Well-being Support for University Students and Academics Through the MBCT-L Course

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Abstract: Background Mindfulness-based programmes (MBPs) provide an increasingly popular approach to improving mental health. Previous meta-analysis suggested that MBPs show promising effectiveness. **Objective** To evaluate if online MBCT-L (Mindfulness Behavioral Cognitive Therapy for Life) courses reduce the level of perceived stress and enhance the well-being felt by university students and academics. **Methods** A pilot questionnaire survey among 28 participants in two online MBCT-L courses aimed at determining the level of perceived stress before and after the course using a standardized PSS-10 scale (Perceived Stress Scale-10) and evaluating the course using a structured evaluation questionnaire. **Finding** The results indicate a significant shift in the majority of participants in the area of well-being and alleviation of perceived stress associated with studying or working. **Conclusions** MBCT-L supports changes in the well-being of university students and academics and reduces the level of perceived stress. Further work is required to explore how best to sustain improvements.

Key words: Well-being, Mindfulness, MBCT-L, Stress

Background

Mindfulness-based programmes (MBPs) involve systematic practice in focusing attention in a sustained and intentional way. MBPs have been shown to prevent and/or improve mental health problems in clinical and non-clinical adult samples, and MBPs for young people appear promising as a preventive intervention. MBPs seek to improve cognitive, emotional and behavioural outcomes for different groups of people. Previous meta-analysis of randomized controlled trials (RCTs) suggested that, overall, MBPs significantly improved negative behaviour, attention, executive functions, anxiety/stress and depression (Dunning et al., 2019). However, when comparing MBPs against active controls, effects were confined to anxiety/stress and depression.

Well-being is an interdisciplinary

concept that can be viewed from a philosophical, sociological, economic, and, above all, from a psychological point of view. Thanks to the broader interdisciplinary interest in this construct and several pieces of research, three components of subjective well-being have been established over the past fifty years. The first component is positive affectivity, the second, negative affectivity, and the third is life satisfaction (Andrews & Withey, 1976). The first two components refer to the emotional side of well-being. Life satisfaction then refers to the cognitive-evaluative component of well-being and is usually defined as a cognitive and global judgment that a person makes about his or her own life, which has as a reference point his or her own goals, expectations, values and interests influenced by the cultural context (e.g. Diener et al., 1985). In our research, we are also based on this subjective concept of life satisfaction and on the assumption that people are satisfied if they feel that way or if they say that they feel that way. Both the affective and cognitive components of well-being are very closely linked and are often conceptualized together.

There are many factors influencing our well-being, and most current research focuses mostly on just one of them and examines the degree of its influence on our well-being, most often from the perspective of gender, profession, age or country and culture. In our small research investigation, we focused on the stress factor and its perceived levels before and after the MBCT-L (Mindfulness-based Cognitive Therapy for Life) course (described in more detail below). Due to the small research sample, we processed the data only qualitatively and did not compare the data in any other way, not even in terms of gender, age or profession.

We understand ***stress*** in Selye's (2016) concept as a physiological and psychological response, a reaction to a stimulus or event, the so-called stressor. He defined stress as a non-specific response of the organism to any pressure or demand. According to this concept, we also work with stress in mindfulness courses and take stress as the overall response of our organism (mind and body) to any stressor we experience. A stressor can be an internal as well as an external phenomenon or event. So, even a thought or feeling can cause stress and be a stressor. In other circumstances, the same thought or feeling may be a reaction to an external stimulus and thus be stress itself.

Selye (2016) emphasized the non-specificity of the stress response and argued that the most interesting and fundamental aspect of stress is that the organism, in its efforts to adapt to any demands and pressures, reacts with a generalized physiological response, which he called the generalized adaptation syndrome. He saw it as a way for organisms to maintain good health, or life itself, despite

threats, trauma and significant changes. He saw stress as a natural part of life that cannot be avoided and that requires adaptation if the organism is to survive. Our attempts to respond to change and stress, whatever their source, can themselves lead to paralysis and disease if inappropriate or poorly regulated. The more we try to cope with stressors, the more we will be able to avoid dysregulation and prevent ourselves from causing disease or worsening our condition. And this is also the goal of mindfulness courses - to learn to adapt and cope with external and internal pressures and stressors.

