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O'Driscoll, D., & McAleese, M. (2021). The feasibility and effectiveness of compassionate mind training as a test anxiety intervention for adolescents: A preliminary investigation. *Counselling and Psychotherapy Research*. Advance online publication. <https://doi.org/10.1002/capr.12447>

Published in:
Counselling and Psychotherapy Research

Document Version:
Peer reviewed version

Queen's University Belfast - Research Portal:
[Link to publication record in Queen's University Belfast Research Portal](#)

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Counselling and Psychotherapy Research

The Feasibility and Effectiveness of Compassionate Mind Training as a Test Anxiety Intervention for Adolescents: A Preliminary Investigation

Dean O'Driscoll, & Maria McAleese

Queen's University Belfast

Funding Information

Dean O'Driscoll is supported by a Northern Ireland Department of Education Educational Psychology training award.

Correspondence

Correspondence concerning this article should be addressed to Dean O'Driscoll, Doctorate in Educational, Child and Adolescent Psychology (DECAP) Programme, School of Psychology, 18 – 30 Malone Road, Belfast BT9 5BN, Northern Ireland. E-mail: dodriscoll02@qub.ac.uk

This is a pre-production version of the following article: O'Driscoll, D., & McAleese, M. (in press). The Feasibility and Effectiveness of Compassionate Mind Training as a Test Anxiety Intervention for Adolescents: A Preliminary Investigation. *Counselling and Psychotherapy Research*. <https://doi.org/10.1002/capr.12447>

Abstract

Test anxiety can have a deleterious impact on academic achievement and adversely affect adolescent wellbeing both concurrently and in later life. The current study explored the use of Compassionate Mind Training (CMT) as a school-based intervention for test anxiety among adolescents. Participants were 47 adolescents, aged 16 to 17 years old, attending a post-primary school in the UK and enrolled to take qualifications beyond compulsory education. Participants were quasi-randomly allocated on the basis of timetable availability into an intervention group that received eight sessions of CMT ($n = 22$) or a control group ($n = 25$). Participants in both groups completed pre- and post-intervention measures of test anxiety, general anxiety, and self-compassion. Attendance and retention rates were used as an index of intervention feasibility. The findings indicated that CMT was a feasible and effective intervention. Adolescents receiving CMT showed significant reductions in test anxiety and general anxiety, as well as a significant improvement in self-compassion following the intervention compared to the control group. The findings highlight the potential value of CMT in supporting young people suffering from test anxiety in schools. The implications for counselling practice are discussed.

Keywords: Compassionate Mind Training; Test Anxiety; General Anxiety; Self-compassion; Adolescent; School.

The Feasibility and Effectiveness of Compassionate Mind Training as a Test Anxiety Intervention for Adolescents: A Preliminary Investigation

High levels of anxiety are common among young people (Cummings et al., 2014), which represents an emerging public health concern (Johnson & Greenberg, 2013). Youth may be particularly vulnerable to the onset of anxiety difficulties during adolescence, due to marked physiological and psychological changes and exposure to a greater number of novel social and environmental stressors (Costello et al., 2003). It is estimated that around one third of adolescents aged between 13 to 18 years old suffer from an anxiety disorder (Merikangas et al., 2010). School and examination-based pressures are often identified as a particular source of anxiety among young people (Putwain et al., 2014). Test anxiety is a form of anxiety elicited in response to a perception of examinations as threatening, which can have deleterious effects on academic performance and wellbeing (Putwain & Daly, 2014). However, the evidence-base for test anxiety interventions for applications with young people in schools remains limited (Soares & Woods, 2020). There is therefore a need for further research on test-anxiety interventions, including the effectiveness of novel approaches to broaden the therapeutic repertoire offered to schools. The current study explores the use of Compassionate Mind Training (CMT) as a school-based intervention for test anxiety among adolescents.

Test Anxiety among Adolescents

Test anxiety affects cognition (i.e., catastrophising and worrying thoughts about failure), affect (i.e., fear and panic), and physiology (i.e., nausea and elevated heart rate) in response to examinations (Segool et al., 2014). Test anxiety typically develops around the fear of failure, which threaten feelings of self-efficacy and worth, identity, personal and career goals, and appraisals from others (Putwain, 2009). Test

anxiety is experienced across ages and educational contexts, including primary, post-primary, and higher education (von der Embse et al., 2018). Test anxiety tends to increase with age (e.g., McDonald, 2001), likely due to the fact that young people face a growing number of school-based pressures to achieve academic success throughout childhood and adolescence and display a greater sensitivity to evaluative situations (Blakemore & Mills, 2014; Klinger et al., 2015). Similarly, adolescents take compulsory examinations in post-primary school of which the results are perceived to have much more significance (von der Embse & Hasson, 2012). Putwain and Daly (2014) found that around 16% of adolescents, aged between 15 and 16 years old, scored within the upper 66th percentile of test anxiety scores. Similarly, von der Embse et al. (2014) reported that approximately 30% of young people, aged 16 to 17 years, were identified as experiencing heightened levels of test anxiety. Such findings have been interpreted as evidence of the endemic nature of test anxiety.

