treatment. The exception to this was Participant 5 whose scores did not progressively decline over time but were changeable, suggesting that BMAC may not have impacted on their suicidal ideation, or that other factors (such as uncontrolled external events) had influenced this variable.

**Hopelessness**

Baseline scores on the BHS showed stable trends. During the treatment phase, scores gradually declined; the mean percentage reduction at post-treatment on the BHS was 40%. The mean end of therapy score for the sample was lower than the mean
baseline score, with an effect size of $d=1.65$. The data suggests that BMAC was associated with reductions in hopelessness.

**Self-Harm**

Weekly totals of SH were inconsistent throughout the baseline and treatment phases, with graphical representation showing peaks and dips (see Fig. 7). Overall, there did appear to be a decreasing trend and the mean end of therapy score was lower than the mean baseline score ($d=1.62$). Rates of SH were quite sporadic throughout the study; however, this may have been due to changes in the degree of access to self-harming means, or due to differences in the motives behind the SH.

**Figure 6:** Change in Participants’ Rates of Self-Harm

![Graph showing change in participants' rates of self-harm](image)

**Difficulties in Emotional Regulation**

There was a positive change in scores on the strategies subscale of the DERS. The mean score for the sample at pre-treatment was 34.80, whilst the post-treatment sample mean was 25; there was a 28% reduction in the mean score ($d=1.62$). This
suggests a positive change in participants’ beliefs about their access to effective emotion regulation strategies.

**Figure 7:** Change in Participants’ Scores on the ‘Strategies’ Subscale of the DERS

![Graph showing change in participants' scores on the 'Strategies' subscale of the DERS](image)

**Discussion**

The results of this preliminary case-series are promising. Firstly, the data provides support for the intended purpose of the BMAC method – to enhance positive emotional states (Tarrier, 2010). In this study, BMAC practice was associated with increases in adolescents’ self-reported feelings of hope and happiness and these increases were greater than those observed in the control sessions (baseline). Furthermore, the effect sizes were large (>0.8; as described by Cohen, 1977). This suggests that whilst all sessions were associated with increases in hope and happiness, BMAC practice may have led to the greater improvements found in the treatment sessions. The observed improvements may have resulted from the exploration of autobiographical memories within BMAC practice; evidence suggests an association between positive autobiographical memories and positive affect (Cabellero & Moreno,
1993) and also between positive autobiographical memories and hopefulness
(D’Argembeau et al., 2008; Evans et al., 1992).

Findings from the VASs are analogous to those reported in earlier investigations
of BMAC (Johnson et al., 2013; Panagioti et al., 2012) and therefore provide additional
support for the utility of the BMAC method in boosting mood. Additionally, the
findings support the application of the method with another population – adolescents
who have recently experienced suicidal phenomena.

In terms of the impact of BMAC over time, findings also appear positive.
Introduction and practice of the BMAC method appeared to be associated with
reductions in depression, hopelessness, and suicidal ideation. It is possible that these
reductions were due to the boosts in positive emotion that appeared to follow BMAC
practice. As previously discussed, the benefits associated with experiences of positive
emotion have been highlighted by the broaden-and-build theory of positive emotion and
the research associated with this theory. For instance, experiences of positive emotion
are believed to create an upward spiral into well-being (Fredrickson & Joiner, 2002;
Garland et al., 2010) and they might reduce or eliminate the effects of negative emotion
(Fredrickson & Lewensohn, 1998; Bridges, 2006). Thus, the immediate boosts in
positive emotion following BMAC practice may have been a catalyst to other positive
experiences and positive cognitive processes (such as social engagement, increased
problem-solving, enhanced experience of positive appraisals) which may have lessened
some of the symptoms of depression and the experience of hopelessness. However,
since these processes were not measured in the current study, this explanation remains
unfounded.
Depression is often characterised by deficits in experiencing positive emotion (Dunn, 2012) and whilst it is acknowledged that positive emotion and depression are not opposite ends of a spectrum, the experience of positive emotion is incompatible with an important aspect of depression – low positive emotionality (Lambert, Fincham, & Stillman, 2012). Certainly, whilst depression might co-occur with positive affect, the magnitude of depressive symptoms may be reduced by the presence of positive emotion. Therefore, it seems plausible that an increase in the frequency of positive emotion (following BMAC practice) might reduce the occurrence of depression symptoms. Feelings of ‘hope’, in particular, have previously been associated with subsequent reductions in depressive symptoms (including hopelessness) (Seligman, Shulman, De Rubeis, & Hollon, 1999; Hirsch, Conner, & Duberstein, 2007).

Regarding changes in suicidal ideation, this may have been due to the possible impact of BMAC on self-reported feelings of hope. There is a known association between hopefulness and suicidal thoughts and behaviours (Alloy, Albright, Abramson, & Dykman, 1999; Beck, Brown, Berchick, Stewart, & Steer, 1990; Heisel, Flett, & Besser, 2002). Indeed, it has been argued that if an individual can experience a positive outlook towards the future, this might lower feelings of distress, and thereby allay the likelihood of suicidal ideation and behaviour (Alloy et al., 1999).

The aforementioned ideas are presented tentatively, as caution is required when drawing conclusions from case-series designs. For instance, due to the lack of a comparison group and the potential impact of other variables (that were not controlled), it cannot be unequivocally concluded that BMAC practice led to the improvements over time.
Participants’ scores on the ‘strategies’ subscale of the DERS improved from baseline to end of treatment phase; this suggests that the young people perceived a greater access to effective emotion regulation strategies. This may have been due to the young people learning and implementing the BMAC technique, which has been conceptualised as a method of ‘affect regulation’. Since participants were able to successfully practice the BMAC method and appeared to experience some of the proposed benefits, this may have strengthened their belief in the technique as a method of emotional regulation. Furthermore, the actual experience of positive emotion following BMAC may have led to the use of other emotion regulation strategies, which may have improved the young person’s confidence in their ability to manage their feelings. Moreover, since mastery has been associated with improvements in well-being (e.g. Shanahan & Bauer, 2004) this might have influenced some of the observed changes in depression and hopelessness.

It was proposed that participants might use BMAC practice to cope with difficult emotions, thereby leading to reductions in SH. Whilst rates of SH were lower during the treatment period than the baseline period, closer inspection of the data revealed that rates of SH were sporadic over both time periods, suggesting that other factors are likely to have influenced the change. The BMAC method may have been employed as an alternative coping strategy or may have led to the generation of other coping strategies (as a result of positive emotional experiences and the broadening of the cognitive context); however other factors may have been influential, such as the influence of other patients, changing access to means of self-harm, or other external events. Another point to consider is that some of the young people presented with symptoms of borderline personality disorder, which is characterised by fluctuating urges to SH. As such, the ability to achieve a stable baseline for SH behaviours is difficult (as
noted by Rizvi & Linehan, 2005). Furthermore, it is likely to take considerable time and effort for the young people to integrate new strategies into their coping repertoire and to readily employ these as an alternative to SH, due to the intensity of their urges to SH and the longevity of their difficulties with emotional regulation. Moreover, there are a plethora of reasons why a young person might SH (Klonsky, 2007); therefore the function of each SH incident reported by participants might have varied. For example, the motivation for the SH may have been to communicate distress, to experience a physical sensation, or to elicit care; as such, on these occasions, the use of BMAC as an alternative strategy may have had limited appeal. Overall, it remains inconclusive whether BMAC had any specific impact on self-harming behaviours.

It was interesting to note the engagement of young people in the sessions. Participants showed good attendance and provided positive verbal feedback during sessions (unfortunately, sessions could not be recorded due to the prohibition of recording devices on the inpatient ward). Tarrier (2010) originally advocated for the use of BMAC method as a positive task to help engage people in further therapeutic work. Certainly, the method appeared to engage the young people in the current study, which is a promising finding given that adolescents are often considered difficult to engage in therapy (Oetzel & Scherer, 2003).

Overall, the findings are encouraging; however, they need to be considered in light of the research design employed. Whilst case-series designs are considered to be highly appropriate for assessing the efficacy of new treatment methods (Moras, Telfer, & Barlow, 1993) and for research involving individuals who display suicidal phenomena (Rizvi & Nock, 2008), there are several limitations associated with their use. For example, results cannot be attributed solely to BMAC practice, since the
observed effects may be due to other factors, such as spending time with a therapist, spontaneous recovery, the impact of the ward milieu, or medication effects. Indeed, it is noteworthy that participants were prescribed medications during the study; however, it would have been unethical to request for these to be controlled for the purposes of research.

Greater confidence in the specific effect of BMAC could have been established by using a more sophisticated case-series design, such as an ABAB or a multiple-baseline approach. However, there are ethical concerns regarding the use of withdrawal designs (ABAB), particularly when working with high-risk populations (Rizvi & Nock, 2008). For example, if a suicidal young person reported to find a strategy useful for improving mood, it would be difficult to justify asking them to stop using it. A multiple-baseline approach may have been helpful; however, this would require a lengthier study, which could have impacted on recruitment opportunities and retention rates, and would have increased the likelihood that participants would be engaged in concurrent psychological interventions.

A further limitation of case-series designs are the small samples employed. Only five people participated in the current study and they may not have been representative of the population of young people experiencing suicidal phenomena, which limits the generalisability of the findings. However, it could be said that the participants were representative of the type of patients seen in clinical practice. For example, the participants were all female – SH is more common in female adolescents and rates of hospital-treated SH are higher in female adolescents than males (Hawton et al., 2003; Olfson, Gameroff, Marcus, Greenberg, & Shaffer, 2005). It is acknowledged that the age-range of participants in the sample was narrow; therefore it is difficult to know
whether BMAC would have been useful for younger adolescents. Similarly, the ethnic diversity of the sample was limited. All of the young people were White British, which limits the generalisability of the results to young people with different ethnic backgrounds.

Another limitation of the study was the use of self-report measures and the potential role for demand effects on outcomes; neither the therapist nor the participants were blinded to the purpose of the study. Furthermore, participants may have been reluctant to record the true amount of self-harming incidents if they perceived a negative consequence to this (such as increased observations on the ward). It has previously been suggested that teenagers may provide researchers with discrepant information and have a reluctance to disclose personal information to adult authority figures (e.g. Velting et al., 1998). Additionally, the use of VASs could be criticised due to being only single-item measures. However, the use of VASs was deemed appropriate for use with young people and they have been shown to accurately measure mood fluctuations following experimental mood inductions (e.g. Goldstein & Willner, 2002; Liverant et al., 2008).

In light of the known limitations of the study, the results must be interpreted cautiously and conclusions about the impact of BMAC made tentatively. Nevertheless, findings do suggest that the BMAC technique, in the treatment of suicidal phenomena, is considered worthy of further exploration with young people.

Future investigations might explore the impact of BMAC with adolescents experiencing other difficulties associated with suicidality, such as trauma. Indeed, traumatic experiences (including previous physical or sexual abuse) have been amply supported as predictors of suicide and SH in adolescents (e.g. Bensley, Van Eewynk, Spieker, & Schoder, 1999; Enns et al., 2006; Evans et al., 2005; Gratz, 2003; Hardt et
al., 2008) and since BMAC was originally advocated for use with PTSD (Tarrier, 2010) it would be worth investigating whether the method could help to reduce symptoms of trauma in young people. It has been suggested that the experience of positive emotion (through BMAC) could supersede some of the pathogenic effects of traumatic experiences on mood (see Panagioti et al., 2012, for a discussion). Furthermore, a young person experiencing invasive and recurrent traumatic memories (and their associated negative emotions) might welcome the opportunity to experience a balance of positive and negative memories.

Future studies might investigate the use of the BMAC technique with a more stable population of young people, allowing for a lengthier study employing a multiple-baseline design and longer treatment phase. This would create an opportunity for more robust conclusions to be made regarding the specific impact of the BMAC technique.

Finally, research into effective treatment strategies for young people at risk of suicide is required, given the extent of suicidal behaviours in adolescent populations and the devastating impact of such behaviours.