We now know much more about the key roles played by the brain, nervous system, emotions, cognitive processes and various biological mechanisms that affect how we experience and cope with stress well (adaptation) or poorly (maladaptation). It turns out that we have a lot of choice in the matter. Engagement and awareness have a huge impact and protect us from the toxicity of helplessness. There is no external procedure that has a meaningful effect under extremely stressful circumstances. However, people have deep inner psychological resources that can give us a sense of commitment and influence, to a certain extent, and thus protect us from helplessness and despair, as evidenced by studies of concentration camp survivors (Kabat-Zinn, 2016).

According to Seligman (2013), whether stress occurs is not determined by the stressor itself, but by how we perceive it and how we deal with it. Sometimes even the slightest event can trigger an exaggerated emotional reaction in us, completely disproportionate to the seriousness of the problem itself. Rather, it happens in moments when we are under pressure and feel anxious and helpless. At other times, we handle not only minor inconveniences, but also significant crisis situations almost effortlessly. In such moments, we don't even realize that we are under stress. Only later does emotional and physical exhaustion set in. The amount or degree of stress we experience is determined by how we see things and how we manage them.

The transactional approach to psychological stress (Lazarus & Folkman, 1984) reminds us that we can be more resilient to stress and less susceptible to it if we build our internal resources and improve our physical and psychological health in general during periods of exhaustion. They consider regular physical exercise, meditation, sufficient sleep and the deep interconnectedness of our interpersonal relationships to be the four most important factors. In addition, relationships and family are shown to be an important factor in life satisfaction in the Czech Republic (e.g. Hamplová, 2004; Dobrovská & Vaněček, 2022). Loving and supportive family relationships, friendships, and membership in groups we care about are examples of external

resources that can help alleviate our experience of stress. Internal resources include our confidence in our own ability to handle difficulties and challenges of various kinds (self-efficacy), our view of ourselves as a person, our approach to change and beliefs about what is feasible, our religious beliefs, our level of self-efficacy relating to specific rather than general challenges, as well as our degree of stress resilience, sense of integrity and affiliative trust in people. All these qualities can be strengthened by practicing mindfulness. Therefore, in our research, we primarily focused on a comparison of the level of stress experienced before and after the MBCT-L course as one of the main measures of the effectiveness of the course, which was organized by the Hybernská Counselling Centre (HCC) at the Faculty of Arts (FA) Charles University (CU) in Prague and intended primarily for students with special needs.

Objective

The aim of this pilot questionnaire survey was to evaluate if online MBCT-L (Mindfulness Behavioral Cognitive Therapy for Life) courses reduce the level of perceived stress and enhance the well-being felt by university students and academics.

Methods

This research is designed to determine the effects of an intervention by measuring psychological variables before and after the intervention in the absence of a control group. Due to the COVID-19 pandemic, we had to implement the intervention – the MBCT-L course – online.

Study design and participants

Participants in the experiment self-enrolled in the MBCT-L programme. Participants were not approached for the purpose of the research, but all who signed up for the MBCT-L programme were offered participation in the research. It was therefore a self-selection of a sample of the population and the study therefore has the nature of a quasi-experiment. However, due to the nature of the intervention, which requires self-motivation both to start and to complete it, and the availability of probands and financial resources, the method of randomly selecting a population sample was not practically feasible in this work.

We offered the MBCT-L programme to students, academics and other university staff through the Hybernská Counselling Centre (HCC) at the Faculty of Arts (FA) Charles University (CU) via e-mail and on the website of HCC in the summer semester of 2020/2021 and in the winter semester of 2021/2022. The programme was aimed primarily at students with special needs and was implemented as part of the ESF project for universities II at CU, registration number

CZ.02.2.69/0.0/0.0/18_056/0013322, but only 5 participants met these criteria. 23 participants were without special needs. The course was offered as a mandatory elective course and students could earn 3 credits towards their studies for completing it and also a certificate on its completion if they participated in the course at least 6 times out of 8.

