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Exploring the Potential Mechanisms of Action of the Mindfulness-based Social Work and Self-care Programme

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Abstract

The mindfulness-based social work and self-care (MBSWSC) programme was created in order to support social work students and practitioners to develop enhanced social work and self-care skills. This programme was found to improve feelings of stress, anxiety, mental well-being and burnout of thirty social work students. An explanatory sequential mixed methods design was chosen in order to generate a comprehensive understanding of what the potential mechanisms of action of MBSWSC might be. Data were collected using validated quantitative measures and through an open-ended qualitative questionnaire. The quantitative data were analysed using regression analyses. The qualitative data were thematically analysed. Though this study contains limitations, its results suggest that social work student stress, feelings of burnout, anxiety and wellbeing can be improved by supporting students to develop approach-oriented stress coping skills and capacities in acceptance, mindfulness, self-compassion, non-attachment, attention regulation/decentering and non-aversion. This study suggests that these skills and capacities can work individually or collectively to directly improve these outcomes and also indirectly by reducing a student's tendency to think negatively when they are stressed. The results provide some preliminary evidence on what the mechanisms of MBSWSC might be, enhancing our understanding of how mindfulness-based programmes might achieve positive outcomes.

Keywords: burnout, mechanisms, mindfulness, social work students, stress, well-being

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Introduction

Social work students consistently experience stress during their social work education (Gockel and Deng, 2016). If this stress is not managed or alleviated, it can lead to students having difficulties concentrating on their course material, practice cases and can also lead to students experiencing deficits in their mental health and well-being (Kinman *et al.*, 2020). It is particularly important that students are taught how to manage and process stress before they enter the social work profession, a profession that suffers from very high rates of burnout and attrition (Stuart, 2021). Ravalier *et al.* (2021), in a UK wide survey examining the stress levels and well-being of 3,421 social workers, found that over 60 per cent of social workers wanted to leave their current role. In a large representative sample of 751 practising US social workers, Siebert (2005) found that 39 per cent of those surveyed were currently experiencing burnout with 75 per cent reporting having experienced burnout at some point in their lives. In order to support students to be able to cope with the emotional, cognitive and physical demands of their social work education, and their subsequent social work practice, supporting students to develop a range of MBSWSC strategies and skills could be very important (Kinman *et al.*, 2020). The development of skills and strategies of this nature would likely lead to students and social workers practising sustainably over the longer term, in a manner that is more compassionate, critically reflexive, empathetic, non-judgemental and emotionally resilient (Maddock *et al.*, 2021). In order to help to meet these social work student learning needs, Maddock *et al.* (2021) developed a bespoke six-week online MBSWSC programme. Maddock *et al.* (2021) found that the MBSWSC programme significantly improved feelings of burnout, stress along with the well-being and mental health of a cohort of thirty social work students, engaging in their final social work placements across two UK universities. Improvements were also found in the participant's capacity to (1) view their thoughts and reactions to stressors as arising and passing in the moment (attention regulation/decentering skills), (2) pay attention to the present moment and how their experience unfolds, moment by moment in a non-judgemental manner (mindfulness), (3) offer feelings of kindness to themselves when something went wrong (self-compassion), (4) accept difficult thoughts, emotions and physical sensations as they arose (acceptance), (5) engage with thoughts, emotions and physical sensations that they may have previously avoided (non-aversion) and (6) focus less on positive or negative thoughts, emotions and physical sensations (non-attachment; Maddock *et al.*, 2021), all of which are key domains of mindfulness, which have been identified by Maddock *et al.* (2019a, b) as facilitating 'approach' rather than 'avoidant' forms of coping. Students who completed the

programme also experienced improvements in important social work practice skills and values, including increased empathy, non-judgement, and observation skills. Students also reported that they felt that the programme enhanced their capacities in self-care, reflexivity and anti-oppressive practice.