Clinical implications of the findings of this study include the potential utility of the BMAC method in therapeutic work involving young people. The method could be used to engage adolescents in therapy; for example, by creating an opportunity for a shared positive experience between the young person and the therapist. The method could also be used strategically in therapy sessions to increase the occurrence of positive affective states and their associated psychological benefits. Additionally, the eliciting of positive memories during BMAC practice might create opportunities for discussions about past events, and exploration of related issues, such as family difficulties and interpersonal relationships. Finally, the technique could be employed as
a clinical adjunct to existing treatment approaches for suicidal and self-harming adolescents, such as psychological or family therapies.

References


Alcohol Dependence, 89, 298-301.


George, M. S., Ketter, T. A., Parekh, P. I., Horowitz, B., Herscovitch, P., & Post, R. M.


Clinical Psychology Review, 27, 226-239.


Rebellon, D., Brown, J., & Keyes, C. L. N. (2000). Suicide and mental illness. In C. E. Faupel & P. M. Roman (Eds.), *The encyclopedia of criminology and defiant*


emotional granularity: examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*(6), 1161-1190.


PAPER THREE

Critical Evaluation

WORD COUNT: 5,982
The papers presented within this thesis explore the possible impact of two treatment strategies for adolescent suicidal phenomena and depression. The first paper investigated the application of mindfulness by reviewing current literature reporting the impact of mindfulness-based approaches on a range of outcomes associated with adolescent suicidality. The second paper presented findings from an empirical investigation of the Broad Minded Affective Coping method (BMAC; Tarrier, 2010) with adolescents who had recently experienced suicidal phenomena. The current paper discusses the relevance of the aforementioned research within the wider context of theory and practice, and critically evaluates the research process.

My Interest in the Research Area

I have had a keen interest in working clinically with adolescents since my first therapeutic role in a Young Offenders Institute almost ten years ago. Around this time, I also developed an interest in carrying out research with adolescent populations and thus completed my Masters Degree dissertation exploring addiction and offending behaviour amongst youth. Much of my subsequent clinical experience has been within forensic or inpatient settings, working with emotionally vulnerable clients with complex difficulties. Resultantly, I have engaged with many individuals experiencing suicidality, some of whom sadly ended their own lives. Given these experiences, I have become increasingly motivated to learn about suicidal phenomena and to think about different ways of working with young people displaying suicidal and/or self-harming behaviours. This interest transpired into the choice of topic for the current thesis and supervisory input from two clinical psychologists with strong research interests in suicidality (DP) and adolescent self-harm (KS).
An interest in mindfulness-based approaches developed after being involved in the delivery of a dialectical behaviour therapy (DBT; Linehan, 1993a, 1993b) group on an adult inpatient ward. Involvement in the group led to an exploration of the relevant literature and a developing interest in the use of acceptance and mindfulness in clinical practice.

I became aware of the BMAC method during a lecture on post-traumatic stress disorder (PTSD), delivered by Professor Nick Tarrier. During the lecture, the BMAC technique was demonstrated with a colleague, who later reported that she had found the experience to be a very positive one. The BMAC approach was appealing since I had a personal interest in the use of positive psychological interventions within therapy, that is, positive clinical psychology (see Wood & Tarrier, 2010, for a review). I contacted Professor Tarrier for more information on BMAC, which led to further reading around the use of positive emotion within therapy.

The Wider Context of Research and Practice

The work carried out for the thesis was not only personally relevant (in terms of academic interest and the requirements of the doctoral programme) it was also considered timely and appropriate within the wider context of research and practice.

For instance, there is a known paucity of research into effective treatment strategies for adolescents displaying suicidal or self-harming behaviours (Ougrin, Tranah, Leigh, Taylor, & Asarnow, 2012) and, therefore, the exploration of new approaches is considered a research priority (Hawton, Saunders, & O’Connor, 2012). The work conducted for the thesis is relevant here, since it investigates the utility of two
methods that might be helpful for adolescents experiencing suicidal phenomena and/or depression.

The systematic review investigated the potential utility of mindfulness practice. Within adult populations, the application of mindfulness has a supportive evidence base (see Baer, 2003) and research into the use of these approaches with adolescent populations is growing (Thomson & Gauntlett-Gilbert, 2008; Burke, 2010). Furthermore, there is a developing interest in the application of mindfulness in the treatment of suicidal individuals (Luoma & Villatte, 2012). Two recent reviews pertaining to adolescent suicidality and self-harm have highlighted a current interest in the use of DBT (Ougrin et al., 2012; Hawton et al., 2012). The systematic review amalgamated these areas of interest by exploring the impact of mindfulness-based approaches (including DBT) on adolescent suicidal phenomena and depression.

The current research contributes to another growing field of enquiry – the use of positive emotion in therapy (see Morris, Simpson, Sampson, & Beasley, 2013, for a review). Morris and colleagues suggest that therapeutic approaches cultivating positive emotion could be useful for individuals who self-harm. Findings from the BMAC study appear to support this notion, and the paper adds to a body of work suggesting that positive emotion may have a place within psychological interventions (see Tarrier, 2010; see also Dunn, 2012).

The BMAC investigation is also significant to an additional area of interest – the use of positive imagery within therapy (see Hackmann, Bennett-Levy, & Holmes, 2011). Indeed, there is a growing evidence base for positive imagery approaches, such as compassionate mind training (Gilbert, 2010; Gilbert & Irons, 2004), competitive memory training (COMET; Korrelboom, van der Gaag, Hendriks, Huijbrechts, &
Beretty, 2008; Korrelboom, de Jong, Huijbrechts, & Daansen, 2009), and positive imagery generation for depression (Blackwell & Holmes, 2010). Positive imagery work in clinical practice may be a future growth area; and findings from investigations into the BMAC method are relevant to this field of work, due to the method using positive autobiographical memories and imagery to illicit positive affect.

Although the therapeutic strategies explored within this thesis reflect current interest in the field; the research could be criticised due to the two methods (mindfulness and BMAC) being somewhat contradictory in their approach. For instance, the essence of mindfulness is present-moment experience and non-judgmental acceptance of this experience (thus, the experience and acceptance of all emotions as they arise). On the contrary, the BMAC procedure seeks to enhance positive emotion, (by directing attention to positive autobiographical memories) and may be considered a distraction technique, or a method of shifting emotional states (which conflicts with the spirit of mindfulness). However, Tarrier (2010) did not promote the BMAC technique as a method of avoiding negative emotion, but as an opportunity for individuals to experience some of the benefits of positive emotion.

The aim of the thesis was not to advocate for one approach over the other, but to explore the possible efficacy of two different treatment strategies for adolescent suicidality. An interest in the utility of positive emotion within therapy should not diminish the value placed on methods that encourage acceptance of present-moment experience. Furthermore, the BMAC approach is not recommended as a sole intervention strategy but, rather, as a clinical adjunct to existing treatment interventions (Tarrier, 2010). Indeed, Morris et al. (2013) suggested that a sole focus on positive emotion, for instance, would create the impression that negative emotions are dangerous
and should be avoided, which would be unhelpful. However, in cases where the experience of negative emotion is unceasing or associated with recurrent risks (such as suicide or self-harm) then methods of shifting emotional states may have some value for the individual concerned. Mindfulness-based approaches could be utilised as complete interventions with adolescents experiencing suicidality; however, the evidence base is still emerging and warrants further exploration. Overall, findings presented within this thesis suggest that both approaches could be helpful to young people experiencing suicidal phenomena and depression.

The Research Process

Defining Adolescent Suicidal Phenomena

A significant challenge during the research process was around defining suicidality and self-harm (SH). There appears to be consensus that suicidality includes completed suicide, suicide attempts and suicidal ideation; however, there continues to be disagreement regarding SH and whether this is considered a suicidal behaviour. Whilst it is recognised that some adolescents express a clear intent to die when they self-harm, other young people report ambivalence or no intent to end their life (King & Merchant, 2008). As such, some researchers prefer the dichotomous separation of suicide attempts and non-suicidal self-injury (NSSI), to reflect the differing motives. On the contrary, many suicidologists prefer to include all acts of SH, irrespective of the motive, within the larger spectrum of adolescent suicidal behaviours. For the purposes of the thesis, I decided to use the term suicidal phenomena (Evans, Hawton, Rodham, & Deeks, 2005) to encompass attempted suicide, SH (irrespective of the motive), and suicidal ideation. The inclusion of SH within this umbrella term was considered
appropriate on the basis of arguments put forward by Miller, Rathus, and Linehan (2007), as discussed in Paper One (p. 27).

Inclusion of SH as an outcome variable (in both pieces of research) brought further mystification, due to the array of terminology used within the literature. Many synonyms are utilised, including: self-harm, deliberate self-harm, self-injury, self-injurious behaviour, self-mutilation, self-poisoning, and more. The inconsistency of terms across papers made the integration of research findings (particularly within the literature review) an exigent task. It was found that the most helpful strategy was to retain the terms employed by original authors when discussing specific studies, but to endeavour to use the preferred term ‘self-harm’ throughout the rest of the text. This meant that the views of the original authors were upheld (by using their preferred terminology) whilst allowing the current authors to use their favoured term self-harm, which is currently employed within national guidelines (National Collaborating Centre for Mental Health, [NICE], 2011). In future reviews, a similar approach would be taken; however, it is hoped that future research may establish a consensus regarding the terminology used to describe suicidal phenomena, to facilitate easier integration of empirical studies.

Outcomes of Interest

It was clear from the outset that the research would investigate the impact of treatment approaches on suicidal phenomena (including SH, as previously discussed). However, it also felt worthwhile to explore the impact of these approaches on known risk factors for suicidality in youth. The difficulty with this decision was in deciding which variables to consider – indeed, research has revealed a plethora of both distal and
proximal risk factors for suicidal behaviours in youth, including depression, anxiety, trauma, impulsivity, hopelessness, family disruption, exposure to suicidal behaviour, substance-use, low self-esteem, and more. To explore the impact of treatment strategies on all known risk factors for suicidal phenomena would have been unfeasible and beyond the scope of the research. However, since depressive disorders are strongly associated with both suicidality (e.g. Brent et al., 1993; Shaffer et al., 1996; Bridge, Goldstein, & Brent, 2006) and self-harm (Hawton & James, 2005; Wilkinson, 2011), the exploration of depressive symptoms as an outcome of interest seemed appropriate. Indeed, suicidal thoughts and behaviours are symptomatic of depressive disorders, and because adolescents with depressive disorders are at elevated risk for suicide, depression and suicide are often explored together (O’Mara, Lee, & King, 2012).

Furthermore, some mindfulness-based approaches have been designed with depression as a treatment target (e.g. mindfulness-based cognitive therapy [MBCT]; Segal, Williams, & Teasdale, 2002), and BMAC has previously been piloted with depressed individuals (Tarrier, 2010).

The advantage of the inclusion of depression as an outcome of interest meant that findings from both papers could be generalised to adolescents experiencing depression, a group known to be at high-risk of suicidal behaviours. However, inclusion of depression as an outcome variable in the systematic review, meant that papers were included that were not specifically exploring adolescent suicide or self-harm, and some actually excluded adolescents who were ‘actively suicidal’. Whilst it seemed helpful to establish the impact of mindfulness-based approaches on depressive symptoms, it was difficult to conclude whether findings from these studies would generalise to depressed individuals experiencing suicidal phenomena. The review could have focused solely on suicidality; however, since treatment guidelines (NICE, 2011) outline the importance of
treated associated mental health conditions (including depression) it seemed appropriate to investigate changes in depressive symptoms within both the review and the empirical paper. Nevertheless, both pieces of research could be criticised for focusing on depression as opposed to other associated mental health difficulties. In retrospect, it may have been helpful to explore outcomes relating to additional risk-factors. For example, it may have been beneficial, in the review, to explore substance-use as an outcome of interest; this is a prevalent risk factor for adolescent suicidality and there is an emerging evidence base for the use of mindfulness-based approaches in the treatment of substance-use disorders (Brewer, Bowen, Smith, Marlatt, & Potenza, 2010; Bowen et al., 2006; Bowen et al., 2009). Regarding the empirical study, it may have been useful to investigate the impact of the technique on trauma-related symptoms, since BMAC was originally recommended for use with PTSD (Tarrier, 2010), and because evidence suggests that the experience of positive emotion could displace some of the pathogenic effects of traumatic experiences on mood (see Panagioti, Gooding, & Tarrier, 2012, for a discussion).