Test anxiety has been shown to negatively impact academic achievement (von der Embse et al., 2018). That is, young people with higher levels of test anxiety are more likely to perform poorer in examinations (Putwain & Daly, 2013). Test anxiety is associated with cognitive interference, such as impaired working memory and disrupted recall of learned information while taking examinations (Owens et al., 2014; Zeidner, 2014). It is estimated that test anxiety can influence performance in school examinations to the extent that adolescents are awarded approximately one grade boundary less than would be expected if anxiety levels were reduced (Putwain, 2008).

The impact of test anxiety on examination performance has been found to affect young people's motivation to engage with school and can have long-term implications for employment prospects and ability to access further education

(Putwain & Aveyard, 2016). Similarly, studies have identified the impact of test anxiety on the development of mental health and wellbeing difficulties (Akinsola & Nwajei, 2013; Herzer et al., 2014). For example, Steinmayr et al. (2016) found that youth with higher test anxiety reported reduced subjective wellbeing, including lower life satisfaction and fewer positive emotions. The negative effects of test anxiety on academic achievement and wellbeing have also been shown to adversely influence adolescents' life trajectories, such as exacerbating the risk of developing mental health difficulties in adulthood (Esbjörn et al., 2012).

Greater awareness around the potential negative impacts of high levels of test anxiety paired with an emerging emphasis on performance accountability have led a growing number of schools to implement strategies to lessen anxiety around examinations. However, the evidence-base for test anxiety programs developed and evaluated for applications with adolescents in educational contexts remains limited, as research has tended to focus on undergraduate students (Soares & Woods, 2020). Yet, it is commonly acknowledged that adolescents can struggle more with emotional regulation, adopting appropriate examination preparation techniques, and dealing with academic challenges in comparison to those in higher education (Eisenberg et al., 2010; Lerner et al., 2011). Test anxiety among young people also has the potential to persist into later life without intervention (Putwain et al., 2014). To date, empirically supported test anxiety interventions in schools tend to involve cognitive-behavioural, psychoeducation, skills training, or relaxation approaches (von der Embse et al., 2013). For example, cognitive-behavioural interventions that involved practicing calming strategies, developing study skills, and enabling positive internal self-talk were effective in lowering test anxiety among youth (Putwain et al., 2014; Putwain & Pescod, 2018). Similar cognitive-behavioural approaches have also

noted positive secondary outcomes by reducing clinical anxiety due to an overlap between test anxiety and other anxiety domains (Putwain & von der Embse, 2021). However, these interventions have primarily been used to offer targeted support for young people identified as highly test-anxious. There is therefore a need for the development of novel interventions to lessen test anxiety among adolescents that can be universally applied across the school population. In particular, young people struggling with test anxiety may benefit from approaches that provide opportunities to better understand their difficulties, learn to regulate emotional states and foster a more constructive relationship with the self during challenging times (Cunha & Paiva, 2012).

One such intervention may involve cultivating compassion, which has been identified as a potential solution for dealing with mental health and wellbeing difficulties in educational settings (Maratos et al., 2019a), including schools (Al-Ghabban, 2018).

Compassion-based Interventions

Compassion has been shown to provide a more prosocial approach for relating to the self and others. For example, greater compassion is linked to improved mental health and wellbeing (Kirby et al., 2017). As such, interventions have been established to cultivate compassion. Six compassion-based interventions have been identified, which are empirically supported with adult populations (Kirby, 2017): (1) Compassion Focused Therapy (CFT; Gilbert, 2009); (2) Mindful Self-compassion (Neff & Germer, 2013); (3) Compassion Cultivation Training (Jazaieri et al., 2013); (4) Cognitively Based Compassion Training (Pace et al., 2009); (5) Cultivating Emotional Balance (Kemeny et al., 2012); and (6) Compassion and Loving Kindness Meditations (Wallmark et al., 2013). The vast majority of these

approaches share similar Buddhist and mindfulness underpinnings. While integrating some of these components, CFT draws upon a different model based on evolutionary psychology, attachment theory, applied psychological processes, and an awareness of motivational systems (Gilbert, 2014).

