



The eight-week mindfulness meditation training to reduce stress in university students: A pilot study

Barbora Kvapilová

Palacký University in Olomouc, Faculty of Education, Dep. of Psychology and Abnormal Psychology, the Czech Republic

Email: barbora.kvapilova@upol.cz

Orcid ID= 0000-0003-2148-5046

Abstract

For the past thirty years, mindfulness meditation has been studied and researched extensively to show possible effects in stress and anxiety reduction in meditators. After mere eight weeks of regular meditation practice, various studies have shown improved attitudes in participants in dealing with life stressors and increased ability to regulate negative emotions and thoughts. The overall relationship with one's self and others improved as well. To shift one's attention to the present moment, again and again, has proved to develop the kind of awareness that helps meditators alleviate or lessen the negative impact of daily life stressors. The present pilot study offered the eight-week mindfulness meditation training to future teachers university students in a closed group. The main goal of this pilot study was to measure possible changes on perceived stress levels before and after the eight weeks of mindfulness training. The Perceived Stress Scale (PSS) was used to self-evaluate the current levels of perceived stress. The partial goals were to observe possible changes in the levels of mindfulness using the 15item Five Facets Mindfulness Questionnaire (FFMQ-15) and the levels of self-compassion using the Self-Compassion Scale (SCS-CZ). The research group consisted of 20 university students out of which 16 were women and 4 were men. The results showed significant differences in all three aspects of perceived stress, mindfulness levels and self-compassion levels. The perceived stress levels were reduced ($t = -7.24$; $p < 0.001$) after eight weeks of mindfulness training. The levels of mindfulness and self-compassion were significantly increased after the training. The promising results promote further study on bigger samples.

Keywords: Mindfulness, meditation, stress, self-compassion, Perceived Stress Scale (PSS).

Introduction

Over the past three decades, mindfulness meditation and its positive effects on stress reduction and overall improvement of well-being of regular meditators has gained much of the attention from the scientific community. Not surprisingly, since the rates of affective mental disorders, people burnout, and individuals reporting feeling overly stressed out and overwhelmed by the demands of modern life have skyrocketed (Beiter & al., 2014; Rith-Narajian, Boustani & Chorpita, 2019). Since 1979, when Jon Kabat-Zinn opened his first mindfulness-based stress reduction clinic at the University of Massachusetts medical center, people from various walks of life and with yet even more variable sources of troubles, problems, and issues, entered the eight-week program of Mindfulness-based stress reduction (MBSR) and proved time and again the improvement of overall life quality and well being by focusing attention on the present moment, changing the attitude toward unpleasantness in any form (be it physical, emotional, or in forms of negative thoughts and false narrative), by practicing kindness, self-compassion and mindful awareness without judgment (Kabat-Zinn, 2013). Especially vulnerable is a population of college students who face multiple challenges in their particular stage of life. The academic success, the ability to handle academic, work and financial issues, as well as the ability to prove oneself in the social arena by finding their place in their respective peer group, and finding themselves an intimate partner (among other factors) are all issues that can trigger stress reactions and feelings of self-doubt, anxiety or depression (Beiter & al., 2014; Ramón-Arbués & al., 2020). The academic community has agreed that educators, psychologists and experts in the related field need to build a system of safety nets for the population of college students and present them help in forms of prevention programmes, therapeutic interventions, counselling services and other forms of psychoeducation to keep their mental health in check (Rith-Narajian, Boustani & Chorpita, 2019). When it comes to mindfulness meditation as one of the possibilities of offering a tool to college students to skillfully work on their mental, emotional, physical and spiritual well-being, a great body of research can back up its positive effects on individuals overall functioning. At first, amazing work by Segal, Williams and Teasdale (2013) proved mindfulness-based cognitive therapy as an effective tool in keeping depression from relapse in clinical populations (those who have experienced clinical depression on more than one occasions). Their simple and yet very effective way of teaching participants how to change their relationship to their bodily sensations, emotions, and thoughts that contribute to depression relapse opened the door for more research (Michalak, Hölz & Teismann, 2011) and actually accepting