There is a clear need to identify what the key mechanisms of mindfulness-based programmes are; particularly the components that influence changes in stress, along with mental health and well-being outcomes (Alsubaie *et al.*, 2017). Understanding how and why mindfulness programmes such as MBSWSC can effectively improve the stress, burnout, anxiety and well-being of social work students is essential both for social work practice and theoretical reasons (Kazdin, 2007). Identifying the mechanisms of action of mindfulness-based programmes (MBPs), such as MBSWSC, would allow the most beneficial components of the programme to be intensified and ineffective aspects to be left out, leading to more efficient and effective programmes (Kazdin, 2007). The study of the mechanisms of therapeutic change in MBSWSC might help to contribute to a clearer theoretical understanding of the possible causal relationships between mindfulness variables and stress, burnout, anxiety, depression and well-being (Svendson *et al.*, 2017). Some domains of mindfulness may only influence these outcomes in an indirect manner, by influencing worry or rumination first, whilst others may influence them directly (Hayes-Skelton and Wadsworth, 2015). Further studies evaluating the change mechanisms of MBPs, such as MBSWSC, are thus required in order to help to identify how such programmes achieve therapeutic benefits for social work students (Hayes-Skelton and Wadsworth, 2015).

There are few studies which have tested integrative mindfulness models, which help to explain how changes in domains of mindfulness, after MBP participation, may impact important mental health and well-being outcomes (Alsubaie *et al.*, 2017). To the author's knowledge, no such studies have been conducted within the field of social work. The fact that MBSWSC is based on a clinically modified Buddhist psychological (CBPM) model, an integrative evidence informed theory of how mental health and well-being outcomes may improve due to MBP participation developed by Maddock *et al.* (2019a, b, 2020a, b), and the fact that all of the potential predictor and mediating variables of the CBPM were measured quantitatively and improved significantly in Maddock *et al.* (2021), allows such an analysis to take place in this study. The CBPM posits that consistent engagement in mindfulness-based practices during an MBP likely strengthens a person's capacities in: (1) mindfulness; (2) acceptance of thoughts, emotions and physical sensations; (3) attention regulation/decentring skills; (4) self-compassion; (5) non-aversion of emotions, cognitions and physical sensations and (6) non-attachment to emotions, cognitions and physical sensations (Maddock *et al.*, 2019b,

2020a, b). The increased capacities in these CBPM domains, individually, and collectively facilitate an approach coping rather than an avoidant way of coping (e.g. through past-based negative ruminative thinking or future focused worried thinking (Nolen-Hoeksema, 1998; Moos, 1984, 2002)) with a person's lived experience. The increased capacities in these areas allow participant's to be aware of, mindfully observe and attend to any emotions, cognitions and physical sensations (particularly difficult thoughts which may lead to stress and repeated negative thinking), allowing each to emerge, and then pass, and be processed in the moment (Maddock *et al.*, 2019a). This process allows stress and/or feelings of burnout to be calmed and for improved mental health and well-being to occur (Maddock *et al.*, 2019a, b).

Despite the importance of quantifying the levels of burnout, stress, anxiety and well-being that social work students experience and the effectiveness of MBSWSC, the use of quantitative methodologies alone limits the extent to which researchers can attain a complete picture of how engaging in MBSWSC might improve these outcomes. There has also been a clear lack of qualitative research which has attempted to improve our theoretical understanding of how MBPs might achieve beneficial effects, through explorations of the subjective experiences of those receiving MBPs (Grossman, 2011). This is in spite of the fact that qualitative methods have been recommended by Kazdin (2007) as one of the methodologies by which mediators or mechanisms of action could be explored, due to its capacity to provide a detailed and rich analysis of how changes in outcomes such as stress, burnout, anxiety and well-being of social work students may unfold due to their engagement with the MBSWSC programme. The exploration of social work student experiences of MBPs would also provide a clearer sense of what the positive and negative effects of such programmes are, from the social work student's perspective (Creswell and Plano Clark, 2011). The utilisation of mixed methods in this research study would therefore allow a more complete picture of how social work student engagement with an MBP may lead to improved stress, burnout, anxiety and well-being (Jobling and Naldi, 2006).

Aims of this study

This study has three aims: (1) to examine quantitatively if changes in the CBPM domain (acceptance, mindfulness, self-compassion, non-aversion, non-attachment and decentering/attention regulation) and mediating variables (worry and rumination) (Maddock *et al.*, 2019a, b, 2020a, b) from pre- to post-MBSWSC programme participation may have a role to play in predicting the burnout, stress, anxiety, depression and mental well-being of social work students; (2) explore qualitatively if the participants felt that the MBSWSC programme impacted their burnout, stress,

anxiety, depression and mental well-being levels, and if it did, what about the course or the mindfulness practices do they feel impacted their burnout, stress, anxiety, depression and mental well-being levels; (3) triangulate both sets of findings in order to help to identify what the mechanisms of action of the MBSWSC programme might be.