Participation in the course was voluntary; the participants applied themselves and were selected for the course according to Oxford Mindfulness Centre (OMC) criteria. An approximately 30-minute ***introductory online interview*** was conducted with each registered participant a week before the start of the course. The aim of this initial interview was to find out the participants' previous experiences with mindfulness, meditation or yoga courses, their expectations, medication, psychological problems, and organizational matters. The main contraindications to the MBCT-L course are current serious psychiatric illness (for example, psychotic disorders, affective disorders, cognitive disorders, substance dependence), history of suicidal intentions, recent severe psychological trauma, and also the inability to attend meetings regularly. Participants could ask anything about the course and its organization and get to know the lecturers. They were introduced to the ethical rules and aspects of the course. They were asked to fill in the informed consent and sworn statement necessary for registration within the ESF project and, anonymously, the ***Perceived Stress Scale -10 (PSS-10)*** before the start of the ***MBCT-L course***.

The OMC-recommended number of 8-16 participants in one course was observed in both of these implemented courses. 12 participants in the 2020/2021 summer semester and 16 participants in the 2021/2022 winter semester, so **28 participants** in total. 23 (82 %) respondents were women, 5 respondents (18 %) were men. The average age of the respondents was 28 years (*SD = 10.4*), median 24 years, the youngest participant was 19 years old and the oldest was 57 years old.

Nine participants were bachelor's students, 15 master's students, 2 doctoral students and 2 academic staff. 15 participants (54 %) had no problems, 8 of them (29 %) indicated psychological problems in the form of depression or anxiety, and 5 of them (18 %) indicated a higher level of stress. 13 participants (46 %) entered the course without any initial experience with mindfulness, 10 of them (36 %) had experience with meditation, 5 of them (18 %) with yoga, and 3 participants (11 %) had already completed a mindfulness course in the past and wanted to consolidate or renew their mindful practice.

Thirteen participants (46 %) signed up for the course out of curiosity and wanted to find out for themselves what mindfulness was, 6 of them (22 %) took

Table 1. Frequency of course participation (N=28)

8+1x	8x	7+1x	7x	6+1x	6x	5x	4x	3x	2x
4	8	4	3	2	1	3	1	0	2

the course for their self-development, 3 of them (11 %) because of psychological problems and stress, on the recommendation of a psychologist, 3 out of curiosity, 3 because of the community and practicing mindfulness in a group and sharing experiences, and the main motivation of one of the participants was to get credits.

The course in the winter semester of 2021/2022 also included a voluntary day of silence, which was attended by a total of 10 participants and is listed as +1 in Table 1 of the frequency of participation in the course. In the 2020/2021 summer semester, we only gave the participants instructions for the day of silence, we did not lead it, and it was up to the participants how they spent it. We do not know exactly how many participants implemented it and it is therefore not included in Table 1.

After the course, we asked the participants to again anonymously fill in the ***Perceived Stress Scale -10 (PSS-10)*** and ***online evaluation questionnaire***.

Interventions

The MBCT-L Course

The MBCT-L course is based on the MBCT (Mindfulness-Based Cognitive Therapy – MBCT) course, which is an 8-week programme created by Zindel Segal, Mark Williams and John Teasdale for people with repeated episodes of depression. The MBCT-L (Mindfulness-based Cognitive Therapy for Life) course is based on the original MBCT programme and was designed by the Mindfulness Centre at the University of Oxford to be relevant for everyone, for the general population. It is intended to be used in common, everyday settings and aims to benefit people across the spectrum of mental health and well-being (Bernard, Cullen, & Kuyken, 2020).

Mindfulness is rooted within ancient wisdom and practices, whereas cognitive behavioural methods were developed within modern psychological science. They have different perspectives, but each offers specific ways to a common end - becoming more familiar with the mind and learning to work with it more skilfully. The combination of the two approaches has great potential to alleviate suffering and enable people to flourish and live their lives more fully (Bernard, Cullen, & Kuyken, 2020, p. 5).

The MBCT-L course is thoughtfully structured and encourages the culti-

vation of understanding, skills and attitudes that can make a real difference in many areas of our lives. Learning is predominantly experiential and based on learning mindfulness in formal procedures and in everyday life. This programme offers a new way of working with the difficulties we encounter in our lives but also a different way of relating to ourselves and others - a way that includes more contentment, appreciation, wisdom and compassion (Bernard, Cullen, & Kuyken, 2020, p. 5).

