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Mindfulness sessions delivered via smartphone applications and their potential benefits

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Abstract

Mindfulness, as a practice of focusing one's attention on the present moment without evaluating, is used in mindfulness based interventions (MBI) therapy [1,2]. Traditionally, these sessions are conducted in person. At this moment, we are witnessing a global trend in which patients are turning to technology and are looking for alternative, more convenient solutions. There are studies assessing the effectiveness of mindfulness training conducted in a new unconventional way, which is using an application installed on patient's smartphone. This paper discusses possible benefits of online conducted mindfulness sessions.

Keywords: mindfulness; telemedicine; mental health

Introduction

The principals of mindfulness practice are to immunize participant against stressful events and provide an overall coping strategy for a range of symptoms such as stress and pain. Practicing mindfulness increases the ability to observe one's thoughts, feelings, and bodily sensations without judging them or trying to change them [3,4]. The participant learns to let go instead of identifying oneself with negative emotions and sensations.

Mindfulness is used in MBI (mindfulness based interventions) and MBSR (Mindfulness-Based Stress Reduction) of the stress reduction program based on mindfulness, mindfulness-based cognitive therapy (MBCT).

The founder of MBSR, Jon Kabat-Zinn, described mindfulness as a special type of attention directed to the present moment, that is conscious and non-judgmental [5,6]. The courses typically last 8 weeks.

They were first used in the late 1970s in Massachusetts, United States. Now all over the world people from various backgrounds, with different experiences, and of different age practice mindfulness meditation. Most of the participants, who complete the entire course, see long-term effects. Patients have improved self-esteem, experience fewer physical symptoms, have more energy and enthusiasm, and cope better with chronic pain and stressful situations. Many scientific studies confirm the effectiveness of MBSR as a method used in working with people of various medical and mental conditions [7-9].

As an example, it is worth to mention Carlson's study on the effectiveness of MCBR (mindfulness based cancer recovery) and SET (supportive-expressive therapy) in patients with breast cancer. Breast cancer is characterized by the highest incidence among all malignant neoplasms in women in highly developed countries [10]. MCBR therapy was found to be better than SET at improving stress levels, quality of life, and social support [11]. In the Danish study by Andersen, the study group also consisted of patients with breast cancer, and the aim of the study was to determine the effect of MBSR therapy on the patients' sleep quality. Mindfulness had a significant impact on improving the quality of sleep in the short term, in the subsequent follow-up (after six and twelve months), no differences were found between the study and control groups [12].

There are a number of smartphone applications that promote mindfulness. They are easily available, after entering the password "mindfulness" in the AppStore, we get a number of such applications. After creating an account, we have access to usually paid meditation programs.

Their popularity can be proved by the fact that Calm became the application of the year 2017 in the AppStore [13].

The principle of their operation will be discussed on the example of the Calm application. The app emits soothing sounds for your ear while displaying images of beautiful nature. The user chooses his own scenery, e.g. calm sea or falling rain. The application includes a 7-day free program introducing you to the basics of meditation. After this period, further subscription is payable. The free period includes 7 sessions lasting from 2 to 30 minutes with a teacher who explains to you how to relax. In addition, in the application, we have the opportunity to take advantage of temporary and thematic meditation sessions, prepared, among others, to improve concentration or creativity. The application saves each session in a calendar and shows how many days the user managed to meditate every day without a day off, which can further motivate to regular sessions.

Aim of the study

The aim of this study is to evaluate the possible benefits of participating in mindfulness sessions conducted via application and efficacy of these online sessions compared to conventional face-to-face mindfulness sessions.

Material and method

The PubMed and Google Scholar databases were used to review the literature. Articles in English were searched using the following keywords: mindfulness, mbi, online, application.

Results

Research conducted by Halane Wahbeh was a questionnaire study that involved 500 adults. They were asked how they would choose to participate if they were to enroll in mindfulness therapy. There were three options to choose from, mindfulness session via the Internet, individual in the office and group therapy in the office. For 42% of respondents, the first choice was online form, while group therapy was 20% for comparison. In turn, 11% of respondents refused group therapy [14].

In a Spijkerman meta-analysis, the effects of online mindfulness on depression, anxiety, stress and well-being were examined. The impact of online mindfulness training sessions on depression and stress was estimated to be strong. Fifteen randomized, online controlled clinical trials of MBI were included. Online MBIs had a greater stress reduction effect than non-guided MBIs. The results indicate that online MBIs can help improve mental health outcomes and stress in particular [15].