Methods

Design

An explanatory sequential mixed methods design was chosen in order to generate a detailed understanding of what the potential therapeutic mechanisms of action of MBSWSC might be (Creswell and Plano Clark, 2011). This design gives equal status to both the quantitative and qualitative data in order to develop a more in-depth understanding of the therapeutic processes involved in the MBSWSC programme by first analysing the quantitative data, which were collected as part of a pre-post design and then using focused qualitative data to help explain and provide a deeper meaning to the quantitative data. This design also allows the use of multiple forms of data in order to validate research findings and also to retain the voice of the MBSWSC programme participants (Creswell and Plano Clark, 2011).

Participants

This study contained a purposive and convenience sample of the twenty-seven social work students who completed the MBSWSC programme, from an initial intake of thirty students from two universities in Northern Ireland and Scotland. The sample comprised of twenty third year undergraduate and seven first year Masters in Social Work students. The sample was 89 per cent female with a mean age of thirty-one years and most identified (93 per cent) as White. More details on the implementation of the MBSWSC programme in both universities is available in Maddock *et al.* (2021).

Procedure

This study conformed to internationally accepted ethical guidelines and was ethically approved by the ethics committees of both participating universities. After ethical approval was received, students who were due to undertake their field work placement during the Covid-19 pandemic in early 2021 were invited to participate. Participants were asked to fill in a number

of quantitative questionnaires, received via an email link, before and after completing the MBSWSC programme. After the programme, the students were also asked to fill in an open-ended qualitative questionnaire.

MBSWSC programme

Over the same six-week period, the MBSWSC programme, which was developed to be delivered fully online, was delivered to both sets of social work students on Microsoft Teams. Weekly sessions, which adhered to the standardised MBSWSC protocol, lasted for 1.5 h.

The weekly structure of the MBSWSC programme is provided in [Supplementary Material S1](#). Facilitators assessed whether they had followed each week's session plan using a treatment fidelity tool based on [Kechter et al. \(2018\)](#) MBP treatment fidelity reporting recommendations. Different mindfulness-based practices and psychoeducation on the potential role that mindfulness could play in both social work self-care and practice were introduced each week. These practices included different forms of mindfulness meditation each week, which were adapted to support students to develop capacities in each of the CBPM domains of mindfulness outlined in [Maddock et al. \(2019a, b\)](#); i.e. acceptance, self-compassion, mindfulness, non-aversion, non-attachment and attention regulation/decentering), for example, through different self-compassionate and acceptance body scans. Students were then provided with practical psychoeducation on the ways in which they could use the experiential learning that they attained from these practices to ameliorate stressful personal and/or social work situations. Each week included the discussion of a social work practice role play, which were based on case studies depicting common practice challenges, including dealing with discrimination, stress and anger. This allowed the students to apply their evolving experiential learning and improved capacities in each CBPM domain to a social work case context. The development of the CBPM domains set out in [Maddock et al. \(2019a, b, 2020a, b\)](#) depends on a person engaging in regular mindfulness practice, thus participants agreed at the start of the programme to carry out daily homework assignments, which were assigned each week. These included engaging in regular meditation practice for twenty minutes per day, six out of seven days per week, and applying the evolving experiential learning attained from these practices in their day to day lives and in their social work practice.

Measures

The demographic information for each participant was collected before the programme began (T1). The CBPM domain, mediating and the

relevant outcome measures were collected at T1 and T2 (after the programme was over) using validated scales. Stress was measured using the Perceived Stress Scale. Burnout was measured using the Maslach Burnout Inventory. Anxiety and depression were measured using the Hospital Anxiety and Depression Scale. Well-being was measured using the Warwick Edinburgh Mental Wellbeing Scale. Rumination and worry were measured with the Rumination subscale of the Rumination Reflection Questionnaire and the Penn State Worry Questionnaire, respectively. The Southampton Mindfulness Scale was used to measure mindfulness, with its relevant subscales used to measure non-attachment, aversion, and non-judgement. Attention regulation was measured using the Experiences Questionnaire-Decentering. The Self-Compassion Scale-Short Form was used to measure self-compassion with acceptance measured using the acceptance subscale of the Philadelphia Mindfulness Scale. Additional information on these measures is contained in [Supplementary Material S2](#). After the programme, the students were also asked to fill in an open-ended qualitative questionnaire, which explored if they felt that changes in each outcome had occurred due to their MBSWSC participation, and if so, why.