Compassion Focused Therapy and Compassionate Mind Training

CFT was originally created as a transdiagnostic intervention to support people with high levels of self-criticism and shame (Gilbert & Irons, 2005). CFT aims to develop caring-related motives, thoughts, emotions, and behaviours to reduce feelings of distress (Gilbert, 2009). CFT has been shown to foster positive psychological outcomes for those struggling with eating disorders (Gale et al., 2014), post-traumatic stress (Beaumont et al., 2016), personality disorders (Lucre & Corton, 2013), psychosis (Braehler et al., 2013), and mood disorders (Gilbert & Proctor, 2006).

CMT is a component of CFT, which primarily focuses on the delivery of psychoeducation to develop the skills to cultivate compassion. CMT initially provides information relating to the definition of compassion as a sensitivity to suffering in the self and others with a desire to mitigate or prevent it, conceptualises compassion as an interactive flow (i.e., directed from self to other, received from other to self, and self-compassion), and discusses fears, blocks, and resistances to compassion. The intervention then considers the influence of evolution in shaping both the body and mind and how evolved processes cause difficulties in everyday life, having shaped the development of a 'tricky brain' for which the person is not to blame. CMT explores the evolved functions of emotions, which correspond to three interconnected systems (Gilbert, 2014): (1) a threat system that functions to detect dangers and is associated with defensive emotions to protect the self (e.g., anxiety

and anger); (2) a drive system that functions to acquire resources for survival and is associated with energising emotions (e.g., excitement and pleasure); and (3) a soothing system that functions to facilitate rest or garner a sense of peace and is associated with caregiving emotions (e.g., safeness and contentment).

CMT highlights that cultivating compassion can activate and strengthen the soothing system, which in turn, regulate difficult emotional states brought about by the threat and drive systems (Gilbert, 2009). The intervention also presents a diverse range of practices to improve awareness to physical and psychological experiences and calm the body by activating the parasympathetic nervous system. CMT practices relate to grounding (e.g., soothing rhythm breathing) and compassionate imagery techniques (e.g., visualising receiving or displaying compassion). The overall aim of these practices is to generate a more compassionate self-identity that displays qualities of kindness, strength, wisdom, and commitment (i.e., the compassionate self). The compassionate self can then be embodied in everyday life to deal with difficulties, failures, and challenges (Kirby & Gilbert, 2017). Given its psychoeducational focus, CMT is best suited for applications with groups that share a particular set of problems (Maratos et al., 2019b).

A growing number of studies have also identified benefits associated with CMT. For example, frequent practice of CMT exercises for two weeks was related to significantly lower anxiety, stress, depression, and self-criticism, and significantly higher levels of self-compassion with non-clinical populations (McEwan & Gilbert, 2016; Matos et al., 2017). Irons and Heriot-Maitland (2020) found that members of the general public reported reductions in psychological distress and self-criticism, as well as increases in compassion, positive emotional states, and wellbeing after an 8-week CMT course. Similarly, practicing CMT exercises was associated with

decreased self-criticism and greater self-compassion among teachers and support staff taking part in a school-based CMT program (Maratos et al., 2019b). McEwan et al. (2018) also demonstrated that online CMT-based exercises reduced test anxiety and improved self-compassion among highly test-anxious adult undergraduate students over the age of 18 years.

Less is known, however, about the applications of CMT with adolescents, which reflects an emerging area of research. Early evidence appears to suggest that this approach can also be effective in supporting young people with mental health and wellbeing difficulties (e.g., Bratt et al., 2020b). For example, CFT was found to reduce psychopathic traits and challenging behaviours among incarcerated youth (Ribeiro da Silva et al., 2019). Similarly, adolescents with complex mental health needs reported that group CFT fostered greater feelings of connectedness with others, self-acceptance, and a sense of inner peace (Bratt et al., 2020a). No studies to date have applied CMT with young people in a school setting. To our knowledge, no studies have also evaluated the effects of CMT on test anxiety among adolescents, which may have important implications for the development of positive youth outcomes. The current study therefore aims to explore the feasibility and effectiveness of CMT as a test anxiety intervention for adolescents in school.

Method

Participants

Participants were 50 adolescents recruited from a post-primary school in the UK. All adolescents were enrolled in the first year of a two-year Advanced Level (A-Level) qualification, which is optional beyond compulsory education and typically required for entry into university (56% opt-in participation rate). Three adolescents were removed from further analyses as they were also accessing other

psychological support services. The final sample pre-intervention comprised of 47 adolescents, aged 16 to 17 years old (72% female, $n = 34$; 28% male, $n = 13$). The sample post-intervention consisted of 45 returning adolescents (73% female, $n = 33$; 27% male, $n = 12$). The study had 96% retention across both timepoints.