Mindfulness is conceived in this course as the awareness that emerges when we pay attention in a particular way: in the present moment, with curiosity and kindness, to things as they are (Bernard, Cullen, & Kuyken, 2020, s. 7). Learning mindfulness does involve following guidance and mastering 'techniques', but the approach that we bring to our practice is just as important, or more so. The following attitudes are seen as some of the essential foundations that can help our mindfulness practice to flourish and are based on the book by Kabat-Zinna (2016, p. 71–79) and the MBCT-L manual (Williams & Penman, 2011, p. 8–9): Non-judging, Patience, Beginner's mind, Trust, Non-striving, Acceptance, Letting go, Befriending, Compassion, Appreciation, Gratitude, Generosity.

The MBCT-L programme is not therapy, but systematic training in mindfulness and self-compassion. This has certain advantages over traditional therapy – apart from its relatively short duration, it is more resistant to various types of therapist bias, such as self-confirmation bias, hindsight bias, absence of proto-diagnosis (bias), „diagnosis", any client judgment at all. Baer (2003) states that mindfulness training is significantly different from traditional cognitive-behavioral therapy. For example, it does not involve evaluating ideas as either rational or distorted, nor does it involve systematic attempts to change ideas considered irrational. Instead, participants learn to observe their thoughts, note their impermanence, and refrain from judging them.

Another important difference is that, unlike traditional cognitive behavioral practices, which usually have a clear goal, such as changing a pattern of behaviour or thinking, mindfulness meditation is practiced with a seemingly paradoxical attitude of non-striving. This means that even when a task is given (e.g. sit still, close your eyes and pay attention), no specific goal is chosen. Participants are not trying to relax, relieve pain, change their thoughts or emotions, although they may have sought treatment with this intention. They simply observe what is happening in each moment without judging it. Thus, the practice of mindfulness involves acceptance of present reality, rather than systematic attempts to change reality. An equally important distinction is that

Table 2. MBCT-L Course Syllabus

Session 1	Waking up from automatic pilot
Session 2	Another way of being: keeping the body in mind
Session 3	Gathering the scattered mind
Session 4	Recognizing Reactivity
Session 5	Allowing and Letting be
Session 6	Responding Skilfully: thoughts are not facts
Session 7	How can I best take care of myself?
Session 8	Mindfulness for Life

Source: Bernard, Cullen, & Kuyken, 2020.

effective teaching of these skills requires teachers to commit to their own regular practice of mindfulness (Segal, Williams, & Teasdale, 2002). Therapists who use more traditional cognitive-behavioural strategies are generally not expected to engage themselves in regular practice of the skills they teach (Baer, 2003).

The course programme is divided into 8 meetings lasting 120–135 minutes, and after the 6th meeting, a voluntary day of silence lasting 6 hours is included. The main topics of the individual meetings are listed in Table 2. Each meeting and individual practice plan for each week is different, generally includes mindfulness exercises in rest and movement, group work, education on the topic of stress, anxiety and its management, as well as the application of mindfulness to situations in everyday life.

Outcome measures

Perceived Stress Scale -10 (PSS-10)

Effects of the MBCT-L programme on stress were assessed using the Perceived Stress Scale (PSS-10). Only the results of participants who properly completed the MBCT-L programme, i.e. completed at least six sessions out of eight, agreed to be included in the research and properly filled in the questionnaire, were included in the research. We collected data using the PSS-10 online questionnaires, which we had the participants fill in before the start of the intervention (one to several days) and at the end of the intervention (after the last meeting of the programme, i.e. eight weeks after the start of the intervention, or within a few days of the end of the intervention). The PSS-10 scale and the evaluation questionnaire were administered by filling in an online form.

"PSS was originally developed as a 14-item scale that assessed the perception of stressful experiences by asking the respondent to rate the frequency of his/her feelings and thoughts related to events and situations that occurred over the previous month. There are also two short product forms, the PSS-4 and PSS-10, with, respectively, 4 and 10 selected items of the original PSS-14 form. Notably, high PSS scores have been correlated with higher biomarkers of stress, such as cortisol" (Malarkey et al., 1995, Van Eck, & Nicolson, 1994 in Andreou et al., 2011, p. 3288). According to a review study of psychometric evidence (Lee, 2012), the PSS-10 version has the best psychometric properties of all versions of the PSS.