Quantitative data analysis

The data were screened for outliers and missing values. There were no missing values on any of the outcomes under study. There was a maximum of one case missing on some subscales for individual participants on the CBPM variables. Due to this being such a small proportion of the dataset, means were input to replace the missing items. Regression analyses of the change scores from pre- to post-programme were conducted. The CBPM theory was broken into smaller regression models which tested if changes in mindfulness, attention regulation/decentering, acceptance, self-compassion, non-attachment, aversion, worry and rumination significantly predicted changes in each outcome. All assumptions of linear regression were met in order for these regressions to be tested and for inferences to be valid. Each set of tested variables had a linear relationship, all variables were normally distributed and there was no multicollinearity, autocorrelation or homoscedasticity among the data ([Montgomery et al., 2012](#)). SPSS version 24.0 (IBM, Armonk, NY, USA) was used to perform the analyses. The SPSS PROCESS macro, which was developed to assess complex models, including mediation models, was used to then test if changes in each CBPM domain (e.g. acceptance) predicted changes in each outcome (e.g. stress) when mediated by each mediating variable (worry and rumination). Within PROCESS, Preacher and Hayes' bias-corrected non-parametric bootstrapping techniques with 5,000 bootstrap samples were used to estimate the conditional indirect effects of

each predictor variable on each outcome when mediated through both worry and rumination separately (Hayes, 2017). Bootstrapping is preferred over other mediation methods because it does not assume a normal sampling distribution of the indirect effects (Preacher and Hayes, 2008). If the 95% confidence intervals (CIs) did not contain zero, the point estimates of the mediated effects were considered statistically significant (Hayes, 2017).

Qualitative analysis

A realist methodological approach was used in order to examine the semantic content of participants' qualitative descriptions of their experiences of any changes in feelings of stress, burnout, anxiety, depression or mental well-being following participation in the MBSWSC programme. The realist approach was selected as it involves identifying potential causal mechanisms and seeing if they work or not under certain conditions (Rycroft-Malone *et al.*, 2012). As the MBSWSC programme is complex and multifaceted programme, the realist approach is particularly well suited to synthesising qualitative evidence of how improvements in each outcome might have occurred (Rycroft-Malone *et al.*, 2012). The key themes from the participant's answers to the qualitative questionnaire were identified and defined using an inductive thematic and comparative analysis framework (Braun and Clarke 2006). The methodological rigour was enhanced in this study by the fact that both researchers completed the majority of the steps in this framework independently (Bryman, 2006). The researchers independently read and re-read the extracted data several times and then developed initial codes (Braun and Clarke 2006). The researchers then independently searched for themes, which were coded continuously based on the capacity for specific observations to capture something important about how the participant's feelings of stress, burnout, well-being, anxiety and mood may have been impacted by participation in the MBSWSC programme (Braun and Clarke 2006). The researchers then regularly reviewed and discussed their emergent themes before refining these based on the quality of the supporting evidence for each theme. This allowed the final consensus on what the final themes are to emerge and for apposite quotes to be selected. There were four key themes which emerged from the qualitative data, which are reported in the results section below, these were: (1) approach coping skills and capacities; (2) common mechanisms of action; (3) mechanisms working together; and (4) group-related factors.

Table 1. Linear Regression statistics, effects of predictor and mediator variables on outcomes.