Procedure

The study adopted a pre-post design with a CMT and control group. Ethical approval for the study was obtained from [author identifying university]. The school principal provided written permission for the research to be carried out within their school. Packs containing information letters and consent forms were then sent home with all adolescents in the eligible year group. Informed written consent was received from adolescents and their parents before taking part in the study.

The sample was quasi-randomly split on the basis of timetable availability into an intervention group that accessed CMT in school ($n = 22$) and control group that did not receive the intervention ($n = 25$). That is, young people were allocated to the intervention group if they did not have scheduled class when the intervention was planned to take place. Adolescents in both groups completed paper-based questionnaires at pre- and post-intervention that measured test anxiety, general anxiety, and self-compassion. Those involved the intervention group also completed a post-intervention questionnaire assessing their practice of CMT exercises and embodiment of the compassionate self during the course of the intervention. A record of attendance for intervention sessions was kept each week. Attendance was voluntary and adolescents were free to opt-out at any point.

Intervention Overview

The intervention consisted of eight sessions. These sessions took place on a weekly basis between January and March 2020. Each session lasted approximately 35 minutes.

Intervention sessions were delivered at a time throughout the school day when adolescents did not have scheduled class. As such, the intervention group was divided into two smaller cohorts ($n = 10$ and $n = 12$) that received CMT at different times during the week to accommodate variations in school timetables.

Intervention sessions included psychoeducation, group discussions, and CMT practice exercises. Although not a requirement, adolescents were encouraged to share relevant personal experiences within a supportive group environment to create a connection with the intervention content. Exercises were shortened for applications with younger populations and adolescents were encouraged to engage in these practices outside of sessions. CMT exercises were presented using audio recordings to ensure consistent delivery between intervention groups. The intervention intended to improve adolescents' awareness to distress and recognise that they are not to blame for their difficulties, but also fostering a sense of responsibility to learn the skills to effectively alleviate distress. Following British Psychological Society (BPS; 2018) guidelines around increasing benefits and reducing risks, adolescents were advised to speak with the researcher after each session if the content of the intervention triggered any feelings of distress. A brief outline of the intervention content is presented below:

Session One. The session introduced the concept of compassion, reality checks around how and why people suffer, and the need for compassion, which was followed by a soothing rhythm breathing practice.

Session Two. The session provided the definition of compassion and idea of compassion as a flow. Adolescents were then introduced to the notion of the 'tricky brain', which offered an insight into the evolved mind of humans, its focus on threat, and the development of unhelpful loops of thinking, feeling, and behaving. Adolescents also practiced soothing rhythm breathing.

Session Three. The session focused on the three-systems model of emotions (i.e., threat, drive, and soothing) and how balancing these systems can reduce distress and promote wellbeing. Soothing rhythm breathing was paired with kind facial expressions and positive internal self-talk.

Session Four. The session considered compassion toward others. Adolescents were later introduced to compassionate imagery techniques using compassionate colour and safe space practices to cultivate a sense of feeling soothed and content.

Session Five. The session explored receiving compassion from others. Adolescents engaged in compassionate imagery practices to construct an ideal compassionate other to provide support and care.

Session Six. The session considered the nature and function of self-criticism. Self-compassion was then explored as an antidote for dealing with self-criticism, including constructing a more compassionate self-identity. At this point, adolescents engaged in compassionate imagery practices to generate a version of the compassionate self that displayed the compassionate qualities of kindness, strength, wisdom, and commitment.

Session Seven. The session involved further developing a compassionate self-identity and understanding how the compassionate self could be used to deal

with difficulties in everyday life. Adolescents again took part in imagery practices relating to embodying the qualities of the compassionate self.

Session Eight. The session reviewed the content of the intervention. A discussion also took place around dealing with fears, blocks, and resistances to compassion. Adolescents engaged in compassionate imagery practices of using the compassionate self to direct compassion toward the self to promote thriving and growth into the future.

Measures

Feasibility

Feasibility of CMT was indexed using attendance and retention data within the intervention group. Commensurate with previous compassion-based interventions with adolescents (e.g., Bluth et al., 2016), the criteria of 75% attendance and 80% retention were applied to evaluate feasibility.