The answers are given on a five-point Likert scale (0 to 4 points), so the raw score can take on a value of 0 to 40 points. The PSS scale items were designed to indicate how unpredictable respondents find their lives to be uncontrollable and burdensome (Cohen & Williamson, 1988).

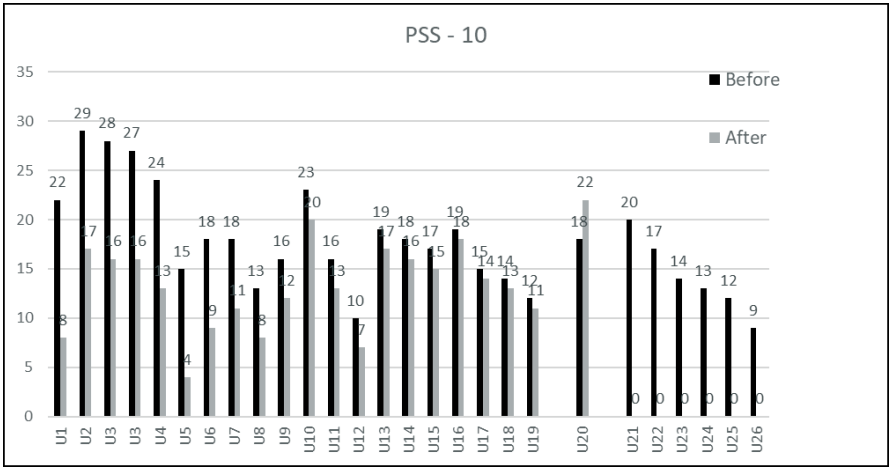
According to a review study (Lee, 2012), the PSS is a short and easy-to-use questionnaire with acceptable psychometric properties. In terms of internal consistency, the Cronbach's alpha coefficient for the PSS-10 scale reached acceptable values, i.e. greater than 70, in all twelve studies in which it was investigated (Nunnally & Bernstein, 1994). Reliability of the PSS-10 scale was also assessed using test-retest in four studies and in all cases met the criterion of a value greater than .70 (Pearson's, Spearman's correlation coefficient or ICC), with a delay between the two measurements ranging from two days to six weeks. The study also indicated that a two-factor structure was more often found for the PSS-10 scale than a one-factor structure (in a ratio of 6:2 in works using exploratory factor analysis and in a ratio of 1:0 in works using confirmatory factor analysis).

The Czech version of the PSS-10 scale was created by careful translation from the original English version by Chýle (2020), and this translation was subsequently verified by back-translation into Czech by another person.

Online evaluation questionnaire

The online evaluation questionnaire was administered by filling in an online form at the end of the intervention (after the last meeting of the programme, i.e. eight weeks after the start of the intervention, or within a few days of the end of the intervention). This questionnaire was constructed by parallel course lecturers Kristina Běrská and Eva Chroustová and consisted of 4 parts: expectations (3 questions), course evaluation (10 questions), lecturer evaluation (3 questions) and consent to the anonymous publication of their answers (yes/no answer). Most of the questions (14) were open-ended, only 3 questions were scaled with answers on a 5-point Likert scale.

Figure 1. PSS-10 – raw score before and after the intervention, sorted by degree of difference



The evaluation questionnaire was used to obtain data on the participants' final subjective evaluation of the intervention. The translation of this evaluation questionnaire is given in the Appendix.

We conducted a thematic qualitative analysis of the qualitative data to capture interesting and recurring themes and relationships. In the answers, we identified themes as recurring motifs, i.e. key expressions with the same or similar meaning. We noticed, above all, the frequency of the expressions used, the co-occurrence of words, word combinations, and possible similarities in the answers of different respondents. We reformulated and shortened the answers of the respondents in the qualitative research while maintaining their meaning.

Findings

26 (93 %) out of 28 participants filled in ***the Perceived Stress Scale (PSS-10)*** before the start of the course, and only 20 (71 %) of them filled it in after the course. 6 participants (3 from each course) of the total number of 28 participants did not complete the course, i.e. the rate of non-completion (*drop-out*) was 21 %. We also considered cases where the participant stayed on the course until its end but missed more than 3 meetings out of a total of eight as non-completion of the programme.