Regression statistics R^2 Unstandardised regression coefficients	Stress	Anxiety	Depression	Mental Well-being	Burnout- Personal Achievement	Burnout— General Burnout	Burnout— Loss of Empathy
Mindfulness	0.285**	0.5**	0.004	0.405**	0.062	0.37	0.281**
Self-compassion	0.199*	0.062	0.000	0.019	0.000	0.129	0.48**
Attention regulation/ decentering	0.32**	0.164	0.000	0.282**	0.062	0.012	0.070
Acceptance	0.215*	0.194*	0.001	0.25**	0.000	0.000	0.006
Non-attachment	0.199*	0.23*	0.051	0.127	0.007	0.000	0.217*
Aversion	0.054	0.04	0.079	0.15*	0.083	0.035	0.15*
Non-judgement	0.169	0.293*	0.019	0.35**	0.04	0.000	0.061
Worry	0.256*	0.013	0.049	0.071	0.000	0.064	0.246**
Rumination	0.459**	-0.049	0.020	0.141	0.006	0.002	0.035

**Significant at $p < 0.01$.

*Significant at $p < 0.05$.

Results

The results of the linear regression analyses, along with their coefficients and whether each CBPM domain and mediating variable significantly predicted the outcome, and at what significance level are shown in [Table 1](#).

Mediation analysis

The conditional indirect effect of mindfulness on stress when mediated by rumination was negative and significantly different from zero ($\beta = -0.20$, $SE = 0.10$; 95% CI: -0.41 , -0.05). This indicates that the increased mindfulness experienced by the participants who completed the MBSWSC programme helped to reduce the extent to which they ruminated which subsequently influenced their levels of stress. The conditional indirect effect of acceptance on stress when mediated by rumination was negative and significantly different from zero ($\beta = -0.29$, $SE = 0.13$; 95% CI: -0.58 , -0.59). This means that the increased acceptance experienced by the social work students who completed the MBSWSC programme influenced their stress levels by influencing the extent to which they ruminated. The conditional indirect effect of attention regulation/decentering on stress when mediated by rumination was negative and significantly different from zero ($\beta = -0.39$, $SE = 0.18$; 95% CI: -0.74 , -0.19). This infers that the increased attention regulation/decentering skills attained by the students after the MBSWSC programme influenced the extent to which they ruminated which led to

lower levels of stress. The conditional indirect effect of non-attachment on stress when mediated by rumination was negative and significantly different from zero ($\beta = -0.39$, $SE = 0.19$; 95% CI: -0.79 , -0.06). This indicates that increases in non-attachment scores post-MBSWSC programme were significantly associated with decreases in stress scores when mediated by reduced rumination scores. The conditional indirect effect of mindful observation on stress when mediated by rumination was negative and significantly different from zero ($\beta = -0.59$, $SE = 0.34$; 95% CI: -1.37 , -0.05). This indicates that the increased mindful observation skills experienced by the participants who completed the MBSWSC programme helped to reduce the extent to which they ruminated which subsequently influenced their stress levels.

Thematic analysis

Approach coping skills and capacities

Students consistently reported that MBSWSC participation facilitated a change from a tendency to avoid difficult thoughts, emotions and physical sensations, for example, ignoring or suppressing each, to approaching and engaging with these phenomena in the moment. The participants outlined that the development of key domains of mindfulness, for example, self-compassion and acceptance, allowed participants to remain in the moment, facilitating the processing of difficult thoughts, emotions and physical sensations, which facilitated improvements in the student's levels of stress, anxiety, depression, mental well-being and burnout.

It has given me better coping skills...the programme has also taught me to deal with any emotions, anxieties or stresses as best I can in the moment and sitting with them rather than suppressing them and hoping that they go away. (Participant 13)

In the past when situations presented themselves, I allowed them to control me...It was like being on a treadmill, running without getting anywhere. Now, with meditation I slow myself down, gain clarity, focus and balance. (Participant 9)

This programme has definitely highlighted to me, the positive impact that mindfulness practice can have and the importance of dealing with feelings and emotions as they arise as opposed to suppressing them. (Participant 15)

Common mechanisms of action

The participants outlined that increases in a range of mindfulness skills post the MBSWSC programme positively impacted their levels of stress,

anxiety, depression, mental well-being and burnout. These were increased mindfulness, acceptance, self-compassion, attention regulation/decentering ability, non-attachment and reduced aversion and negative thinking. Though each mindfulness skill was outlined by the participants as a potential mechanism of action, some were more consistently identified, depending on the outcome the qualitative question related to. For example, thirteen participants identified increased mindfulness as being a key factor in why their stress levels improved, with only three participants outlining how increased self-compassion improved their stress levels. In contrast, fourteen participants outlined how increased self-compassion improved their mental well-being, with only three participants identifying that increased mindfulness improved their mental well-being.