Test Anxiety

Test anxiety was assessed using the Test Anxiety Inventory (TAI; Spielberger, 1980). The TAI consisted of 20 items that measure the cognitive, affective, and physiological aspects of test anxiety, which can be combined to provide a total test anxiety score. Adolescents responded to each item using a 4-point Likert scale ranging from 0 = *almost never* to 3 = *almost always*. All items were summed to compute a total test anxiety score (min = 0, max = 60). Higher scores reflected higher levels of test anxiety. The internal consistency of the scale was excellent for both timepoints (Cronbach's α pre-intervention = .93; Cronbach's α post-intervention = .93).

General Anxiety

General anxiety was measured using the trait component of the State-Trait Anxiety Inventory (STAI-T; Spielberger et al., 1983). The STAI-T comprised of 20 items that assesses individual tendencies to experience anxiety in day-to-day life. Adolescents responded to these items on a 4-point Likert scale ranging from 0 = *almost never* to 3 = *almost always*. All items were summed to provide a total score for general anxiety (min = 0, max = 60). Higher scores represented greater levels of anxiety. The scale demonstrated excellent internal consistency across both timepoints (Cronbach's α pre-intervention = .93; Cronbach's α post-intervention = .93).

Self-Compassion

Self-compassion was assessed using the Self-Compassion Scale – Short Form (SCS-SF; Raes et al., 2011). The SCS-SF contains 12 items that measure patterns of relating to the self during difficult times. Responses to each item were reported using a 5-point Likert scale from 0 = *almost never* to 4 = *almost always*. All items were summed to calculate a total score for self-compassion (min = 0, max = 48). Higher scores indicated more self-compassion. The scale displayed good internal consistency at both timepoints (Cronbach's α pre-intervention = .81; Cronbach's α post-intervention = .86).

Practice of CMT Exercises and Embodiment of the Compassionate Self

Adolescents' practice of CMT exercises and embodiment of the compassionate self were measured using a CMT practice scale (Matos et al., 2018). The CMT practice scale contained 11 items that measured practice of CMT exercises and embodying the compassionate self during the course of the intervention. Frequency of engaging in CMT exercises was assessed using a single

item on a 5-point Likert scale with the responses of 1 = *never*, 2 = *one to two times per week*, 3 = *three to four times per week*, 4 = *five to six times per week*, and 5 = *seven or more times per week*. Helpfulness of CMT exercises was also measured with a single item using a 5-point Likert scale, which included 1 = *unhelpful*, 2 = *not very helpful*, 3 = *neither helpful nor unhelpful*, 4 = *quite helpful*, and 5 = *very helpful*. Recall of acting and feeling as the compassionate self was gauged using a single item with adolescents responding either 1 = *no* and 2 = *yes*. The remaining items used a 10-point Likert scale for different aspects of embodying the compassionate self in day-to-day life: two items on the frequency of experiencing the compassionate self ranging from 1 = *never* to 10 = *a lot of the time*; a single item on the power of compassionate feelings from 1 = *not powerful at all* to 10 = *very powerful*; two items on the easiness of embodying the compassionate self from 1 = *not easy at all* to 10 = *very easy*; a single item on the duration of compassionate feelings from 1 = *fleeting* to 10 = *most of the day*; a single item on the soothing effect of compassionate feelings from 1 = *not comforting at all* to 10 = *very comforting*; and single item on the impact on compassionate actions from 1 = *very negative* to 10 = *very positive*. No internal consistency or total score for embodiment of the compassionate self was calculated due to variations in methods of reporting. The scale was used to provide a descriptive overview of adolescents' engagement with CMT.

Results

Feasibility of Compassionate Mind Training

The intervention had high attendance. As such, the mean attendance proportion among those that retained in the intervention was 89% ($M = .89$, $SD = .09$). None of these adolescents were absent for more than two sessions (approximately 20% missed two sessions). During the course of the intervention, two

adolescents withdrew (i.e., one after session three and one following session six) as a result of scheduling difficulties. In light of such attrition, the intervention had a 91% retention rate. The attendance and retention rates of the current study exceed the established feasibility criteria indicating that CMT was a feasible intervention when delivered among adolescents in school.

Effectiveness of Compassionate Mind Training

All main analyses were run using IBM SPSS Statistics (Version 26). A series of independent samples t-tests were initially conducted to compare pre-intervention scores for adolescents allocated to the CMT intervention and control group. Bonferroni-corrected significance values were applied to account for multiple comparisons. Cohen's *d* effect sizes were added with .20 = small, .50 = medium, and .80 = large effects (Cohen, 1988). There were no significant baseline differences between these groups for test anxiety ($t(45) = 1.71, p = .094, d = .501$), general anxiety ($t(45) = 1.69, p = .098, d = .494$), and self-compassion ($t(45) = 1.32, p = .194, d = .385$). Descriptive statistics for test anxiety, general anxiety, and self-compassion at pre- and post-intervention for the intervention and control groups are presented in Table 1.