**The Systematic Literature Review**

Exploration of the literature on the use of mindfulness within clinical practice, revealed a growing interest in the use of such approaches with suicidal individuals, and this created curiosity as to whether this could apply to adolescents. For instance, Luoma and Villatte (2012) argued that *experiential avoidance* (the tendency to escape or avoid unwanted thoughts, emotions, memories, and sensations) is a potent predictor of psychological problems related to suicide and, since the spirit of mindfulness is about acceptance (rather than avoidance) of present-moment experience, it logically follows that mindfulness practice could be helpful for suicidal individuals. A scope of the
research literature on the use of mindfulness with adolescents revealed a review by
and MBCT with children and adolescents. The author reported promising findings, and
recommended that further work be carried out into mindfulness-based approaches with
this age group. Further scope of the literature revealed a number of papers that had been
published since the aforementioned review; therefore, a new review seemed appropriate.
Moreover, since there appeared to be a growing interest in the use of other mindfulness-
based approaches, namely DBT and Acceptance and Commitment Therapy (ACT;
Hayes, Strosahl, & Wilson, 1999), studies investigating the effectiveness of these
approaches were also included in the review. Given the current popularity of DBT and
ACT in clinical settings, the author was interested to explore the evidence-base for these
approaches and to establish whether the popularity was justified by the research.

*Search terms.* A particular challenge during the literature review involved the
selection of appropriate search-terms, given the breadth of language denoting
‘adolescent’ and ‘self-harm’. To ensure that all relevant studies were identified, a broad
range of terms were utilised within database searching. This meant that a large volume
of studies were identified and the screening process was, therefore, time-consuming.
This was particularly challenging, since the search process occurred alongside other
requirements of doctoral training, such as clinical work, university attendance, and
completion of the empirical research. This challenge was addressed through careful
planning of research time and the sourcing of guidance on how to conduct an effective
literature search. For example, relevant books were utilised (Jesson, Matheson, &
Lacey, 2011), in addition to library training courses and the use of supervision. The total
time required for the systematic literature review was under-estimated and, in
retrospect, the process could have been initiated earlier to alleviate some of the time-
pressure. However, it felt equally important for the literature search to be original and up-to-date and, as such, it may have been unhelpful to commence the process too early during the completion of the doctoral thesis.

**Quality assessment.** A strength of the review is that a formal quality assessment was carried out (see Table E1, Appendix E, for scores) and scores were corroborated with another trainee to determine inter-rater reliability (Paper One, p. 24). It seemed helpful to carry out a quality assessment as this encouraged scrutiny of the research and highlighted important methodological strengths and limitations of the included studies. However, whilst it seemed helpful to present the quality scores within the review table (to facilitate comparisons between studies), the score felt less important than the actual process of carrying out the assessment, as this helped with prioritising the findings, creating points for discussion, and highlighting areas for consideration in future work. Certainly, Jüni, Altman & Egger (2001) argue that the use of summary scores from quality scales can be problematic and that it is preferable to examine the influence of key components of methodological quality individually. As such, little emphasis was placed upon the actual scores within the review, particularly since investigations have shown that when differing assessment tools are used to evaluate the same study, they often yield divergent scores (Herbison, Hay-Smith, & Gillespie, 2006; Jüni, Witschi, Bloch, & Egger, 1999). Moreover, whilst there was an 80% agreement between the two raters in the quality scores given to a sample of the studies, there were some discrepancies in the scoring and these were associated with differing interpretations of the assessment criteria. Again, the quality assessment process was particularly time consuming, however it provided an invaluable method of thoroughly evaluating the research and would be employed in future reviews.
Limitations of the systematic review. Several limitations were highlighted regarding the literature review process. For example, the search strategy was limited to English Language papers; therefore, studies involving participants from different cultures may have been excluded. Additionally, the organisation and synthesis of findings may be subject to criticism, due to the terminology used and the placing of all SH behaviours under the sub-heading suicidal phenomena. A further limitation is that the review only explored depression as an associated risk factor for suicidal phenomena, despite there being other known psychological correlates (including substance abuse, trauma and anxiety). Resultantly, this may limit the applicability of the findings to those adolescents whose suicidal and self-harm behaviours are directly associated with such difficulties.

Despite the abovementioned challenges and limitations, the systematic review process created an opportunity to develop invaluable research skills and to fully appreciate and value the work involved in completing a comprehensive literature review. For instance, I developed skills in literature searching, navigating academic databases, reading large amounts of academic material, data extraction, integrating research findings, and assessing the quality of research. Moreover, I found that the depth of reading required during the review process led to a greater understanding of the area of enquiry and stimulated my personal interest further. Additionally, it highlighted new areas for exploration, such as the potential utility of mindfulness practice for therapists who regularly work with suicidal clients.

The Empirical Investigation

There is a growing body of work suggesting that methods aiming to cultivate positive emotion may have a place within clinical practice (see Morris et al., 2013); the
empirical investigation explored this notion by examining the impact of the BMAC approach with adolescents who had recently attempted suicide or self-harmed. A case-series design was employed and the research was conducted on an acute adolescent inpatient setting.

**Treatment integrity.** It felt important to maintain treatment integrity by acquiring appropriate training in using the BMAC method. Accordingly, I arranged a training session with Professor Nick Tarrier, who demonstrated the technique and provided helpful resources. Prior to commencing the study, I rehearsed the procedure with colleagues, in order to develop my confidence. With hindsight, it may have been helpful to practice on a non-clinical sample of adolescents, to highlight any modifications that may have been helpful for teenage participants. Nonetheless, I was able to effectively engage the young people with the BMAC method, utilising skills I have developed through clinical practice, such as the use of suitable language and developing appropriate rapport.

**BMAC method.** Tarrier (2010) highlighted potential problems with the BMAC method, such as: participants may find it difficult to identify any positive memories, participants may be unable to elicit or experience any positive emotion associated with the memory, or participants may contrast the good memory with their current situation, making them feel sad. Regarding the first point, the young people were usually able to identify an appropriate memory spontaneously, or through prompting of the usual positive events people describe. Participants were encouraged to think of potential examples between sessions, to help them prepare in advance. Regarding the second point, I followed the advice of Tarrier (2010) by encouraging participants to use verbal descriptors of their feelings and additional time was spent on these prompts during
practice. Regarding the final point, guidance in the BMAC paper was followed; the young people were encouraged to select a very recent memory (for example, if they had had a nice visit that week) so that the close proximity in time of the positive memory (and the likelihood of good experiences occurring again) could be emphasised. One difficulty I encountered in this study was the initial reluctance of young people to close their eyes during BMAC practice. This was managed through gentle reassurance and allowing the young person to first practice by covering their face with their hands. Another adaptation that seemed helpful to the young people was the language used within sessions – for example, one participant wished to rename ‘BMAC practice’ as ‘My Happy Memory’ – this simplification of terms and the use of ‘teenage friendly’ language facilitated engagement with the young people.

The setting. It felt appropriate to conduct the research in an inpatient setting, since the target population were adolescents with recent experiences of suicidal phenomena (such as suicide attempts) who were, therefore, likely to be admitted to hospital for assessment. Furthermore, since most young people who self-harm or experience suicidal ideation do not seek help beforehand, due to concerns about confidentiality and stigma (Michelmore & Hindley, 2012), it seemed most feasible to recruit from within services following a particular incident. Additionally, since the field supervisor worked clinically within an adolescent inpatient unit, this facilitated recruitment possibilities.

To ensure that the recruitment process was effective, it felt helpful to build rapport with the staff team. As such, I attended a number of meetings with ward staff prior to starting the study, to raise awareness of the research. This also provided an opportunity to liase with staff regarding ward procedures, such as risk-management.
A particular challenge faced during the recruitment process was around arranging a mutually convenient time to conduct sessions. The young people were often engaged in education during the day and sometimes had family visits in the evenings. To facilitate engagement, I was required to be flexible regarding the timing of sessions and, resultantly, they often took place at the end of the working day, or later in the evening, to minimise disruption to the ward regime. Whilst this facilitated attendance of sessions, participants may have been tired in the evenings, which may have affected their ability to focus on the BMAC practice, or may have influenced their mood and responses on the measures. It would have been preferable to carry out sessions during the daytime, as both participants and the trainee may have been less fatigued; however, this may have affected attendance rates and caused disruption to participants’ attendance in education classes or other ward activities.

Measures. A particular challenge encountered during the course of the study was around motivating the young people to complete all of the measures. Sometimes the participants would report finding it difficult to concentrate on the questions, and would require support in completing them. It felt important to offer support when needed, to alleviate any pressure felt by participants. However, this may have affected their responses; for example, they may have given responses which they felt were required (demand characteristics) or may have felt too embarrassed to answer the questions honestly. On reflection, it may have been helpful to trial the battery of measures with this client group (adolescents on an acute psychiatric inpatient ward) prior to commencing this study. This may have led to a reduction in the number of measures employed, or the consideration of simpler tools. For instance, although the evidence-base supports the use of the Beck Scale for Suicidal Ideation (BSS; Beck, Beck, & Steer, 1991) and the Beck Hopelessness Scale (BHS; Beck, Beck, & Steer,
1988) with adolescent populations, at times it felt that these measures might have been a little taxing for the young people included in this sample. An alternative may have been a measure designed specifically for youth, such as the Reynold Suicidal Ideation Questionnaire- Junior (SIQ; Reynolds, 1988). It may have been helpful to measure other outcomes within the study – such as the frequency of BMAC practice between sessions, or the number of times participants resisted an urge to self-harm. A direct measure of the frequency and timing of BMAC practice between sessions may have enabled conclusions to be made regarding the acceptability of the method, and whether adolescents were able to use BMAC to resist urges to self-harm. However, in an attempt to minimise the demands on participants, I prioritised the measures I felt were most helpful to the research aims. Participants did verbally report that they practiced the BMAC method between sessions; however, in retrospect it may have been helpful to capture this data.

It may also have been helpful to explore participants’ experiences of the therapy, or to gather information about external events that may have influenced the therapy and the treatment outcomes. I did contemplate the use of a semi-structured interview as a method to capture this information; however, due to the prohibition of recording devices on the ward and a consideration of the time involved in completing a detailed thematic analysis, it was felt that this would be unachievable. Future investigations of the BMAC method might involve the use of qualitative methods (such as diaries or questionnaires) to capture participants’ experience of the BMAC method and/or to gather information about events outside of therapy (such as personal or family difficulties) that might have affected the therapeutic process, employment of the technique, or treatment outcomes.
The use of self-report measures is a further criticism of the study, as the young people may not have provided accurate information – for example, they may have been concerned about confidentiality and perceived possible consequences to their reporting (such as loss of access out of the hospital). However, regardless of the approach taken, the assessment of suicidal phenomena in adolescents is notoriously difficult, since teenagers will often provide researchers with discrepant information or have a reluctance to disclose personal information to adult authority figures (Velting et al., 1998). In attempt to improve reliability of reporting, rates of self-harm were compared against staff observations to check consistency, and a weekly total was agreed with the young person.

**The research design.** The case-series design was considered appropriate for the study, given the preliminary status of the BMAC method. Additionally, the suitability of the case-design has been particularly emphasised for evaluations of treatments for self-injury and suicidal behaviours (see Rizvi & Nock, 2008, for a discussion).

A between-groups design was contemplated, whereby adolescents receiving BMAC would be compared against adolescents receiving treatment-as-usual, on the range of outcomes. However, it would have been difficult to recruit a sample large enough to yield significant findings. Rivzi and Nock (2008) have highlighted the difficulty in recruiting suicidal participants, due to the low base rate of the behaviour, which has implications for the ability to carry out an adequately powered study. They referred to Cohen (1988), arguing that, in order to achieve adequate statistical power \((\geq .80)\) to detect a moderate effect size \((d=.50)\) for the treatment, 100 participants would be required. Given the time and resource constraints of the doctoral research, this sample would have been difficult to achieve. On the contrary, case-series designs are
time and cost effective, and suitable for research exploring novel approaches, where it might be considered premature to use a between-groups design (e.g. Moras, Telfer, & Barlow, 1993). Nock (2012) has also argued for the use of case-series experiments in studies investigating new approaches to suicidal phenomena, to facilitate rapid treatment development. Certainly, the case-series design is a useful approach for determining whether a treatment method warrants further exploration in a larger-scale study.