Being able to stop overthinking and have more head space has improved my sense of wellbeing. (Participant 20)

I am a rusher; I rush everything in life and am always rushing to the next task and being busy. This programme has helped me to be less stressed by being more gentle with myself and accepting that some things won't get done and that's okay. (Participant 2)

I have a better understanding of self-compassion, and from the self-compassion letter, I feel I have forgiven myself for a lot of past traumas I was holding against myself. (Participant 16)

Multiple mechanisms working together

The participants' quotes also highlighted how each mechanism interplayed with others in order to improve individual outcomes, and also multiple outcomes at the same time. An example of this theme below shows how for this participant increased mindfulness, decentering skills, acceptance and non-attachment led to improved mood.

The breathing exercises and body scans have encouraged me to become more grounded. These have been particularly useful when I had been feeling slightly worried, angry or low. The programme provided me with skills to recognise my emotions for what they are, accept them and move on with my day. In filling out this evaluation, I have noticed a significant improvement in my mood over the last few weeks. (Participant 1)

The example below highlighted how this participant's increased attention regulation/decentering, acceptance and non-attachment helped them to experience reduced negative thinking (worry) and anxiety.

I find that I am more conscious of the thoughts which are driving feelings of worry and anxiety, which has ultimately allowed me to accept them and move on. In the past, I would have generally been a very

anxious person, worrying about little things, but I have noticed that I have been a lot calmer in the last month, even when presented with difficult situations. (Participant 8)

The participant below outlines how increased acceptance and non-attachment allowed reduced stress levels.

Normally if something happens in a day that I find stressful it maybe would have continued the rest of the day but now I accept it and let it go and move on. (Participant 24)

The programme's participants consistently outlined that improvements in the CBPM domains lead to other important social work practice outcomes, including experiencing more compassion and empathy for others.

The compassion meditation and acceptance meditations were and are the most useful for me...they helped me develop my sense of empathy and warmth on a deeper level. (Participant 12)

Group-related factors

Some of the participants outlined that being a part of a supportive learning environment, in which they could learn from their peers on how to manage stress, their mental health and well-being also helped to improve these outcomes after completing the programme.

Talking through past experiences and realising I am not alone helped. (Participant 7)

I really enjoyed the weekly sessions with X and X, as it consolidated with me that others have similar experiences as I do. By listening to others in the group, I was able to take away advice from them regarding how they have coped with stress and anxiety in the past, what works well and what doesn't. (Participant 9)

Discussion

This study, which is the first to examine the mechanisms of change of a bespoke mindfulness-based programme for social work, provides some initial preliminary triangulated evidence on what the mechanisms of MBSWSC on social work student stress, anxiety, depression, mental well-being and burnout might be, and how they might operate. This study provides preliminary evidence that improved mindfulness, self-compassion, attention regulation/decentering, acceptance and non-attachment predict stress scores both directly and through a mediated relationship through reduced rumination. Improved worry scores were also found to significantly predict stress scores post MBSWSC programme. Improvements in mindfulness, acceptance and non-attachment

were found to directly predict anxiety scores post-MBSWSC programme with improved mindfulness, attention regulation/decentering, acceptance and reduced aversion being found to significantly predict mental well-being scores post-MBSWSC programme. These findings were supported by the qualitative findings where participants consistently outlined how improvements in each of these CBPM domains (e.g. self-compassion) and reduced negative thinking (e.g. through less worry and/or rumination) had a positive impact on their stress and anxiety levels, their mood, any feelings of burnout along with their mental well-being.