To assess the effectiveness of CMT, separate 2 x 2 mixed ANOVAs were then conducted for test anxiety, general anxiety, and self-compassion, with a between-subjects factor of group (i.e., CMT intervention or control) and a within-subjects factor of time (i.e., pre-intervention or post-intervention). Power analysis estimated that the sample size was sufficient to detect moderate effects with 80% statistical power assuming $\alpha = .05$. Partial eta squared (η_p^2) effect sizes were calculated for the main effects and interactions within the ANOVAs, which were interpreted as .01 = small effect, .06 = medium effect, and .14 = large effect (Cohen,

1988). A series of post-hoc paired samples t-tests with Bonferroni-corrected significance values were also applied to examine within-group changes from pre-to post-intervention.

Test Anxiety

There was no significant main effect of group, $F(1, 43) = .53, p = .469, \eta_p^2 = .012$, but there was a large significant main effect of time, $F(1, 43) = 17.72, p < .001, \eta_p^2 = .292$. This was made clear by a significant interaction effect between group and time, $F(1, 43) = 27.20, p < .001, \eta_p^2 = .387$ (Figure 1). That is, adolescents receiving CMT reported a large significant reduction in test anxiety from pre- to post-intervention ($t(19) = 5.42, p < .001, d = 1.212$), while those in the control group showed no significant change in scores across time ($t(24) = .89, p = .381, d = .572$).

General Anxiety

There was no significant main effect of group, $F(1, 43) = .43, p = .514, \eta_p^2 = .10$. However, the main effect of time was significant with a large effect size, $F(1, 43) = 17.69, p < .001, \eta_p^2 = .292$, which was then made clear by a significant interaction effect between group and time, $F(1, 43) = 14.10, p < .001, \eta_p^2 = .247$ (Figure 2). Adolescents in the intervention group showed a large significant decrease in general anxiety from pre-to post-intervention ($t(19) = 4.62, p < .001, d = 1.033$), whereas the control group reported no significant change in scores ($t(24) = .40, p = .696, d = .079$).

Self-compassion

There was no significant main effect of group, $F(1, 43) = .02, p = .889, \eta_p^2 = .001$. However, there was a large significant main effect of time, $F(1, 43) = 9.43, p = .004, \eta_p^2 = .18$, that was made clear by a significant interaction effect between group and time, $F(1, 43) = 11.31, p = .002, \eta_p^2 = .208$ (Figure 3). Adolescents in the

intervention group reported a large significant increase in self-compassion from pre- to post-intervention ($t(19) = 3.95, p < .001, d = .883$), while there was no significant change in scores for the control group ($t(24) = .28, p = .815, d = .047$).

Practice of CMT Exercises and Embodiment of the Compassionate Self

Descriptive statistics revealed that 65% ($n = 13$) of adolescents practiced CMT exercises one to two times per week, and 30% ($n = 6$) practiced three to four times per week. Similarly, 65% ($n = 13$) described CMT exercises to be quite helpful, while an additional 25% ($n = 5$) indicated that these were very helpful. Only 10% ($n = 2$) found the exercises to be neither helpful nor unhelpful. Furthermore, 90% ($n = 18$) of adolescents recalled acting and feeling as the compassionate self during the intervention.

In relation to embodying the compassionate self on response scales ranging from 1 to 10, adolescents reported mean scores of 5.88 ($SD = 1.96$) for the frequency of experiencing the compassionate self, 6.15 ($SD = 1.87$) for the power of compassionate feelings, 5.12 ($SD = 2.39$) for the easiness of accessing the compassionate self, 6.05 ($SD = 2.24$) for the duration of compassionate feelings, 7.25 ($SD = 1.86$) for the soothing effect of compassionate feelings, and 7.75 ($SD = 1.33$) for the subsequent impact on compassionate actions.

Discussion

The study aimed to explore the feasibility and effectiveness of CMT as an intervention for test anxiety among adolescents.

The findings indicate that CMT was a feasible intervention for adolescents on the basis of high attendance and retention rates. A number of factors may have contributed to the feasibility of the CMT intervention. For example, it is possible that youth were more willing to voluntarily engage in an intervention to reduce test

anxiety when it was accessible in school and did not conflict with learning opportunities relating to examinations. Such readiness to take part in the intervention could reflect the endemic nature of test anxiety among young people and motivation to receive support. However, the sample was predominately female, which may reflect gender-based differences in readiness to access support for school-related anxieties and highlights the need to encourage males to seek help when needed. It is also likely that adolescents found the content of CMT to be valuable for understanding and dealing with difficulties. That is, a majority (90%) of those taking part in the intervention reported that CMT exercises were either quite helpful or very helpful. As such, adolescents may have continued to participate in the intervention after experiencing benefits associated with CMT.