There are known limitations of the case-series design (as discussed in Paper Two), such as generalisation of effects due to the small sample sizes and the attribution of causality due to the presence of uncontrolled extraneous factors. However, it could be argued that a strength of the case-series design is the high degree of internal validity, since they are most likely to mimic what occurs in real life clinical settings.

The A-B design employed is the most simplistic case-series design. However, an ABAB design was not desirable. For example, withdrawing treatment to see if SH reappeared would be unethical. A multiple-baseline design would be helpful in future studies – whereby BMAC could be introduced sequentially across different individuals, with different baseline lengths. A multiple-baseline design was not utilised for this study, due to time-constraints.

**The sample.** The study involved an opportunistic sample of young people admitted into one hospital during the study period; this meant that it was difficult to recruit a sample that was entirely representative of the population of young people experiencing suicidal phenomena. A noted limitation of the empirical research is that the sample was all White British females. However, research does suggest that self-harm is more common in female adolescents than male adolescents (Hawton, Rodham,
Evans, & Weatherall, 2002) and rates of hospital treated self harm are also higher in female adolescents (Hawton et al., 2003; Olfson, Gameroff, Marcus, Greenberg, & Shaffer, 2005). However, it is notable that the suicide rate in male adolescents (aged 15-19) is 2.6 times that of female adolescents of the same age (Wasserman, Cheng, & Jiang, 2005) therefore, future research should involve efforts to recruit male participants, in order to better understand how treatment approaches may be effective for this population.

There is very little research examining ethnic variations in the prevalence of adolescent self-harm and findings are mixed; as such, it is difficult to comment whether the current sample was representative of the target population. In the most recent study, Borrill, Fox, & Roger (2013) found that ethnicity alone was not a significant predictor of self-harm however data was consistent with an earlier study (Borrill et al., 2003), specifically that White and mixed-ethnicity students were most likely to report self-harm, than other ethnic populations. This is not to suggest that White young people experience more self-harming and suicidal attempts; rather, they may simply report more, or be more likely to present to services. For instance, Morrison and Downey (2000) noted that ethnic minority clients at a counselling centre were less willing to disclose suicidal ideation than non-minority clients. It is notable that two of the adolescents approached to take part in the BMAC study were from ethnic minority backgrounds, however their reasons for not participating did not appear to reflect issues around diversity (such as therapist ethnicity or issues of disclosure). One young person (Somalian) declined due to a planned hospital transfer and the other young person (South East Asian) was being treated for psychosis and was, therefore, excluded from the study (Sadly, the former young person committed suicide following her transfer to another hospital).
A further criticism of the sample could be around the applied exclusion criteria – thus, findings cannot be generalised to young people experiencing psychosis or with a body-mass-index (BMI) < 16. Since BMAC was found to be an effective method for boosting mood in individuals diagnosed with schizophrenia-spectrum disorder (Johnson, Gooding, Wood, Fair, & Tarrier, 2013), the exclusion criteria in this study may appear confusing. However, in the study by Johnson and colleague, participants were adults recruited from a community setting and were only required to attend one BMAC session. The study reported within this thesis involved young people, on an acute inpatient ward, possibly experiencing their first psychotic episode. As such, it was anticipated that these young people may be too distressed or thought-disordered to engage for the duration of the study. Regarding the exclusion of young people with a BMI <16, this was deemed appropriate as these teenagers may have been too physically unwell to engage in the study and were more likely to have been receiving other therapeutic interventions, due to immediate physical health risks. (It is notable that many of the young men who were present on the ward during the recruitment phase had psychotic symptoms and were, therefore, excluded, which may have impacted on the lack of males in the study)

**Clinical Implications and Future Investigations**

There are a number of clinical implications for the current research. Firstly, the systematic review indicates that mindfulness-based approaches may be helpful in the treatment of suicidal phenomena and depression in young people. The evidence base is certainly encouraging, but further work is needed (using rigorous methodologies) to establish their effectiveness as the predominant treatment approach for this population. Randomised controlled trials of both DBT and ACT are encouraged and further
investigations of the use of MBSR are proposed. There were no studies looking at the impact of MBCT on suicidal phenomena with this population; this could be an area for preliminary research. Overall, more research is required before definitive conclusions can be made about the effectiveness of mindfulness-based approaches; however, mindfulness does appear to offer promise as a technique for young people experiencing suicidal phenomena.

Clinical implications of the empirical study include the potential utility of BMAC as a method to engage young people in therapy, and use of the technique as a clinical adjunct to existing approaches for suicidal and self-harming adolescents. However, further work is needed, such as a longer study using a multiple-baseline design. Additionally, it may be helpful to explore the impact of BMAC on other outcomes, such as symptoms of trauma.

Generally, more research is needed to establish additional treatment strategies specifically for self-harm and suicidality amongst adolescents, given the perturbing prevalence rates. Indeed, only a limited number of interventions have been developed for adolescents with suicidal behaviour and many treatment studies for depression, anxiety, substance-use (and other correlated mental health disorders) exclude adolescents who are considered to be at risk of suicide, resulting in this population being neglected in clinical research (O’Mara et al., 2013).

Additionally, greater efforts to recruit male participants and teenagers from different ethnic backgrounds would be beneficial, in order to determine applicability of treatment approaches to these groups. Another area for work could involve establishing consensus regarding definitions of suicidal phenomena and self-harm, or the
development of reliable measurement strategies for self-harm behaviours (Ougrin, et al., 2012).

An area of personal interest, for further exploration, may be the use of mindfulness by clinicians working with suicidal adolescents. Luoma and Villatte (2012) suggested that, in addition to promoting mindfulness practice for suicidal individuals, it might also be helpful for the therapist working with such individuals to use mindfulness skills. The authors noted how emotional reactions to suicidal clients may be more intense than with other clients (Jacoby, 2004) and may include feelings of helplessness and hopelessness, and feelings of anxiety and worry (for example, about the safety of the client, or the professional implications of a client suicide). Luoma and Villatte (2012) argued that mindfulness practice would help the therapist to maintain flexibility in the face of such difficult feelings and situations, and concluded that “mindful therapy involves the creation of a culture of caring and compassion … that can benefit both therapist and client” (p. 274).

**Conclusions**

Overall, the completion of the thesis has been an invaluable experience and has developed my skills considerably as a scientist-practitioner. I have learnt a great deal about the process of completing research and have developed an utmost respect and appreciation for the work that is involved. I have realised the value of systematic reviews and the importance of assessing the strengths and limitations of research methodologies, rather than accepting findings on face value. I have developed an understanding of case-series methodologies and the importance of them within trials of novel therapeutic interventions. I have developed important skills in time-management and maintaining a healthy work-life balance. I have learnt about the value of good
supervision, particularly when working with complex young people. I have developed a fuller understanding of new approaches emerging within clinical practice, such as DBT and ACT. Finally, I have learnt a great deal about suicidal phenomena and the challenges faced by young people who struggle with these experiences; this has stimulated an interest in future work with this population, both as a researcher and as a clinician.

References


Psychiatry, 13, 395-407.


Appendix A:

Submission Guidelines for Clinical Psychology Review
Clinical Psychology Review

Clinical Psychology Review publishes substantive reviews of topics germane to clinical psychology. Papers cover diverse issues including: psychopathology, psychotherapy, behavior therapy, cognition and cognitive therapies, behavioral medicine, community mental health, assessment, and child development. Papers should be cutting edge and advance the science and/or practice of clinical psychology.

Reviews on other topics, such as psychophysiology, learning therapy, experimental psychopathology, and social psychology often appear if they have a clear relationship to research or practice in clinical psychology. Integrative literature reviews and summary reports of innovative ongoing clinical research programs are also sometimes published. Reports on individual research studies and theoretical treatises or clinical guides without an empirical base are not appropriate.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our support pages: http://support.elsevier.com

Guide for Authors

- Preparation

  Use of wordprocessing software

It is important that the file be saved in the native format of the wordprocessor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the wordprocessor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: http://www.elsevier.com/guidepublication). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your wordprocessor.

- Article structure

Manuscripts should be prepared according to the guidelines set forth in the Publication Manual of the American Psychological Association (6th ed., 2009). Of note, section headings should not be numbered.

Manuscripts should ordinarily not exceed 50 pages, including references and tabular material. Exceptions may be made with prior approval of the Editor in Chief. Manuscript length can often be managed through the judicious use of appendices. In general the References section should be limited to citations actually discussed in the text. References to articles solely included in meta-analyses should be included in an appendix, which will appear in the online version of the paper but not in the print copy. Similarly, extensive Tables describing study characteristics, containing material published elsewhere, or presenting formulas and other technical material should also be included in an appendix. Authors can direct readers to the appendices in appropriate places in the text.

It is authors' responsibility to ensure their reviews are comprehensive and as up to date as possible (at least through the prior calendar year) so the data are still current at the time of publication. Authors are referred to the PRISMA Guidelines (http://www.prisma-statement.org/statement.htm) for guidance in conducting reviews and preparing manuscripts. Adherence to the Guidelines is not required, but is recommended to enhance quality of submissions and impact of published papers on the field.
• Appendices
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

• Essential title page information

• Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae wherever possible. Note: The title page should be the first page of the manuscript document indicating the author’s names and affiliations and the corresponding author’s complete contact information.

• Author names and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors’ affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author’s name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author within the cover letter.

• Corresponding author. Clearly indicate who is willing to handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.

• Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a ”Present address” (or ”Permanent address”) may be indicated as a footnote to that author’s name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

• Abstract
A concise and factual abstract is required (not exceeding 200 words). This should be typed on a separate page following the title page. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

• Graphical abstract
A Graphical abstract is optional and should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 x 1328 pixels (h x w) or proportionally more. The image should be readable at a size of 5 x 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files.
See http://www.elsevier.com/graphicalabstracts for examples.
Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images also in accordance with all technical requirements: Illustration Service.

• Highlights
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate file in the online submission system. Please use ‘Highlights’ in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See http://www.elsevier.com/highlights for examples.

• Keywords
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, ‘and’, ‘of’). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.
• Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

• Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

• Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. Many wordprocessors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Table footnotes

Indicate each footnote in a table with a superscript lowercase letter.

• Electronic artwork

General points

• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the printed version.
• Submit each illustration as a separate file.

A detailed guide on electronic artwork is available on our website: http://www.elsevier.com/artworkinstructions

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply ‘as is’ in the native document format. Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please ‘Save as’ or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/halftone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:

• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

Color artwork

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article. Please indicate your preference for color: in
print or on the Web only. For further information on the preparation of electronic artwork, please see http://www.elsevier.com/artworkinstructions.

Please note: Because of technical complications which can arise by converting color figures to ‘gray scale’ (for the printed version should you not opt for color in print) please submit in addition usable black and white versions of all the color illustrations.

- **Figure captions**
  Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

- **Tables**
  Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

- **References**
  Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 1-4338-0559-6, copies of which may be ordered from http://books.apa.org/books.cfm?id=4200067 or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK. Details concerning this referencing style can also be found at http://humanities.byu.edu/linguistics/Henrichsen/APA/APA01.html

- **Citation in text**
  Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either ‘Unpublished results’ or ‘Personal communication’. Citation of a reference as ‘in press’ implies that the item has been accepted for publication.

- **Web references**
  As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

- **References in a special issue**
  Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

- **Reference management software**
  This journal has standard templates available in key reference management packages EndNote (http://www.endnote.com/support/enstyles.asp) and Reference Manager (http://refman.com/support/rmstyles.asp). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

- **Reference style**
  References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication. **References should be formatted with a hanging indent (i.e., the first line of each reference is flush left while the subsequent lines are indented).**


• Video data

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at http://www.elsevier.com/artworkinstructions. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

• Supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at http://www.elsevier.com/artworkinstructions.

• Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
• Phone numbers
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
Further considerations
• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Web)
• Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
• If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes
For any further information please visit our customer support site at http://support.elsevier.com.
Appendix B:

List of Search Terms for the Systematic Review
Search Terms

Adolescents

- adolescents
- teenagers
- youth
- young people
- juvenile
- minor

Suicide

- suicid*
- self-harm
- self-injur*
- parasuicid*
- self-mutilation
- self-cutting
- self-poison

Mindfulness

- mindfulness
- MBCT
- MBSR
- Dialectical behavioural therapy
- DBT
- Acceptance and commitment therapy
- ACT
Appendix C:

Data Extraction Pro-Forma
Data Extraction Pro-forma

Authors and publication details (inc. database):

**Aim/focus of the paper:** a) what is the major problem/issue being investigated? b) Are there hypotheses? Are they clearly stated?

**Intervention:** a) which intervention, b) How was it implemented? c) Who ran it? d) duration? e) setting.

**Research design:** a) what is the type of research design? b) are extraneous variables controlled for?, c) could the design be improved, how?, d) Which outcomes were assessed?

**Measures:** a) what was used, b) are the reliability/validity of the measures discussed? c) Are the choice of measures appropriate
Sample
a) is the population appropriate for the research question being asked? b) is the sample specific and appropriate, c) can the results be generalised on the basis of this sample, and to what population? d) inclusion/exclusion criteria e) sample size / how selected / response rate / drop-outs

Results
a) what statistical analyses were used? Appropriately and adequately described? b) what were the main findings. C) are the control variables adequately handled in the data analysis, are there other control variables not considered?

Discussion
a) what are the conclusions?  b) are the conclusions consistent with the statistical analysis? c) are alternative conclusions that are also consistent discussed and accounted for? d) are the theoretical and practical implications of the results adequately discussed? e) What are the limitations? Are they noted?, f) Recommendations made by authors?

Summary
a) what has paper contributed to this area of research? What is your overall assessment of the adequacy of the study? Where will I group this paper in the review?

Additional comments:
Appendix D:

Quality Assessment Tool
QUALITY ASSESSMENT TOOL FOR QUANTITATIVE STUDIES

COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?
1. Very likely
2. Somewhat likely
3. Not likely
4. Cannot

(Q2) What percentage of selected individuals agreed to participate?
1. 65-75% agreement
2. 60-70% agreement
3. Less than 60% agreement
4. Not applicable
5. Cannot

<table>
<thead>
<tr>
<th>RATE THIS SECTION</th>
<th>STRONG</th>
<th>MODERATE</th>
<th>WEAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>See dictionary</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

B) STUDY DESIGN

Indicate the study design
1. Randomized controlled trial
2. Controlled clinical trial
3. Cohort analytic (two group pre - post)
4. Case-control
5. Cohort with group pre - post (before and after)
6. Interrupted time series
7. Other specify ________________
8. Cannot

Was the study described as randomized? If NO, go to Component C.

No
Yes

If Yes, was the method of randomization described? (See dictionary)

No
Yes

If Yes, was the method appropriate? (See dictionary)

No
Yes

<table>
<thead>
<tr>
<th>RATE THIS SECTION</th>
<th>STRONG</th>
<th>MODERATE</th>
<th>WEAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>See dictionary</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
C) CONFOUNDERS

Q1. Were there important differences between groups prior to the intervention?
   1. Yes
   2. No
   3. Cannot tell

The following are common examples of confounders:
   1. Race
   2. Sex
   3. MAR
   4. Age
   5. SES (income or class)
   6. Education
   7. Health status
   8. Pre-intervention score on outcome measure

Q2. If yes, indicate the percentage of relevant confounders that were controlled either in the design (e.g., stratification, matching or analysis)?
   1. 0% – 25%
   2. 26% – 75%
   3. 76% – 100%
   4. Cannot tell

<table>
<thead>
<tr>
<th>RATE THIS SECTION</th>
<th>STRONG</th>
<th>MODERATE</th>
<th>WEAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>See dictionary</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

D) BLINDING

Q1. Were (were) the outcome assessor(s) aware of the intervention or exposure status of participants?
   1. Yes
   2. No
   3. Cannot tell

Q2. Were the study participants aware of the research question?
   1. Yes
   2. No
   3. Cannot tell

<table>
<thead>
<tr>
<th>RATE THIS SECTION</th>
<th>STRONG</th>
<th>MODERATE</th>
<th>WEAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>See dictionary</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

E) DATA COLLECTION METHODS

Q1. Were data collection tools shown to be valid?
   1. Yes
   2. No
   3. Cannot tell

Q2. Were data collection tools shown to be reliable?
   1. Yes
   2. No
   3. Cannot tell

<table>
<thead>
<tr>
<th>RATE THIS SECTION</th>
<th>STRONG</th>
<th>MODERATE</th>
<th>WEAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>See dictionary</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
F) WITHDRAWALS AND DROP-OUTS

(Q1) Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?
1 Yes
2 No
3 Cannot tell
4 Not Applicable (i.e. one time surveys, interviews)

(Q2) Indicate the percentage of participants completing the study. If the percentage differs by groups, record the lowest.
1 80-100%
2 65-79%
3 Less than 65%
4 Cannot tell
5 Not Applicable (i.e. retrospective case-control)

RATe THIS SECTION STRONG MODERATE WEAK

See dictionary
1 2 3 4 Not Applicable

G) INTERVENTION INTEGRITY

(Q1) What percentage of participants received the allocated intervention or exposure strategies?
1 80-100%
2 65-79%
3 Less than 65%
4 Cannot tell

(Q2) Was the consistency of the intervention measured?
1 Yes
2 No
3 Cannot tell

(Q3) Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?
1 Yes
2 No
3 Cannot tell

H) ANALYSES

(Q1) Indicate the unit of allocation (circle one)
- Community organizational level
- Practice/Well
- Individual

(Q2) Indicate the unit of analysis (circle one)
- Community organizational level
- Practice/Well
- Individual

(Q3) Are the statistical methods appropriate for the study design?
1 Yes
2 No
3 Cannot tell

(Q4) Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?
1 Yes
2 No
3 Cannot tell
GLOBAL RATING

COMPONENT RATINGS
Please translate the information from the gray boxes on pages 1-4 only this page. See dictionary on how to rate the section.

<table>
<thead>
<tr>
<th>Component</th>
<th>Strong</th>
<th>Moderate</th>
<th>Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>A SELECTION BIAS</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B STUDY DESIGN</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>C CONFOUNDERS</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>D BLENDING</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>E DATA COLLECTION METHOD</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>F WITHDRAWALS AND DROPOUTS</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

GLOBAL RATING FOR THIS PAPER (circle one):

1. STRONG
2. MODERATE
3. WEAK

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (AR) ratings? [ ] No [ ] Yes

If yes, indicate the reason for the discrepancy:
1. Oversight
2. Differences in interpretation of criteria
3. Differences in interpretation of study

Final decision of both reviewers (circle one):

1. STRONG
2. MODERATE
3. WEAK
Appendix E:

Characteristics of Studies Included in the Systematic Review
Table E1. Characteristics of Studies Included in the Systematic Review

<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turner et al. (1998) USA</td>
<td>Case illustration of the use of DBT with a borderline client</td>
<td>DBT Individual therapy 1 x pw Skills training group 1 x pw</td>
<td>No control</td>
<td>13-year old male, borderline symptoms, including suicidal ideation, self-harm. Previous suicide attempts.</td>
<td>Outpatient</td>
<td>Diary card</td>
<td>Reduction in self-injury</td>
<td>Single case, No comparison Reliance solely on diary card measure</td>
<td>3</td>
</tr>
<tr>
<td>Katz &amp; Cox (2002) Canada</td>
<td>Case illustration of the use if DBT with a parasuicidal adolescent</td>
<td>DBT Individual therapy 2 x pw Skills group daily</td>
<td>No control</td>
<td>16-year old female History of parasuicide, diagnosed with major depressive disorder and borderline features.</td>
<td>Inpatient</td>
<td>Beck Depression Inventory (BDI), Reynolds Suicidal Ideation Questionnaire-Junior (RSIQ-J) Diary card</td>
<td>Reduction in BDI/RSIQ-J scores from admission to 12 month post-discharge. Less SH incidents in 12 months post discharge than in 12 months pre-admission.</td>
<td>Single case, No comparison, Only reported scores at 12-month follow-up (FU), not post-intervention.</td>
<td>3</td>
</tr>
<tr>
<td>Rathus &amp; Miller (2002) USA</td>
<td>DBT vs. TAU Quasi-experimental design.</td>
<td>DBT 12 weeks Individual therapy 1 x pw Multi-family skills group 1 x pw</td>
<td>TAU: 12 weeks, Individual session 1 x pw Family session 1 x pw</td>
<td>DBT: n=29, mean age 16.1, 93% female TAU: n = 82, mean age 15.0, 73% female. Overall sample: 67.6% Hispanic, 17.1%</td>
<td>Outpatient</td>
<td>Harkavy-Asnis Suicide Survey, Beck Depression Inventory, Scale for Suicidal Ideation.</td>
<td>Sig. decrease in suicidal ideation in DBT group. No sig difference between groups in the no. of suicide attempts</td>
<td>Groups not randomly assigned, Non-equivalent comparison group. Majority female No FU data.</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trupin et al. (2002) USA</td>
<td>To assess the effectiveness of DBT for incarcerated female offenders</td>
<td>DBT 4 weeks Skills training group, 1-2 x pw</td>
<td>Matched comparison group received TAU.</td>
<td>All female. Mental health group (DBT): n=22, mean age 14.8, 50% white, 15% African American, 15% Native American, 10% Hispanic. General population group (DBT): mean age 15.5, 50% white, 22% African American, 9% native American, 14% Hispanic.</td>
<td>Residential forensic setting</td>
<td>Daily logs of youth behavior problems (including parasuicidal acts)</td>
<td>Mental health group: sig. reduction in behavior problems (including parasuicidal acts) during DBT period, but not sig. reduced compared to prior year. General population cottage – no sig. reduction in behavior problems.</td>
<td>Groups not randomly assigned. No comparisons made between units due to non-equivalent groups and therapists. Limited information on treatment adherence. All female.</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial.