Before starting the MBCT-L programme, the participants achieved an average raw score on the PSS-10 scale of 18.3 points out of 40 (*SD = 5.22*); after the programme ended it was 14.0 points (*SD = 4.52*). The mean difference in the raw score between the two measures was 5.55 points (*SD = 4.95*). The raw scores before and after the intervention, sorted by degree of difference, are displayed in Figure 1.

6 participants (U21-U26) did not fill in the questionnaire after the end of the course, 1 participant (U20) scored worse at the end, but this participant also had the lowest attendance. Figure 1 shows the difference between the participants in the degree of perceived stress already at the beginning of the course, a difference of up to 20 points (max 29, min 9); after intervention it was 18 points (max 22, min 4).

The online evaluation questionnaire was completed by 20 (71%) of 28 participants. 20 of them gave permission to publish their answers from this questionnaire in an anonymized form. For all of them, the course met their expectations, i.e. to learn about mindfulness, self-development, help with psychological problems (stress, anxiety, depression), share their experiences in a group, get credits. 11 of them did not change their expectations during the course, for 5 of them mindfulness became a part of their lives, 3 were surprised by the number of different techniques, 2 gave concrete ideas about mindfulness, 1 was surprised by the strong effect of focusing on his/her body and 1 expected more sharing with the group. For 15 participants, the course was very beneficial, 5 of them rated it as beneficial. 19 of them would definitely choose this course again, 1 marked the answer yes.

15 participants reported better awareness of their body, mind and emotions after the course, 8 of them positive perception and improvement of relationships with others, 6 felt a significant shift in handling challenging situations, 4 improved attention and memory, 4 of them appreciated the skill of being present.

"*I am able to perceive my body better, thanks to which some unpleasant conditions can be managed and alleviated (for example, a reaction after vaccination, menstrual pain, headaches). I no longer have so many problems with overthinking – I accept thoughts and feelings better and let them go again. I'm better at preventing myself from having "stress from stress". Even in emotionally tense situations, I am much more stable. I can observe myself more objectively."*

During the course, sharing was important for 10 of them, for 9 of them, mindfulness techniques, for 6 of them, CBT (Cognitive Behavioural Therapy) techniques, for 5 of them, shifts in their personal lives, for 1 of them, intensive involvement and

flow; and for 1 of them, the approach of the lecturers.

"I was struck and moved by the poem If I Could Live My Life Again – the first time I heard it after the meditation, and every time I remembered it afterwards... it became one of my new beacons and a great reminder; the important moment was when I realized that I had spontaneously engaged in home practice and become dependent on it in my own way, and, to only slightly exaggerate, I now can't imagine exam periods and demanding, long afternoons without it."

Of the techniques, the 50/50 technique, CBT techniques, 10 fingers of gratitude, 3-Step Breathing Space, poems, Sitting Practice, Working with difficulty, Mountain meditation, Silent Day, Mindful walking and Mindful movements were the most appreciated.

At the meetings, 12 of them were satisfied with the sharing and reflection of techniques, 9 of them appreciated the rotation of activities and lecturers, 8 of them appreciated the pleasant atmosphere at the meetings, 5 of them were satisfied with the online format, 4 of them were satisfied with the lectures, 2 of the participants positively evaluated the introductory calming technique, 4 were satisfied with the overall time frame of the course, 2 of them appreciated the homework manual, which was sent gradually.

On the contrary, 8 participants would prefer a face-to-face meeting, 4 of them would appreciate less homework, 4 mentioned the inconvenience of occasional technical problems with the internet connection, 2 of the participants missed the opportunity to meet online with some participants during the week to do homework together and share experiences.

The participants appreciated the lecturers' sensitive, understanding, respectful, kind, helpful approach, their complementing of each other, their enthusiasm, personal interest and willingness to help.

"Willingness to share their personal experiences, at the same time enough space for our own observations and comments. Overall a very helpful and kind attitude."

"They had the lessons well prepared, so I had a good sense of a solid structure, they supported our own reactions and questions, and they mostly knew how to answer them in a constructive way, often even citing their own experience."