this mindfulness-based intervention as one of the official treatments for preventing depression relapse by the British Psychological Society and UK National Healthcare System (Rycroft- Malone & al., 2017; Cullen, 2011). In the study by Roeser et al. (2013), teachers who underwent an eight-week mindfulness-based training as part of their professional development, reported feeling less stressed-out and felt reduced symptoms of occupational burnt out. The participating teachers also reported that the training was feasible, accessible to them in terms of handling other professional and personal commitments. In relation to post-training evaluation and three month follow-up, teachers reported mindfulness and occupational self-compassion as key self-regulatory resources that kept them feeling well and in control of work-family balance (Roeser & al., 2013). A systematic review conducted by Janssen et al. (2018) indicated that employees who have undergone the MBSR program may have benefited from its effects by improved overall psychological functioning. Another study conducted by Carmody and Baer (2007) showed promising results in adults experiencing stress-related problems, anxiety, chronic pain or other forms of illness. After 8-week of mindfulness-based stress reduction (MBSR) program, the participants reported improved well-being, reduction in their negative symptoms and increased mindful awareness of the present moment experience. The change in their attitude toward one's present experience proved to be the key aspect of improved psychological functioning (Carmody & Baer, 2007). Yet another research done by Ito et al. (2022) compared regular meditators with novice meditators both undergoing an eight-week community-based MBSR program. The results showed that even the regular meditators who originally had shown greater self-compassion and mindfulness awareness at baseline, compared to novice meditators could benefit from the participation in the MBSR program by deepening their level of mindfulness, kindness, self-compassion, and greater acceptance of present moment experience as it is (Ito & al., 2022). Yet another interesting research focused on college student cohorts and their ability to reduce mind wandering and therefore increase attentional focus that is essential for learning and academic success. Morrison et al. (2014) findings indicated that after mere seven weeks of mindfulness training, the students' performance on sustained attention response task improved relative to the control group. Finally, the meta analysis of randomized controlled trials of mindfulness-based interventions (MBIs) on cognition and mental health in children and adolescents conducted by Dunning et al. (2019) support the findings of other research studies that MBIs improves youth's well-being and mental health.

The aim of the pilot study presented was to observe possible effects of the eight-week mindfulness meditation training on the students' perceived levels of stress, mindfulness, and self-compassion. We were interested in determining whether there is a significant relationship between subjectively reported reduced levels of stress after undergoing the eight-week mindfulness meditation training compared to the perceived levels of stress before the training. Furthermore, we were interested in finding whether there is a significant relationship between reported increased levels of mindfulness, or mindful awareness of the present moment experience and increased levels of self-compassion after completing the eight weeks of mindfulness meditation training compared to the perceived levels of mindfulness and self-compassion before the training. Based on the pilot study, we formulated three research hypotheses:

H1: Students who undergo the eight-week mindfulness meditation training report reduced levels of stress than prior to the training.

H2: Students who undergo the eight-week mindfulness meditation training report increased levels of mindfulness than prior to the training.

H3: Students who undergo the eight-week mindfulness meditation training report increased levels of self-compassion than prior to the training.

Method

Participants

The research group consisted of twenty university students at the undergraduate level, all training to become future teachers. Out of the twenty students included in the closed group of the pilot study, sixteen were females and four were males. All the participants were novices to mindfulness meditation. The participants were chosen to enter the

pilot study based on their own interest and voluntarily. Potential study participants filled-out personal demographic questionnaire that ruled out prior training in mindfulness meditation or any other form of regular meditative or contemplative practice. Furthermore, participants with experience of active episode of clinical depression or any other form of mental disorder (e.i.schizophrenia, psychosis) were ruled out of the study group. Participants were informed that they could leave the training and the study, at any time. After being accepted into the study, the participants were given three types of questionnaires to fill out before and after the intervention of the eight-week mindfulness meditation training.

Descriptive statistics

At first, the raw data were transferred from questionnaires into the xls format compatible with the MS Excel programme 2013. The second phase comprised of formal and logical control of data collected. Further statistical analysis was done with the help of the statistical software STATISTICA, version 13.

Data collection

Three different types of questionnaires were distributed to the participants prior to eight weeks of mindfulness training and immediately after the intervention. The Czech version of the Perceived stress scale (PSS) first developed by Cohen in 1983 represents a widely used instrument for measuring perceived levels of stress (Buršíková Brabcová and Kohout, 2018). The Czech version of this instrument showed a high level of internal consistency with Cronbach alpha of 0.871. The psychometric validation of the Czech version of PSS proved valid and reliable instrument for measuring perceived stress (Buršíková Brabcová & Kohout, 2018). The Czech version of the 15-item Five Facets Mindfulness Questionnaire (FFMQ-15) was used to self-evaluate perceived levels of mindfulness. The psychometric study by Kořínek, Benda & Žitník (2019) showed acceptable levels of internal consistency with Cronbach alpha of 0.77. The last questionnaire used was the Czech version of the Self-compassion Scale (SCS- CZ). Based on the study by Benda and Reichová (2016) psychometric properties of the Czech version of the SCS showed a high level of internal consistency with Cronbach alpha 0.89. The SCS- CZ proved valid and reliable instrument for measuring self-compassion levels.

Study design

The closed group met once a week over the period of eight weeks for ninety-minute long session. During the session, the mindfulness teacher presented a theoretical background on the topic of focus for that particular week (mindfulness of breath, body, movement, emotions, thoughts). The teacher also led the group through a variety of guided mindfulness meditations and opened discussions for rounds of sharing. At the end of the class, students received an audio meditation for the week home daily practice along with other assignments and informal meditations (mindfully brushing teeth, mindfully eating a snack). Students were instructed to formally meditate every day or at least six times a week. In case of difficulties or questions, students were encouraged to contact the teacher either during the class or individually via email or personal meeting.