The aim of the Bostock study was to assess the effectiveness of daily, several-minute-long mindfulness meditations using a smartphone application for 8 weeks in improving mental well-being and reducing stress caused by work during the working day. The study group consisted

of healthy employees (n = 238). Workers with depression, hypertension, heart disease and cancer were excluded. The intervention consisted of 45 mindfulness sessions lasting 10-20 minutes. The test group had blood pressure measured twice a day throughout the intervention period. Participants' well-being was assessed using the Warwick Edinburgh Mental Well-being Scale before, immediately after, and 8 weeks after the intervention. The obtained results showed effectiveness in improving well-being and reducing the level of perceived stress. Almost half of the respondents (49%) said they continued their mindfulness sessions on their own after completing the study [16].

A similar randomized trial was conducted (Huberty, Green) on a group of students (n = 88) with an increased level of perceived stress (≥ 14 on the Perceived Stress Scale). The aim of the study was to test the initial effectiveness of regular mindfulness sessions and their lasting effects, tested after 12 weeks. The Calm application was used for the study. The test group experienced a significantly lower level of stress assessed on the PSS scale compared to the test group, measured both after 8 weeks of mindfulness session and after 12 weeks of follow-up. Before the intervention in the study group on the PSS scale, the average score was 23 points, immediately after it and in the follow-up it dropped to 16 points. On the FFMQ (Five Factor Mindfulness Questionnaire Score) scale, the average score of the study group before the intervention was 110 points. After the intervention and in the follow-up, it was around 130 points. 51% of the students stated that the application helped them reduce their stress - such results were obtained immediately after the intervention. 12 weeks after the intervention, this trend continued and amounted to 49% [17].

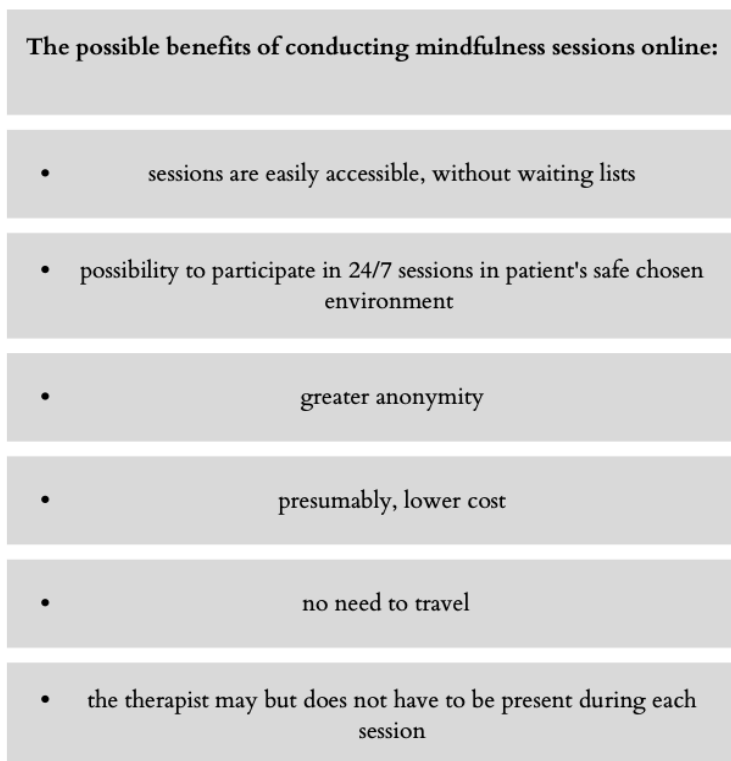


Fig. 1

The possible benefits of conducting mindfulness sessions online chart (own elaboration).

Discussion

The effectiveness of mindfulness is comparable, both in the form of traditional sessions and those conducted through the application. However, extensive research is still lacking. There are many meta-analyses examining the effects of MBI on improving mental state, but few publications examining the typically online MBI. Mindfulness sessions in the form of a smartphone application are easily accessible, which speaks about their attractiveness. Before using this type of application, it is worth considering whether the patients are misusing their own smartphone and how much time they spend using it every day. The habit of staying online is not conducive to mindfulness, and patients won't be seeing the effects of their meditation. On the other hand, enhancing the habit of meditation as a mechanism for, for example, coping with stress through a smartphone seems to be better than not shaping such a habit at all. It may also occur that the patients will have their first contact with mindfulness through the smartphone application, and only later will be sent to the office for professional therapy. Applications thus make contribution to promoting care of one's mental health. It is advisable to get to know mindfulness by the teacher at the very beginning, so that the direct experience of mindfulness comes through contact with the group, workshops and own thoughts.

Conclusions

Due to the growing interest of patients, there is a need for further research on the effectiveness of mindfulness applications compared to mindfulness sessions in a traditional, contact form. The topic is interesting, the popularity of the applications is high and the amount of research is still insufficient.

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