Interpretation of results

The results of the descriptive statistical analysis showed that completing the eight-week MBCT-L course can have an effect on reducing the participants' perceived stress. The observed reduction in the level of perceived stress by almost

one standard deviation for the standardized intervention in the given time frame is significant. According to the available literature (Chýle, 2020; Elimimian et al., 2020; Solhaug et al., 2019), it is possible that this improvement is even more pronounced over time after completion.

The reduction of the raw score of perceived stress on the PSS-10 scale found in the quantitative research is in line with previously conducted studies and meta-analyses, i.e. indicating that mindfulness programmes help to reduce stress levels (Janssen et al., 2018), recommending them, among others, as a useful method for reducing stress symptoms (Fjorback et al., 2011) or a mindfulness programme having a large positive effect on stress (Khoury et al., 2015).

It can be stated that the analysis of the online evaluation questionnaire, and the frequency of occurrence of the topic of stress, complement and confirm the findings of the quantitative research. The results similarly show that the effect of the MBCT-L programme on reducing stress is significant.

The topics of managing emotions, reactions, relationships, social ties and their awareness had a significant place in the answers. These concepts, abilities and skills are a significant part of the concept of emotional intelligence and well-being (Dunning et al., 2019; Salovey & Mayer, 1990). According to available literature, mindfulness and emotional intelligence are related (Bao et al., 2015; Hill & Updegraff, 2012).

From the frequency of occurrence of the topic of self-development, self-relation and self-acceptance, it can be concluded that a significant component of mindfulness training can be a better understanding of oneself, one's emotions, impulses, tendencies, reactions, thought patterns, behaviour, their acceptance (especially those that are perceived as unpleasant, difficult or undesirable) and the related improvement of the relationship with one's own person. This shift in relation to one's own person may also be related to the shift described by the participants in relationships in general and in the quality of communication with other people. Generally, these are signs of increased self-compassion or self-kindness.

Overall, participants report a much wider range of effects from the MBCT-L programme than just those related to stress and coping. According to the statements of the participants, it can be concluded that the programme positively influenced the quality of their lives in important ways for many of them, which apparently had, among other things, a retroactive effect on their overall resilience and stress management.

Limitations

The primary limitation of this study was the limited sample size (N=28) and the

number of those who did not complete the intervention (6), and only 20 (71 %) of them filled in questionnaires after the course.

The limitations of previous research studies, including ours, include the risk of publication bias, bias caused by self-selection, and the distortion of expectations; the selection of a population sample is also a problem (for example, a typical intervention participant is a relatively young white woman, student or healthcare worker), most studies use a waiting list or non-specific control groups, making it difficult to draw firm conclusions about the size of the comparative effect with active control groups such as psychoeducation or a support group, and most studies also lacked long-term follow-up (eg, a period of one year or longer), making it difficult to assess the stability of the longer-term effects of MBCT-L after the end of the programme. A frequent shortcoming of similar studies is that they do not report negative effects of the intervention or do not adequately describe the rate of non-completion.

Unfortunately, like most studies of the effects of MBCT-L, we did not follow the participants' independent home practice. This data from all participants (completers and non-completers) would allow for a better understanding of participants' behavior outside of group time and its impact on their outcomes. Estimates of self-reported mindfulness practice thus far rely more on participants' retrospective self-reports, so this does not shed much light on their actual adherence to the practice. The use of standard forms and new technologies (mobile phone apps, web apps) in real-time reporting of independent practice would help ensure consistency of participant experience across studies.

An important role in the research was played by the possible influence of the researchers, who were also in the role of persons providing the intervention. As the authors of the research project, the objectives were known to us in advance, and therefore it was not possible to blind the study to us as researchers. This arrangement is more advantageous from an organizational point of view, but there is a certain risk that research results or their interpretation could be unknowingly influenced.

Future Directions

In our opinion, the results show the need for a more extensive and longer-lasting, preferably longitudinal, study on a sufficiently large sample. We also think that knowing the factors that would predict the risks of not completing the intervention would help the correct indication of MBCT-L. In our opinion, little attention has been paid to these circumstances in the literature so far. Therefore, in further research, we recommend paying increased attention to the factors that cause training failure and its premature termination. Understanding the motivation of

the participants and the reasons for their premature termination of the intervention seems very important.