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grove St Adolescent Residence of the Bridge of Central Massachusetts, Inc. (2004) USA</td>
<td>To report the outcomes of a residential service applying DBT. Not research based – service outcome report.</td>
<td>DBT: Individual therapy 1 x pw Skills group 2 x pw Family therapy</td>
<td>No control</td>
<td>n=20, mean age 16.6, 14 female, 6 male, average 2.3 Axis I diagnoses. Adolescents with severe emotional disturbance.</td>
<td>Non-profit community residence to treat youths age 13-21.</td>
<td>Diary cards</td>
<td>9/20 youths had history of self-harm. Total of 23 self-reported incidents in the 6 months prior to treatment. 12 incidents in first 6 months. 1 in second 6 months. No incidents in 6 months post-discharge.</td>
<td>Small sample No comparison group Relied solely on diary measure Treatment adherence not reported. Majority female</td>
<td>3</td>
</tr>
<tr>
<td>Katz et al. (2004) Canada</td>
<td>To evaluate the feasibility and effectiveness of DBT vs. TAU with one year FU.</td>
<td>DBT: 2 weeks Skills group 1 x pd Individual therapy 2 x pw Therapist consultation</td>
<td>TAU: 2 weeks Psychotherapy group 1 x pd Individual therapy 1 x pw Psychodynamic-orientated model</td>
<td>n=62, mean age 15.4, 52 female, 10 male, 72.6% White, 1.6% Latino, 0% African American, 4.8% Asian/Pacific Islander, 19.4% First Nations populations, 1.6%</td>
<td>Inpatient</td>
<td>No. incidents reported by nursing staff, Beck Depression Inventory (BDI), Kazdin Hopelessness Scale for Children</td>
<td>Both groups main effect for time. For DBT – BDI (d=1.67), SIQ (d=2.12) KHS (d=.73) No sig. difference between groups at</td>
<td>Groups not randomly allocated Limited information on treatment adherence. Greater therapist</td>
<td>2</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD – oppositional defiance disorder, ADHD – attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunseri (2004) USA</td>
<td>To assess the impact of DBT on adolescents in residential care</td>
<td>DBT Skills group 2 x pw Individual therapy 1 x pw Telephone support Therapist consultation</td>
<td>Cohort of residents in the 29-months prior to DBT delivery</td>
<td>All female DBT: n=26, mean age 15.2, 88% Caucasian, 50% disruptive behavior disorder, 58% anxiety disorder, 4% eating disorder, 39% substance abuse disorder, 85% mood disorder</td>
<td>Residential</td>
<td>No. of premature terminations from the programme due to suicidality</td>
<td>DBT group: 0/27 (0%) had premature terminations due to suicidality</td>
<td>Groups not randomly assigned Non-equivalent comparison group Samples were point in time – some overlap of clients. All female</td>
<td>2</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD – oppositional defiance disorder, ADHD – attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI – non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson-Gray et al. (2006)</td>
<td>USA To establish effectiveness of DBT with ODD youth</td>
<td>Quasi-experimental</td>
<td>DBT Skills group: 1 x pw (2h)</td>
<td>No control</td>
<td>n=32, mean age 12.63, 85% male, 43.2% African American, 40.5% Caucasian, 2.7% Hispanic. All met criteria for ODD. Comorbid disorders: 31.3% ADHD, 34.4% conduct disorder, 8.1% major depressive disorder</td>
<td>Outpatient</td>
<td>Child Depression Inventory (CDI)</td>
<td>Sig. reductions in depressive symptoms 83% from clinical to non-clinical status.</td>
<td>No comparison group Small sample No FU data. Majority male Suicide risk an exclusion criteria</td>
</tr>
<tr>
<td>Goldstein et al. (2007)</td>
<td>USA To apply DBT to the treatment of bipolar adolescents</td>
<td>Quasi-experimental</td>
<td>DBT Multi-family skills group Individual therapy Delivered alternate weeks, each modality received bi-weekly.</td>
<td>No control</td>
<td>n=10, mean age 16, 8 female, 2 male, 6 White, 1 African American, 3 Multiracial. 8 had a history of suicide attempts, all diagnosed with bipolar disorder</td>
<td>Outpatient</td>
<td>Modified Scale for Suicidal Ideation (MSSI), Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL). Depressive</td>
<td>80% had history of suicidality – No attempted suicides during study. Sig improvements on MSSI (d=1.2), non-sig reduction in reported self-harm on K-SADS-PL. Sig. improvement in</td>
<td>Small sample, No comparison group All participants also receiving medication Limited information on treatment adherence No FU data</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiant disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nock et al. (2007) USA</td>
<td>Case illustration of the use of DBT as a treatment for adolescent self-injury</td>
<td>DBT 24 sessions Multi-family skills group 1 x pw Individual therapy 1 x pw</td>
<td>No control</td>
<td>17-year old African American female, major depressive disorder, borderline personality disorder, Reported self-harm once per day, 2-3 x pw, in previous 6 months.</td>
<td>Outpatient</td>
<td>Diary cards</td>
<td>Self-injury decreased to zero by 6th week, 2 incidents over remaining sessions, continued having thoughts of self-injury (once pw)</td>
<td>Majority female</td>
<td>3</td>
</tr>
<tr>
<td>James et al. (2008) UK</td>
<td>To evaluate effectiveness of DBT with adolescents with persistent SH</td>
<td>DBT Skills group 1 x pw Individual therapy 1 x pw Telephone support 2 x 6 month blocks</td>
<td>No control</td>
<td>n=16, all female, mean age 16.4, no ethnicity data History of &gt; 6 months of severe and persistent SH.</td>
<td>Outpatient</td>
<td>Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), no. of episodes of SH pw.</td>
<td>Sig. reduction post-treatment and at 8 months FU in scores on BDI, BHS and reduction in episodes of SH</td>
<td>Small sample, No comparison group No information on treatment adherence. All female</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasser et al. (2008)</td>
<td>USA</td>
<td>To examine effectiveness of DBT vs. Standard Therapeutic Milieu (STM) for adolescents in residential treatment</td>
<td>Quasi-experimental</td>
<td>DBT 17 weeks Skills group 1 x pw Individual therapy 1 x pw, Family attended 4 skills groups.</td>
<td>Matched sample from another inpatient unit, receiving standard treatment milieu (STM): behavioural group, individual therapy, family therapy and phamotherapy.</td>
<td>n=24, 12 matched pairs (matched on diagnosis, gender, age) Sample with exact match each had: 1 female, 6 males, mean age 14.29. Secondary match sample, in each group: 3 female, 9 male, mean age 14.67 (DBT), 14.58 (STM) Diagnoses: ADHD, MDD, CD, mood disorder, PTSD, ODD.</td>
<td>Inpatient</td>
<td>Brief Psychiatric Rating Scale for Children (BPRS-C) – depression subcale</td>
<td>Sig improvement on depression subscale for DBT and a ‘trend’ sig. improvement for STM. Within-subjects effect results sig. for depression</td>
</tr>
<tr>
<td>Woodberry &amp; Popenoe (2008)</td>
<td>USA</td>
<td>To implement DBT with adolescents and their families.</td>
<td>Quasi experimental</td>
<td>DBT 15 weeks Multi-family skills group 1 x pw Individual therapy 1 x pw, Telephone support Therapist consultation</td>
<td>No control</td>
<td>n=28, mean age 16, 82% female, 93% Caucasian, 61% Primary diagnosis: 61 % mood disorder, 11% behavioural, 11% anxiety, 18% other. History of suicide attempts and/or intense or unstable affect or relationships, within</td>
<td>Outpatient</td>
<td>Reynolds Adolescent Depression Checklist (RADC), Trauma Symptom Checklist for Children (TSCC)(depression subscale), diary log for incidents</td>
<td>Sig. decrease in thoughts of self-harm/suicide, sig. decrease in % of those wanting to commit suicide, Parent reports: sig. decrease in self-harm/suicide attempts.</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI – non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zylowska et al. (2008)</td>
<td>To evaluate the feasibility and impact of mindfulness training for adolescents/adults with ADHD</td>
<td>MBSR informed mindfulness-training programme (modified for ADHD) 8 weeks, 2.5hr 1 x pw, daily practice at home</td>
<td>No control</td>
<td>n=8, mean age 15.6, 3 male, 5 female</td>
<td>Outpatient</td>
<td>Child Depression Inventory (CDI)</td>
<td>Negligible changes in depression on CDI.</td>
<td>Small sample precluded statistical testing, No comparison group Poor generalisability reported ‘atypical sample’ (majority female, white and from medium-high SES).</td>
<td>3</td>
</tr>
<tr>
<td>Biegal et al. (2009)</td>
<td>To examine the efficacy of MBSR for the treatment of adolescent psychiatric outpatients</td>
<td>MBSR (+ TAU) 8 weeks, 2h 1 x pw, daily practice at home Offered as an adjunct to usual</td>
<td>TAU-only: individual or group psychotherapy and/or psychotropic medication management Considerable</td>
<td>ITT n=102, mean age 15.35, 73.5% female, Caucasian 45.1%, Hispanic/Latino 28.4%, Asian 5.9%, African American 2.9%, Native American 1%, or of mixed ethnic descent</td>
<td>Outpatient</td>
<td>Hopkins Symptom Checklist 90 (Revised) (SCL-90-R; Derogatis, 1977)</td>
<td>In both completer and ITT samples, MBSR (+TAU) sig. reduced depressive symptoms, compared with TAU controls</td>
<td>TAU varied Brief FU period Possible that MBSR may have had more treatment time Largely female sample.</td>
<td>2</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiant disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC = Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plener et al. (2009)</td>
<td>A pilot study of a music therapeutic programme for self-injuring adolescents</td>
<td>DBT combined with music therapy sessions, 2 hr (includes 20 min individual DBT session), 3 x multifamily skills group</td>
<td>No control</td>
<td>n=5, all female, mean age 14.6, reporting urges/acts of self-injury. Range of diagnoses: PTSD, histrionic PD, adjustment disorder, moderate/major DD, ADHD</td>
<td>Outpatient</td>
<td>Functional Assessment of Self-Mutilation (FASM), Self-Harm Behaviour Questionnaire (SHBQ), BDI-II, diary card</td>
<td>4/5 did not self-harm post-intervention or at 2-month FU. 2/5 had hospital admissions fur to suicidal thoughts – but no attempts made. 1/5 did not profit. Mean BDI reduced pre- to post-</td>
<td>Small sample All females. 1 participant not helped by the programme</td>
<td>3</td>
</tr>
<tr>
<td>Wicksell et al. (2009)</td>
<td>To evaluate the effectiveness of ACT vs. TAU for children and adolescents with pain.</td>
<td>ACT 10 weekly individual sessions (60 min) 1-2 sessions TAU Received mean 10.6 sessions (60mins). Family involved in some session. Patients received</td>
<td>TAU</td>
<td>n=32, 25 female, 7 male, mean age 14.8, referred with pain for more than 3-months, depression scores ‘elevated’.</td>
<td>Outpatient</td>
<td>Centre for Epidemiological Studies Depression Scale for Children (CEDS)</td>
<td>ACT group: decrease in depression scores, but not statistically sig. Difference</td>
<td>Small sample Exclusion criteria included suicide risk</td>
<td>2</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD – oppositional defiance disorder, ADHD – attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI – non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joyce et al. (2010)</td>
<td>Australia</td>
<td>To explore the impact of a mindfulness programme on the mental health of school-children</td>
<td>Mindfulness meditation training (informed by MBSR) 10 week training. 1 x pw, daily practice.</td>
<td>No control</td>
<td>n=120, mean age 11.4, 43.8% female, 56.3% male</td>
<td>Primary schools.</td>
<td>Children’s Depression Inventory (CDI)</td>
<td>Sig. improvement in scores on CDI (0.27). Divided into two groups according to clinical cut-offs: ‘borderline’ or ‘abnormal’; large effect size for ‘abnormal’ group (d=0.62)</td>
<td>No comparison group No control over other school interventions. Only used 2 schools. No FU Delivered by teachers (albeit trained by MBSR clinician).</td>
</tr>
<tr>
<td>McDonell et al. (2010)</td>
<td>USA</td>
<td>A pilot evaluation of DBT in adolescent long-term inpatient</td>
<td>DBT 3 x treatment groups: milieu only, milieu + skills</td>
<td>Historical controls – provided with individual, group and family therapies.</td>
<td>DBT: n=106, mean age 15.4 admitted and discharged over 5 years. 73% history of suicide ideation or</td>
<td>Inpatient</td>
<td>Data on self-injury from quality assurance databases (but only available for DBT groups: sig. effect of time on self-harm (accounting for age, gender, Groups not randomly assigned. Reliance on staff recordings of</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**DBT** = dialectical behaviour therapy, **ACT** = acceptance and commitment therapy, **MBSR** = mindfulness-based stress reduction, **pd** = per day, **pw** = per week, **hr** = hour, **x** = times, **ave.** = average, **sig.** = significant, **FU** = follow-up, **TAU** = treatment as usual, **d** = effect size (Cohen’s d; Cohen, 1988), **MDD** = major depressive disorder, **ODD** – oppositional defiance disorder, **ADHD** – attention-deficit-hyperactivity disorder, **BD** = bipolar disorder, **BPD** = borderline personality disorder, **DSH** = deliberate self-harm, **NSSI** – non-suicidal self-injury, **STM** = standard therapeutic milieu, **CD=conduct disorder, PTSD** = post-traumatic stress disorder, **ITT** – intention-to-treat, **PD** = personality disorder, **LAC** – Looked After Children, **RCT** = randomized controlled trial

*Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak*
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schonert-Reichl &amp; Lawlor (2010)</td>
<td>Quasi-experimental</td>
<td>Manual based Mindfulness education (ME) programme</td>
<td>Wait-list</td>
<td>No ME programme was being implemented</td>
<td>12 schools in a large urban school district</td>
<td>Positive and Negative Affect Schedule (PANAS)</td>
<td>No differences in change on negative affect between ME programme and controls.</td>
<td>Groups not randomly assigned. No FU. Delivered by teachers (albeit trained by a clinician).</td>
<td>2</td>
</tr>
<tr>
<td>Fleischeiker et al. (2011)</td>
<td>Follow-up of a clinical trial of</td>
<td>DBT</td>
<td>No control</td>
<td>n=12, limited to females, age between 18 years</td>
<td>Outpatient setting</td>
<td>LPC Depression</td>
<td>Sig. reduction of NSSI from pre-to-post</td>
<td>No comparison group</td>
<td>2</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiant disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC = Looked After Children, RCT = randomized controlled trial.