The findings that increased mindfulness post MBSWSC predicted changes in stress, anxiety and mental well-being are in line with the literature which has examined the mechanisms of change in Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) in health and mental health populations. Bränström *et al.* (2010) in a randomized study of patients with cancer found that increased mindfulness post an MBSR programme predicted improvements in stress, anxiety and psychological well-being. In an RCT of patients with anxiety disorders, Vøllestad *et al.* (2011) found that significant increases in mindfulness post-MBSR was significantly associated with decreased anxiety. O'Doherty *et al.* (2015), in a controlled evaluation of MBCT for patients with heart disease and depression also found that increased mindfulness predicted improvements in perceived stress and anxiety. The findings that improved acceptance post MBSWSC predicts reduced stress is supported by Stefan *et al.* (2018), who found that increased acceptance post a six-week MBSR programme was a key predictor of the stress of college students at risk of social anxiety. The finding that increased acceptance predicted reduced anxiety is supported by a number of correlational and longitudinal studies. Lloyd and Hastings (2008), in a longitudinal analysis of mothers of children with intellectual disability, found that increased acceptance could be an important predictor of reduced anxiety. In a large correlational study of non-clinical undergraduate students, Coffey *et al.* (2010) found that acceptance of emotional experiences was associated with improved anxiety. Maddock *et al.* (2020a), in a study of psoriasis patients, also found that acceptance was significantly associated with anxiety. The finding that increased acceptance might be a key predictor of mental well-being is supported by Fledderus *et al.* (2010), who in an RCT of a mental health intervention, which was based on acceptance and commitment therapy and MBSR, found that increased acceptance predicted the effects of the programme on the psychological well-being of adults with mild-to-moderate psychological distress. The finding that the increased attention regulation/decentering skills experienced post the MBSWSC programme predicted changes in stress is supported by a large correlational study of university students coping responses conducted by Duncan *et al.* (2021), which found that increased capacities for decentering was significantly

associated with reduced stress. The finding that increased mental well-being in this study post MBSWSC programme was predicted by increased attention regulation/decentering skills is supported by Maddock *et al.* (2019b), who found that increases in attention regulation/decentering skills predicted change scores in the psychological well-being in psoriasis patients. The findings that increased non-attachment predicts changes in stress and anxiety MBSWSC is supported by Whitehead *et al.* (2019), who in a large sample of psychology students found that higher levels of non-attachment was significantly related to lower levels of anxiety and stress. The finding that changes in aversion post MBSWSC programme predicted changes in mental well-being is supported by Maddock *et al.* (2020a), who found that aversion was significantly associated with the psychological well-being of psoriasis patients. The finding that improved self-compassion post MBSWSC significantly predicted the stress of the programme's participants is supported by a longitudinal study of college students conducted by Stutts *et al.* (2018), who found that self-compassion was a significant predictor of perceived stress. The finding that both increased worry and rumination post the MBSWSC programme predicted changes in stress is supported by Labelle *et al.* (2010), who found that rumination mediated the effect of MBSR on the stress symptoms of people with cancer, and Labelle *et al.* (2015), who found that both worry, and rumination mediated the effect of Mindfulness-Based Cancer Recovery on stress symptoms.

In Maddock *et al.* (2021) the loss of empathy/depersonalisation subscale of the Maslach Burnout Inventory did not change significantly post the MBSWSC programme, though the other two subscales (emotional exhaustion and personal achievement) did. At baseline in Maddock *et al.* (2021), the students were in the average range on the loss of empathy/depersonalisation subscale, which means that floor effects may have limited the extent to which MBSWSC could have effected this outcome. As this study was exploratory in nature, and due to the fact that the students in this study consistently stated in the qualitative data that they felt more empathy for others after completing the MBSWSC programme, we decided to conduct the same regression analyses on this outcome. We found some initial preliminary evidence that changes in mindfulness, self-compassion, non-attachment, aversion and worry scores all predicted potential changes in empathy, in line with the CBPM outlined in Maddock *et al.* (2019a, b, 2020a, b).

The qualitative findings from this study support the quantitative findings and the CBPM model of how MBPs may achieve beneficial outcomes, outlined in Maddock *et al.* (2019a, b, 2020a, b). In line with the approach stress coping theory of Moos (1984) and theoretical rationale for MBSWSC outlined in Maddock *et al.* (2019a, b, 2020a, b), the programme's participants reported that the learning attained through psychoeducation and consistent engagement with the mindfulness practices allowed participants to develop insights into how repeated negative