Future research should focus on placebo effects and non-specific effects of the intervention that differ from its true effects. It should focus on comparisons with active treatment and on the mechanisms by which the intervention works. In addition to investigating these mechanisms of action, studies should also examine the cost-effectiveness of the interventions, as thereare few side effects, and they appear to be beneficial for patients with chronic conditions. Understanding the financial implications will be useful for further practical use in terms of healthcare and helping students to finish their studies.

Further studies should investigate ways to improve the effects of MBCT-L interventions. To achieve this goal, qualitative studies can prove valuable in gaining insight into participants' perceptions and help identify ways to engage participants more and thus strengthen the effects of the intervention. However, in terms of design, a randomized controlled trial must be preferred when evaluating true effects. Longer follow-up periods are also needed to assess long-term effects.

Specific circumstances, such as the level of experience and skill of the lecturers, may also affect the effectiveness of MBCT-L, but few studies have reported data on this yet. Therefore, future studies should also investigate the influence of the skill level of MBCT-L programme lecturers.

Conclusions

The main finding of the research is that completing the eight-week MBCT-L programme is likely to have an effect on reducing perceived stress. The results of the online evaluation questionnaire confirm this finding and show that the effect of the MBCT-L programme on reducing stress is a significant part of the effects of this intervention. With respect to the current state of knowledge and research, we have outlined directions for future research into the effects of mindfulness-based programmes.

This work can be of practical benefit in researching mindfulness-based programmes in our country and their better understanding and acceptance by the professional public. The research results could serve as a source of pilot data for further research on the effects of MBCT-L in the Czech Republic.

Data availability statement

Data are available upon reasonable request. The baseline data are available from Dr. Eva Šírová (eva.sirova@cvut.cz) upon request (release of data is subject to an approved proposal and a signed data access agreement).

Ethics statements

Since this research involved real intervention participants in experimental conditions, it was necessary to apply ethical standards for psychological research. The central principle here was the principle of primum non nocere, i.e. first of all do no harm and always put the needs of the client above your own, which is the central principle of the MBCT-L approach. Participants entered the study voluntarily, were informed in advance that they were part of the research, and their participation in the intervention itself did not depend on their participation in the research. Informed consent was given in writing (by filling in the paper form sent).

Consent to the publication of anonymized data was also part of the final evaluation questionnaire that the participants filled in at the end of the course.

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Appendix

Feedback on the Mindfulness course at HCC

The aim of this questionnaire is to provide feedback on the course. Your honest observations will help the lecturers to improve their skills and contribute to the improvement of the services that the Counselling Centre Hybernská (HCC) offers to students free of charge.

What areas does the feedback cover?
- course feedback
- feedback to lecturers
- overall evaluation

Instructions for filling in:
- be as specific as possible
- don't be afraid to write it down

On behalf of HCC and the team of Mindfulness lecturers, we would like to thank you in advance for your willingness.

If you have any additional questions, please contact your lecturers.

Feedback on course I

Why did you take the course?
Did the course meet your expectations?

	1	2	3	4	5	
Definitely NOT	○	○	○	○	○	Definitely YES

Did your expectations change in any way during the course? If so, describe how.
What have you moved on?
What moments were important to you? (whether during meetings or home practice)

What particularly interested you? (e.g. a certain meeting, exercise, topic, insight, etc.)
What have you learned about yourself in the past 8 weeks?

Feedback on course II

What did you like about the meetings?
What did you like about the course overall?
On the other hand, what changes would you appreciate?

Feedback to lecturers

How would you describe the lecturers' approach?
What did you like about the guidance and approach of the lecturers?
What would you recommend to lecturers for conducting other courses?

Feedback – overall assessment

How beneficial was the course for you?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Very

If I could go back in time, would I choose the course again?

	1	2	3	4	5	
Definitely NOT	○	○	○	○	○	Definitely YES

If you can think of anything else that you would like to share with us, here is space for you:

Consent

Name (fill in if you want your answer to be anonymous to the lecturers)

. . . . . .

I give CCH and lecturers permission to possibly use my evaluation in anonymised form to promote the course and for the research of MBCT-L:

- ○ YES
- ○ NO

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