The findings also revealed reductions in test anxiety and general anxiety, as well as increases in self-compassion from pre-to post-intervention for adolescents receiving CMT, whereas no changes were observed in the control group. These results are in line with an emerging body of research relating to the benefits of CFT/CMT in supporting young people with mental health and wellbeing difficulties (e.g., Bratt et al., 2020b). Similarly, the findings support and build on other studies that demonstrate the effectiveness of CMT for reducing test anxiety (McEwan et al., 2018), lessening general anxiety (McEwan & Gilbert, 2016), and promoting self-compassion in non-clinical adult populations (Irons & Heriot-Maitland, 2020; Maratos et al., 2019b).

Almost all (95%) of the adolescents taking part in the intervention practiced CMT exercises on a weekly basis. This is commensurate with previous work suggesting that participants may regularly engage in CMT exercises (Matos et al., 2017). Frequent practice of grounding and compassionate imagery techniques could

have contributed to a sense of slowing down and relaxation within the body. That is, these exercises intend to stimulate the parasympathetic nervous system, which calm the threat system and associated feelings of anxiety.

The vast majority (90%) of adolescents accessing CMT recalled acting and feeling as the compassionate self. Similarly, higher mean scores were reported for the power, duration, soothing effect, and impact of compassionate feelings and behaviours related to the compassionate self. That is, adolescents taking part in CMT may have felt the powerful and soothing effects of compassionate feelings across time and engaged in more compassionate actions. It is likely that developing a compassionate self-identity empowered young people to be more compassionate toward themselves. In line with the theoretical assumptions of CMT (Gilbert, 2009), cultivating higher levels of self-compassion during the course of the intervention may have activated the soothing system to regulate difficult emotional states, including test anxiety and general anxiety. The compassionate self may also have provided adolescents with a sense of safeness and contentment that improved the ability to self-soothe feelings of anxiety (Kirby & Gilbert, 2017). As such, the applications of CMT as a test anxiety intervention may have positive secondary outcomes by also reducing general anxiety due to shared links between test anxiety and other anxiety domains (Putwain & von der Embse, 2021). The findings highlight the potential value of constructing a compassionate self-identity as a central component of CMT for dealing with difficulties, failures, and challenges in everyday life.

However, lower mean scores were noted for frequency and easiness around embracing the compassionate self. That is, adolescents may have found it more difficult to access the compassionate self on a regular basis. It is likely that adolescents experienced fears, blocks, and resistances to developing compassion

(Gilbert & Mascaro, 2017). For example, some young people struggled to subscribe to the view that they are not to blame for their difficulties or felt undeserving of compassion. As such, it would have been beneficial for the intervention to have included a greater number of sessions or allocated more time to exploring and overcoming barriers to compassion to further facilitate access to the compassionate self.

The findings contribute to our understanding on the benefits of CMT with adolescent populations. However, the findings should be considered in the light of several limitations, which could be addressed in future research.

First, the study had a small sample size, which limits the generalisability of the findings. It was also unable to examine whether improved outcomes associated with CMT were a result of frequent practice of CMT exercises or embodiment of the compassionate self. Future research should replicate the findings with a larger sample and explore these potential mechanisms for change within CMT. Given that the sample was majority female, it would also be valuable for future research to ascertain whether gender-based differences are present in adolescents' responses to CMT.

Second, the study relied on self-report measures that assessed constructs that were directly targeted as part of the intervention, which in turn, may have placed demand characteristics on adolescents. Future research should incorporate other forms of assessment, such as multiple sources of reporting (e.g., teachers or parents), direct observation, and physiological measures.

Third, the study did not investigate the effect of individual CMT components, such as psychoeducation, grounding, and compassionate imagery practices. Thus, it is unclear which aspects of the intervention were most useful in promoting positive

outcomes. Future research should explore the impact of these components in isolation to highlight areas of best practice.

Fourth, the study did not include a follow-up. As such, it is unclear whether benefits of CMT lasted over time. It would be beneficial for future research to explore the stability of intervention effects across time (e.g., using multiple timepoints of data collection) to understand the long-term effectiveness of CMT with adolescents. Furthermore, future studies could consider using active control groups to compare the feasibility and efficacy of CMT with different interventions.