thinking occurs through avoidance of difficult thoughts, emotions and physical sensations. The participants identified that these insights coupled with the increased capacities in the domains of mindfulness, decentering, non-aversion, non-attachment, acceptance and self-compassion attained through the various programme components allowed them to approach and engage with difficult thoughts and emotions and allow them to pass rather than allow passive avoidant negative thinking processes to be activated or continue. Participants consistently reported how improvements in each CBPM domain had a role to play in improving multiple outcomes at the same time, with participants highlighting the ways in which a number of CBPM domains may operate almost concurrently in order to improve their stress, anxiety or mental well-being. Participants also noted how the learning from the programme and consistent engagement with the mindfulness practices, which resulted in improvements in each CBPM domain then allowed them to feel deeper levels of empathy for service users, a key therapeutic process in social work and counselling (Tanner, 2020) and one of the necessary core conditions for therapeutic change (Rogers, 1967). Participants also identified that this process allowed them to feel more compassion for others, a key social work value (Stickle, 2016) which would help social work students to work within the [British Association of Social Workers' Code of Ethics \(2014\)](#) which expects social workers to treat service users with compassion. The qualitative data thus highlight the potentially complex direct and mediated interactions in how each of the CBPM domain variables could have a role to play in improving social work practice along with student stress, anxiety, mental well-being and empathy, in line with the CBPM outlined in [Maddock *et al.* \(2019a,b, 2020a,b\)](#).

None of the changes scores in the CBPM domain variables post the MBSWSC programme were found to be significantly associated with changes in depression or the Maslach burnout-personal achievement or burnout-general burnout subscales. As [Jenkins and Quintana-Ascencio \(2020\)](#) outline, research that uses regression analyses should have a minimum sample size of twenty-five participants, and whilst this study met this threshold, having only twenty-seven participants meant that this study was only powered to detect large significant associations in change scores between the CBPM domains and the outcomes. It could be that the non-significant findings in this study between the CBPM domains and each outcome may be due to the fact that small- to medium-sized significant associations between these change scores existed, but this study failed to detect them due to limited power. This appears to be supported by the qualitative data were participants consistently outlined relationships between increased capacities in each CBPM domain and improvements in each outcome that were not found in the regression analysis, for example, ten participants outlined how improved self-compassion helped to improve their mental well-being, but this was a non-significant finding in the regression analysis.

This study contains a number of limitations which means that the results should be considered preliminary. The inherent limitations of using pre and post programme design means that this study cannot assert claims of causality between changes scores in the CBPM domains post MBSWSC programme and changes in the student's stress, anxiety, mental well-being and burnout-loss of empathy (Hayes, 2017; Kazdin, 2007). The use of purposive and convenience sampling reduces the extent to which the study's results can be generalised to a larger population of social work students (Creswell and Plano Clark, 2011). This study contained a non-randomised sample and no control group with which to compare the change scores of the participants who completed the MBSWSC programme. As such, it is impossible to know if the statistically significant changes found in this study were attributable to the MBSWSC programme itself or as one of the themes in the qualitative data found, that they could have been due to students being a part of a supportive group environment in which they could learn from their peers. In order to ameliorate the limitations of this study, future research evaluating the MBSWSC programme with social students should use a randomised controlled trial design with at least four data collection time points and contain a larger random sample of social work students in order to make stronger assertions on causality and for the study to be powered sufficiently to detect all significant relationships present.

In conclusion, this study has provided some promising triangulated preliminary evidence on what the key mechanisms of action of MBSWSC might be. This study provides some initial evidence for the utility of the CBPM, as a potentially useful explanatory model of how changes in social work student stress, anxiety, mental well-being and burnout-loss of empathy may occur due to MBSWSC group participation. The results from Maddock *et al.* (2021) highlighted how engaging in an MBSWSC programme appears to improve each CBPM domain. This study identifies how changes in attention regulation/decentering, self-compassion, acceptance, mindfulness, non-attachment, non-aversion, worry and rumination post-MBSWSC programme each predicted changes in at least one key outcome (either stress, anxiety, mental well-being or burnout-loss of empathy). Some CBPM domains, for example, increased mindfulness, predicted changes in all four of these outcomes. These findings were triangulated with the qualitative data which found that improvements in each of these CBPM domains individually and collectively had a positive impact on these outcomes.

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Supplementary material

[Supplementary material](#) is available at *British Journal of Social Work Journal* online.

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