Results

The normal distributions were found in all the scales' overall scores after conducting the Shapiro-Wilk Test for the parameters' normality. Thus, parametric tests were utilized in significant difference tests below. The effectiveness of the 8-week mindfulness training intervention was analyzed using the Paired Sample t-Test to look for possible differences between pre- and post-test of overall scores on each individual scale.

Table 1. Paired Sample t-Test for the differences between pre-and post-test of overall scores of the scales.

	Pre-test (M±SD)	Post-test (M±SD)	t	cohen's d
the Mindfulness Scale	39.50±5.77	50.3±5.28	-7.84***	1.95
the Perceived Stress Scale	25.55±4.74	15.25±3.68	8.24***	2.43
the Self-compassion Scale	49.90±9.00	70.60±8.51	-8.86***	2.36

***. is the significant difference at the level of 0.001.

After conducting the Paired Sample t-Test, extremely significant differences were found as shown in Table 1. Specifically, the perceived levels of stress of the participants were reduced ($t=8.24$, $p < 0.001$). On the basis of this finding, we accept hypothesis H1 (students who undergo the eight-week mindfulness meditation training report reduced levels of stress than prior to the training). After being trained for eight weeks in mindfulness meditation, the level of mindfulness of the participants increased ($t=-7.84$, $p < 0.001$); therefore we can accept hypothesis H2 (students who undergo the eight-week mindfulness meditation training report increased levels of mindfulness than prior to the training). The higher levels of self-compassion were found after 8-week training ($t=-8.86$, $p < 0.001$). Therefore, we can accept hypothesis H3 (students who undergo the eight-week mindfulness meditation training report increased levels of self-compassion than prior to the training). Furthermore, a high-quality intervention was shown by the large effect sizes (see Table 1).

Conclusions and recommendations

Mindfulness meditation represents a valid and respected tool to reduce stress and promote psychological functioning and overall well-being in meditators who engage in mindfulness training and regular meditative practice over a period of time as short as seven to eight weeks in a row (Kabat-Zinn, 2013; Williams & Penman, 2011). The basic idea of changing one's attitude toward negative thoughts, feelings and possible negative body image (Segal, Williams & Teasdale, 2013) by paying attention to the present moment, in a specific way, with kindness and non-judgementally, is the key component to reinforce more positive view on oneself and promote overall well-being and even improved social relationships (Williams & Penman, 2011). Since stress and stressful lifestyle has become the hallmark of contemporary modern life, the need for preventive measures or treatments to help individuals in need is ever more increasing. Especially vulnerable is the group of adolescents and young adults, namely college students (Wilde et al., 2019). It is our responsibility to protect the mental health of the young and mindfulness meditation or any other form of mindfulness training that can be implemented into the school settings can be the answer (Wilde et al., 2019). That is why the purpose of our pilot study was to see the possible effects of eight-week mindfulness training on future teachers college students on their perceived levels of stress, mindfulness, and self-compassion. The intervention of undergoing the mindfulness training proved efficacious in reducing the symptoms of stress and increasing the levels of mindful awareness and self-compassion. The findings were supported by the larger effect sizes. Our findings encourage us to further the research on mindfulness meditation by comparing the experimental group with the control group and therefore organizing standard randomized controlled trials to obtain data by comparing the pre- and post tests between the experimental and control groups.

Nevertheless, this study has several limitations. First of all, the subjects could not be randomly chosen from the population of future teachers college students at our faculty since open attitude and genuine interest is needed for the subjects to undergo the mindfulness training. The main issue with collecting data from self-reporting measures such as questionnaires used in our study is the number of factors that cannot be controlled for. For instance, the present mood disposition a subject finds himself or herself in, the level of understanding of the questions or statements, overthinking the questions and answers, etc. Secondly, the mindfulness meditation teacher was not able to control for the regularity of the home practice of participants during the eight-week mindfulness training since home practice is essential in promoting the efficacy of the training, it was solely up to the participants how much effort they put into it. Lastly, the degree of motivation and self-expectation bias may have had an effect on subjects and their self-reports on perceived stress levels, mindfulness, and self-compassion especially after the training.

In conclusion, mindfulness-based interventions have become widely spread in all sorts of settings, be it in the fields of healthcare, education, business, military, or general populations, as well as the clinical ones. As Gjelsvik et al. (2018) wrote in the article presented on the website of the British Psychological Society, the clinical science of mindfulness effects and potential benefits is still in the early stages of research and requires of us, the researchers, to take a more modest, even sceptical and realistic approach to scientific findings from various research on mindfulness because we are still looking to explain (from the empirical point of view) the exact mechanisms that underlie the effects of mindfulness-based interventions on subjects psychological functioning and well-being.

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