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>DBT-A for adolescents with suicidal, self-injury and borderline symptoms. Quasi-experimental</td>
<td>16-24 weeks (duration varied due to school holidays) Multi-family skills based training 1 x pw Individual therapy 1 x pw Family therapy as needed. Telephone support</td>
<td>13-19, no information on ethnicity, diagnosed or features of BPD, each patient averaged 1.3 Axis 1 diagnoses. NSSI or suicidal behaviours in previous 16 weeks.</td>
<td>Inventory for Children and Adolescents (DIKJ), Depression dimension on Symptom Checklist SCL-90-R</td>
<td>1-month FU (d=0.89), Sig. reduction of NSSI from pre- to 12-month FU (d=0.92) 67% had history of suicide attempts; no suicide attempts during DBT or at 12-month FU. Sig. reductions in depression on DIKJ (d=1.51) and depression dimension of SCL-90-R (d=2.14), from pre- to 12-month FU</td>
<td>Limited to female sample No information on participant ethnicity. Not clear who provided therapy/therapy adherence. *original paper not available in English (abstract only).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hayes et al. (2011)</td>
<td>Pilot study of ACT vs. TAU for adolescent depression</td>
<td>ACT: Individual sessions using published ACT TAU: Psychotherapy comprising manualised CBT</td>
<td>ACT: n=22, mean age 14.61, 81% female TAU: n=13, mean age 15.49, 56% female.</td>
<td>Outpatient Reynolds Adolescent Depression Scale-2,</td>
<td>RADS-2: ACT condition showed greater improvement, Excluded ‘actively suicidal’ Short FU</td>
<td>All staff ACT trained and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study (including country)</td>
<td>Study aim and design</td>
<td>Description of intervention</td>
<td>Control</td>
<td>Sample characteristics</td>
<td>Setting</td>
<td>Measures of interest</td>
<td>Outcomes of interest</td>
<td>Main limitations</td>
<td>Quality score</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------</td>
<td>-----------------------------</td>
<td>---------</td>
<td>------------------------</td>
<td>---------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>James et al. (2011) UK</td>
<td>To evaluate the use of DBT for adolescents with repeat self-harm in the LAC system.</td>
<td>DBT Skills training group – 1 x pw Individual therapy 1 x pw Telephone support Carer training and outreach component Therapist consultation Delivered in 2 x 6 month blocks</td>
<td>No control</td>
<td>ITT sample, n=25, 22 female, 3 male, mean age 15.5. Completers sample n=18</td>
<td>Outpatient</td>
<td>BDI, BHS, no. self-harm incidents per week determined by clinical interview</td>
<td>Sig. reduction in depression scores, hopelessness score and lowered frequency of self-harm Drop-outs more depressed/hopelesss on pre-measures.</td>
<td>Small sample No comparison group Mostly female Moderately high drop-out rate.</td>
<td>2</td>
</tr>
</tbody>
</table>

**Notes:**
- DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD – oppositional defiance disorder, ADHD – attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI – non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

*Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak*
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lau &amp; Hue (2011) China</td>
<td>To assess the feasibility, acceptability and impact of a mindfulness-based programme for Hong Kong adolescents</td>
<td>MBSR: 6 x 2hr sessions, delivered weekly and daily practice at home.</td>
<td>Control group (students from same 2 schools)</td>
<td>MBSR: n=15, all female, mean age 15.8, all Cantonese ethnicity. Only included those who had &gt;80% attendance. No sig. difference between groups on gender, meditation practice experience or religious faith.</td>
<td>School-based. (2 schools)</td>
<td>Depression Anxiety Stress Scale (DASS)</td>
<td>Sig. time x group interaction found for combining depressive symptoms and stress symptoms.</td>
<td>Small sample High drop-out rate Combined scores for different symptoms. Teacher delivered (albeit trained in MBSR)</td>
<td>2</td>
</tr>
<tr>
<td>Memel (2012) USA</td>
<td>To assess the impact of DBT on a psychiatric adolescent partial-hospital programme</td>
<td>DBT: 2 x pw, over 5 weeks, Rolling programme.</td>
<td>Historical sample: cohort of adolescents receiving treatment in year prior. *only compared for length of stay.</td>
<td>N=18, mean age 14, 12 female, 6 male, 67% African American, 28% Caucasian, 0.05% Asian. History of suicidal ideations, attempts and/or aggressive urges/acts towards self/other. Primary diagnoses: 50% depression, 22% other mood disorder, 17% ADHD, 11%</td>
<td>Psychiatric partial-hospital programme</td>
<td>Daily interviews and diary card for no. ‘life-threatening urges’ (LTU) and life-threatening acts (LTA) – including suicide attempts, self-injury, aggressive acts towards self/other)</td>
<td>No. of urges increased during study. No. of acts per week, lower than at baseline. At baseline, reported to act on urges 70% of time, reduced to 20% during study. No LT acts at Week 5. 5 day decrease in average length of</td>
<td>Only used comparison group for length of stay. No comparison group for other outcomes. Small sample. Only descriptive statistics. Aggression to others included as LFT in analysis.</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT – intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welch &amp; Kim (2012) USA</td>
<td>Case illustration demonstrating the use of DBT-enhanced CBT for adolescent trichotillomania</td>
<td>DBT-enhanced Habit Reversal Therapy 16 sessions (no information on frequency/duration)</td>
<td>No control</td>
<td>15-year old female, diagnosed with trichotillomania</td>
<td>Outpatient</td>
<td>Moods and Feelings Questionnaire (MFQ)</td>
<td>Reduction in depressive symptoms measured by MFQ – at post-treatment and FU. Mindfulness reported as particularly useful</td>
<td>Single case study No comparison Not ‘pure’ DBT (albeit emphasis on mindfulness).</td>
<td>3</td>
</tr>
<tr>
<td>Gauntlett-Gilbert et al. (2013) UK</td>
<td>To examine the impact of ACT on adolescents with chronic pain</td>
<td>ACT 3 weeks ACT-based group residential programme. 90-hour treatment over 15 days.</td>
<td>No control</td>
<td>N=98, mean age 15.6, 75% female. No ethnicity information. Experiencing chronic pain. Group ‘diagnostically heterogeneous’. All accompanied by a parent.</td>
<td>Residential</td>
<td>Bath Adolescent Pain Questionnaire (depression subscale)</td>
<td>Sig. improvement pre- to post-, but not sustained at follow-up (d=0.22)</td>
<td>No comparison group. Limited information about treatment or therapists.</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC – Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
<table>
<thead>
<tr>
<th>Study (including country)</th>
<th>Study aim and design</th>
<th>Description of intervention</th>
<th>Control</th>
<th>Sample characteristics</th>
<th>Setting</th>
<th>Measures of interest</th>
<th>Outcomes of interest</th>
<th>Main limitations</th>
<th>Quality score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tan &amp; Martin (2013) Australia</td>
<td>To examine the impact of a mindfulness-intervention for adolescents with psychiatric disorders</td>
<td>Mindfulness intervention (based on MBSR) Manual based programme called ‘Taming the Adolescent Mind’ 5-week</td>
<td>No control</td>
<td>N=10, mean age 15.7, 70% female, 100% Caucasian, affective mood disorders (n=4), stress and adjustment disorders (n=4), phobic disorder (n=1) and OCD (n=1).</td>
<td>Outpatient</td>
<td>Depression Anxiety Stress Scale (DASS-21)</td>
<td>Sig. reductions in depression from pre- to post-, and pre- to FU (d=0.42)</td>
<td>Small number Lack of control group. Excluded ‘acute suicidality’</td>
<td>3</td>
</tr>
</tbody>
</table>

DBT = dialectical behaviour therapy, ACT = acceptance and commitment therapy, MBSR = mindfulness-based stress reduction, pd = per day, pw = per week, hr = hour, x = times, ave. = average, sig. = significant, FU = follow-up, TAU = treatment as usual, d = effect size (Cohen’s d; Cohen, 1988), MDD = major depressive disorder, ODD = oppositional defiance disorder, ADHD = attention-deficit-hyperactivity disorder, BD = bipolar disorder, BPD = borderline personality disorder, DSH = deliberate self-harm, NSSI = non-suicidal self-injury, STM = standard therapeutic milieu, CD=conduct disorder, PTSD = post-traumatic stress disorder, ITT = intention-to-treat, PD = personality disorder, LAC = Looked After Children, RCT = randomized controlled trial

Note: quality assessment score is based on Thomas, 2003; 1=strong, 2=moderate, 3=weak
Appendix F:

Outcome Measures Used Within Included Studies
### Outcome Measures Used Within Included Studies

#### Table F1. Measures of Suicidal Ideation

<table>
<thead>
<tr>
<th>Measure</th>
<th>Abbreviation</th>
<th>Reference</th>
</tr>
</thead>
</table>

#### Table F2. Measures of Suicide Attempts, Self-Harm and Non-Suicidal Self-Injury

<table>
<thead>
<tr>
<th>Measure</th>
<th>Abbreviation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure</td>
<td>Abbreviation</td>
<td>Reference</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
Appendix G:

Submission Guidelines for Behaviour Research and Therapy
Behaviour Research and Therapy
An International Multi-Disciplinary Journal

*Behaviour Research and Therapy* encompasses all of what is commonly referred to as cognitive behaviour therapy (CBT). The focus is on the following: theoretical and experimental analyses of psychopathological processes with direct implications for prevention and treatment; the development and evaluation of empirically-supported interventions; predictors, moderators and mechanisms of behaviour change; and dissemination and implementation of evidence-based treatments to general clinical practice. In addition to traditional clinical disorders, the scope of the journal also includes behavioural medicine. The journal will not consider manuscripts dealing primarily with measurement, psychometric analyses, and personality assessment.

The Editor and Associate Editors will make an initial determination of whether or not submissions fall within the scope of the journal and/or are of sufficient merit and importance to warrant full review.

**Contact details**
Any questions regarding your submission should be addressed to the Editor in Chief:
Professor G. T. Wilson
Psychological Clinic at Gordon Road
Rutgers
The State University of New Jersey
41C Gordon Road
Piscataway
New Jersey
08854-8067
USA
Email: brat@rci.rutgers.edu

**Article structure**

*Subdivision - unnumbered sections*
Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply ‘the text’.

*Appendices*
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

*Essential title page information*

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that phone numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address. Contact details must be kept up to date by the corresponding author.
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a ‘Present address’ (or ‘Permanent address’) may be indicated as a footnote to
that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract
A concise and factual abstract is required with a maximum length of 200 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract
A Graphical abstract is optional and should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See http://www.elsevier.com/graphicalabstracts for examples.
Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images also in accordance with all technical requirements: Illustration Service.

Highlights
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See http://www.elsevier.com/highlights for examples.

Keywords
Immediately after the abstract, provide a maximum of 6 keywords, to be chosen from the APA list of index descriptors. These keywords will be used for indexing purposes.

Abbreviations
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Shorter communications
This option is designed to allow publication of research reports that are not suitable for publication as regular articles. Shorter Communications are appropriate for articles with a specialized focus or of particular didactic value. Manuscripts should be between 3000-5000 words, and must not exceed the upper word limit. This limit includes the abstract, text, and references, but not the title page, tables and figures.

Artwork

Electronic artwork
General points
• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use
fonts that look similar.

• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the printed version.
• Submit each illustration as a separate file.