Implications

Although preliminary, the findings have important implications for counselling practice. The findings show promise that CMT is a feasible intervention to be delivered with adolescents, which may expand the repertoire of test anxiety interventions offered to schools. CMT may be effective in reducing test anxiety and general anxiety as well as fostering greater self-compassion among adolescents. In particular, the use of CMT as test anxiety intervention that can universally be applied across the school population may mitigate against the negative impacts of test anxiety. That is, such interventions have the potential to improve academic performance and reduce vulnerability to the onset of wellbeing difficulties, which may have long-term benefits for employment, education, and mental health in adulthood. On a broader level, the findings highlight the potential value of using CFT to support young people struggling with mental health and wellbeing difficulties, which could be integrated within pastoral support services in school. These approaches may help cultivate more compassionate learning environments to help adolescents effectively manage the demands of school life and promote thriving and growth moving forward.

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Table 1

Means and standard deviations of pre- and post-intervention scores for test anxiety, general anxiety, and self-compassion between the intervention and control groups.

	Intervention		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Pre-intervention</i>				
Test anxiety	32.40	11.70	25.28	11.32
General anxiety	33.26	10.10	27.76	12.17
Self-compassion	18.67	7.28	21.80	7.75
<i>Post-intervention</i>				
Test anxiety	23.77	9.12	26.20	11.90
General anxiety	26.20	12.03	27.36	11.03
Self-compassion	24.06	8.71	21.56	8.09

Figure 1

The interaction between group and time for test anxiety scores

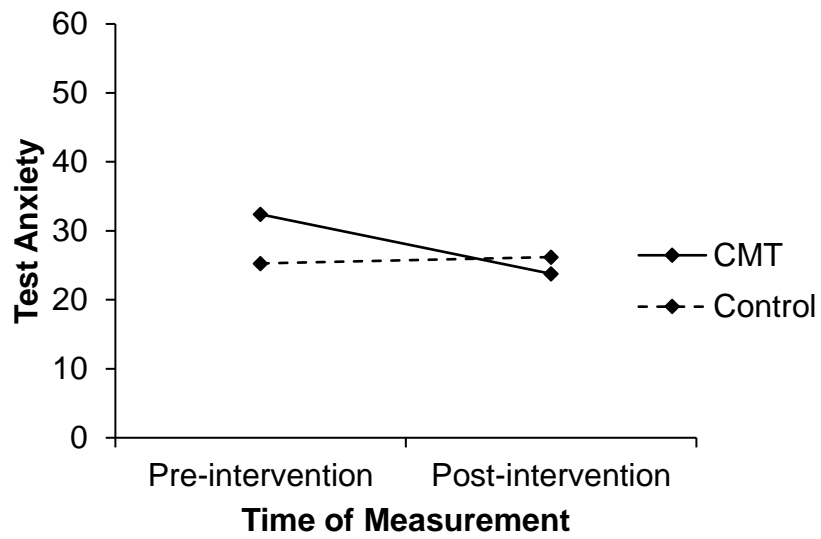


Figure 2

The interaction between group and time for general anxiety

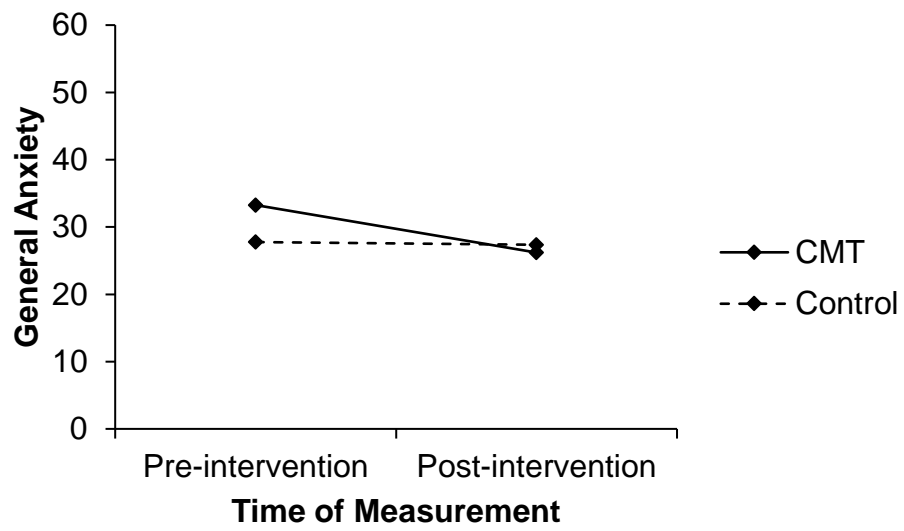


Figure 3

The interaction between group and time for self-compassion