A detailed guide on electronic artwork is available on our website:
http://www.elsevier.com/artworkinstructions

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/halftone (color or grayscale), keep to a minimum of 500 dpi.

Please do not:

• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

References

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Reference management software

This journal has standard templates available in key reference management packages EndNote (http://www.endnote.com/support/enstyles.asp) and Reference Manager (http://refman.com/support/rmstyles.asp). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

Reference style

Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth
List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters ‘a’, ‘b’, ‘c’, etc., placed after the year of publication.

Examples:
Reference to a journal publication:

Reference to a book:

Reference to a chapter in an edited book:

Video data
Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file’s content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: [http://www.sciencedirect.com](http://www.sciencedirect.com). Please supply ‘stills’ with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at [http://www.elsevier.com/artworkinstructions](http://www.elsevier.com/artworkinstructions). Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Supplementary data
Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: [http://www.sciencedirect.com](http://www.sciencedirect.com). In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at [http://www.elsevier.com/artworkinstructions](http://www.elsevier.com/artworkinstructions).

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
• Phone numbers
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
Further considerations
• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Web)
• Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
• If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes

For any further information please visit our customer support site at http://support.elsevier.com.
Appendix H:

Beck Depression Inventory-Youth (BDI-Y)

Due to copyright law, the BDI-Y has not been included in the current thesis. For examination purposes, a hard copy is enclosed in a pocket at the back of the thesis.
Appendix I:

Beck Hopelessness Scale (BHS)

Due to copyright law, the BHS has not been included in the current thesis. For examination purposes a hard copy is enclosed in a pocket at the back of the thesis.
Appendix J:

Beck Scale for Suicidal Ideation (BSS)

Due to copyright law, the BSS has not been included in the current thesis. For examination purposes a hard copy is enclosed in a pocket at the back of the thesis.
Appendix K:

**Difficulties in Emotional Regulation Scale (DERS)**

Due to copyright law, the DERS has not been included in the current thesis. For examination purposes a hard copy is enclosed in a pocket at the back of the thesis.
Appendix L:

Self-Harm Diary Log
**BMAC Project: Diary Log**

For each day of the week, please record below (using a tick or tally):

Number of times you self-harmed

<table>
<thead>
<tr>
<th>Number of times you self-harmed</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
</table>

Appendix M:

National Research Ethics Service Approval Letter and R&D Approval Letter
Health Research Authority

NRES Committee North West - Greater Manchester North
3rd Floor, Barlow House
4 Minshull Street
Manchester
M1 3DZ
Tel: 0161 625 7817
Email: cynthia.carter@northwest.nhs.uk

Mrs Clare Duddridge
Doctoral Student, Clinical Psychology Department
University of Manchester
Zochonis Building
Brunswick Street
M13 9PL

02 September 2011

Dear Mrs Duddridge

Study title: Broad minded affective coping with adolescents at risk of suicide and self-harm: a case series.

REC reference: 11/NW/0189

Thank you for your letter of 30 August 2011, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see “Conditions of the favourable opinion” below).

Non-NHS sites

The Committee has not yet been notified of the outcome of any site-specific assessment (SSA) for the non-NHS research site(s) taking part in this study. The favourable opinion does not therefore apply to any non-NHS site at present. We will write to you again as soon as one Research Ethics Committee has notified the outcome of a SSA. In the meantime no study procedures should be initiated at non-NHS sites.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

A Research Ethics Committee established by the Health Research Authority
Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of insurance or indemnity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPCR Information Sheets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigator CV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigator CV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigator CV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter from Sponsor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter from Statistician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other: Letter from Service Manager (Cheadle Royal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant Consent Form: Parent/Guardian</td>
<td>2</td>
<td>21 July 2011</td>
</tr>
<tr>
<td>Participant Consent Form</td>
<td>2</td>
<td>21 July 2011</td>
</tr>
<tr>
<td>Participant Information Sheet: Parent/Guardian</td>
<td>2</td>
<td>21 July 2011</td>
</tr>
<tr>
<td>Participant Information Sheet</td>
<td>2</td>
<td>21 July 2011</td>
</tr>
<tr>
<td>Protocol</td>
<td>1</td>
<td>05 October 2010</td>
</tr>
<tr>
<td>Questionnaire: Beck Youth Inventories (BDI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire: Beck Hopelessness Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire: Beck Scale for Suicidal Ideation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire: Difficulties in Emotional Regulatio Scale (DERS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REC Application</td>
<td>3.1</td>
<td>17 March 2011</td>
</tr>
<tr>
<td>Referees or other scientific critique report</td>
<td>Letter from Research Subcommittee</td>
<td>16 October 2010</td>
</tr>
<tr>
<td>Response to Request for Further Information</td>
<td>1</td>
<td>30 August 2011</td>
</tr>
</tbody>
</table>

A Research Ethics Committee established by the Health Research Authority
Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

11/NW/0169 Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Dr Peter Klimiuk
Chair

Enclosures: “After ethical review – guidance for researchers” SL-AR2
Copy to: Ms Catherine Barrow, Research Governance, University of Manchester
Ty Glover, Cheadle Royal Hospital (By email ty.glover@priorygroup.com)

A Research Ethics Committee established by the Health Research Authority
11 April 2012

Mrs Clare Dudridge
University of Manchester
Clinical Psychology Department
Zochonis Building
Brunswick Street
Manchester
M13 9PL

Dear Mrs Dudridge

Study title: Broad minded affective coping with adolescents at risk of suicide and self-harm: a case series.

REC reference: 11/NW/0189
SSA reference: 12/NW/0339

The REC gave a favourable ethical opinion to this study on 2 September 2011.

Notification(s) have been received from local assessor(s), following site-specific assessment. On behalf of the Committee, I am pleased to confirm the extension of the favourable opinion to the new site(s) and investigator(s) listed below:

<table>
<thead>
<tr>
<th>Research Site</th>
<th>Principal Investigator / Local Collaborator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gleadle Royal Hospital, YPU (Affinity Healthcare, part of the Priory Group) - partner organisation of NHS</td>
<td>Mrs Clare Dudridge</td>
</tr>
</tbody>
</table>

The favourable opinion is subject to management permission or approval being obtained from the host organisation prior to the start of the study at the site concerned.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.
Yours sincerely

Signed on behalf of:
Ms Cynthia Carter
Committee Co-ordinator

Email: cynthia.carter@northwest.nhs.uk

Copy to: Ms Lynne Macrae – The University of Manchester
Ty Glover
Affinity Healthcare
Chadle Royal Hospital
100 Wilmshurst Road
Chadle
Cheshire
SK8 3DG
Appendix N:

Participant Information Sheet and Consent Form
Broad Minded Affective Coping (BMAC) - Participant Information Sheet  
Please read this sheet carefully.

What is the study about?

This study is designed to look at whether a new treatment technique, known as ‘Broad Minded Affective Coping’ (BMAC) is helpful for young people. The technique involves remembering good times in your life and using these memories to improve mood and coping skills. We want to find out whether young people find the technique helpful and whether it has positive effects, such as improving mood or stopping young people from hurting themselves.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and you will be asked to sign a consent form (giving ‘consent’ means that you are agreeing to take part). You will also be given a copy of the signed consent form to keep. If you decide to take part you are still free to change your mind at any time and without giving a reason. If you decide not to take part this will not affect your treatment on the unit.
What will happen to me if I take part?

If you decide to take part you will be visited by the researcher to discuss the study further. If you are under 16, we will also need to contact your parent/guardian to get their permission for you to participate.

The study involves attending eight sessions in total. Three sessions will involve talking about your likes/dislikes, interests and hobbies, so that the researcher can get to know you. Four sessions will involve you learning and practising the BMAC technique. The final session will be an opportunity for you to give your opinion on the study and the techniques used (this session will be audio-taped). Sessions will happen weekly, on the unit, and will last for about one hour. At every session, you will be asked to complete some questionnaires. You will also be asked to complete a short diary log between sessions.

The study will NOT involve taking any drugs or being ‘analysed’ by the researcher and it will not affect the way you are treated whilst on the unit. It is important to note that the researcher will need to access your clinical records for information relevant to the study and also to record when you have attended sessions.

What are the likely benefits?

We hope that the study will help you to remember some positive experiences in your life, help to improve your mood, and give you a new way of coping. We cannot guarantee that the study will help you, but the information we get from your participation might help other young people in the future. The study will add to our understanding of the BMAC technique and whether it is helpful to young people who are having difficulties. All participants will be entered into a prize draw with the chance of winning a £20 music voucher.

Will anyone else know that I am doing this?

We will keep your information in confidence. This means that we will only tell those who have a need or a right to know. If you are under 16, your parent or guardian will know that you are doing the study, as we will need their permission for you to take part. For all participants, we will inform your doctor (GP), and the hospital staff responsible for your care, that you are taking part.
A copy of your consent form will be copied into your usual medical notes and this copy may be seen by a clinical audit team (a team of staff responsible for checking the quality of your care in hospital).

**Will personal details be kept confidential?**

If you agree to take part in the study, any information you give to the researcher will be kept strictly confidential (private). This means that the researcher will not share any personal information with anyone outside of the research team without your permission. The exception to this is if the researcher feels that either you or somebody else is at risk of harm. In this case, the researcher would let a member of the hospital staff know their concerns and would make a note in your clinical record.

All data collected during the research will be anonymised (this means that your identity will remain private). Your name, or any information that might give away your identity, will not appear on any of the forms, questionnaires or diary logs. Instead, you will be given a unique participant number.

The audio-tape used in the final session will be anonymised and stored in a safe place. The researcher will use the tape to write down any comments you made and once this has been completed, the tape will be destroyed.

All anonymised data will be stored in a secure place at the University of Manchester and destroyed after ten years. This data will be used only by the research team, but it may be looked at by university or clinical staff responsible for checking the quality of research.

**What will happen to the results of the research study?**

If you take part in the study, you can ask for a copy of the overall results and these will be sent to you by post.

The findings will be presented to University staff and a range of medical professionals. It is also intended that the results of the study will be published in a scientific journal. Information from your questionnaires and diary logs, and any comments that you made in the feedback session, may be included in these reports; however your identity will remain completely private.

**What if I change my mind?**

You do not have to take part in this study. If you have agreed to take part, you can stop at any time without giving your reasons. This will have no effect on your treatment on the unit.
Who can I talk to for further information?

The researcher is called Clare Duddridge and you can contact her for further information.

Address: Division of Clinical Psychology
2nd Floor, Zochonis Building
University of Manchester
Brunswick Street
Manchester M13 9PL

Email: clare.duddridge@postgrad.man.ac.uk

Telephone: 0161 306 0400

What if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions. If they are unable to help or you wish to make a complaint regarding the study, please contact a University Research Practice and Governance Co-ordinator on 0161 275-7583 or 0161 275-8093 or by email to research-governance@manchester.ac.uk

PLEASE DO NOT HESITATE TO ASK IF YOU HAVE ANY MORE QUESTIONS, EITHER NOW OR LATER

Thank you for reading this information sheet.
Consent Form

Project: Broad Minded Affective Coping
Researchers: Clare Duddridge, Dan Pratt, Kirsty Smedley and Miranda Casswell.

Please initial box

I agree that I have read and understood the information sheet dated............for the above study. I have had the opportunity to think about the information, ask questions, and have had these answered in a way I understand.

I understand that it is up to me whether I take part, and that it is okay to stop taking part at any time, without giving any reason, and without my treatment, or legal rights, being affected.

I understand that my GP and hospital staff involved in my care will be told that I am participating in the study.

I understand that my clinical record and data collected during the study may be looked at by responsible individuals from the University of Manchester, from the Priory Group, from regulatory authorities, or from the NHS trust, where it is to do with my taking part in the research. I give permission for these individuals to have access to my records.
I agree for the feedback session to be audio-taped

I agree for anonymised direct quotations (comments I made) to be used when reporting the findings

I agree to take part in the above study

_________________________  ______________________  ______________________
Name of participant        Date                       Signature

_________________________  ______________________  ______________________
Name of researcher          Date                       Signature

Thank you for your help.