Mindfulness is effective in chronic pain

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A new meta-analysis has shown the method efficacy in reducing pain intensity, depression symptoms, and improving quality of life.

Background

Mindfulness is a set of psychological techniques that are aimed for training of attention control and its shifting into experience that a person gets here and now. Adherents of this method argue that it originates from traditional Buddhist practices «anapanasati» (special breathing practices), «satipaṭṭhāna» (calm self-awareness), «vipassana» (rising above reality).

However, in Western countries its widespread use began from early 80s after developing a program of mindfulness-stress reduction at Medical Center of Massachusetts University by Jon Kabat-Zinn. Unlike other meditation practices mindfulness efficiency has been extensively studied in randomized controlled trials over the past 20 years.

Currently, the most used practices include mindfulness-based stress reduction and mindfulness-based cognitive therapy.

A typical program of mindfulness meditation

In accordance with guidelines for mindfulness-based cognitive therapy the work with patient consists of 8 sessions, which held once a week. Each session includes 3 parts - practical techniques, special exercises and practical homework assignments.

Here is an example of tasks on the first and third week according to the guideline by Rebecca Crane for group sessions with mindfulness-based cognitive therapy 1. The first session is to create a supportive environment for the work that awaits in the future sessions. The therapist teaches the client to recognize the things that he was doing "on autopilot" (unconsciously) and that influence an everyday life. For example, actively directing attention to an object, which otherwise the client is not paying active attention. Typical initial practice - consciously eating a raisin. Then, according to the same principles, therapist teaches the client "scan" own body, separately for its different parts.

The third week is dedicated to learning mindfulness movements and breathing techniques. At this stage the body becomes a place for gaining experience. The patient during deep breathing scans body parts and observes associated feeling and body sensations. The same held regarding the body in motion. Mindfulness movement exercises are aimed for teaching to shift current attention to bodily sensations that arise in the process movements.

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Week 3: Mindfulness of the breath and body in movement
Practice in session

Mindfulness movements. Stretching + breathing. Stretching is performed while standing and with awareness, followed by meditation with focus on breath and sensations in the body. This may be accompanied by a short practice of mindfulness “seeing” and “hearing”.

Exercises in session

Analysis of pre-filled diary of pleasant and unpleasant feelings / experiences

Homework

Stretching and breathing exercises 3 times a week. Mindful movements 3 times a week. Diary of pleasant and unpleasant experiences / feelings.

Table. The plan of the first and third weeks of mindfulness group sessions 1.

The effectiveness in chronic pain

In the new study scientists from the «RAND Corporation» have conducted a meta-analysis of trial on the effectiveness of mindfulness in chronic pain 2. After careful selection the authors included 38 randomized controlled trials in further analysis.

Overall, in included trials mindfulness-based stress reduction or mindfulness-based cognitive therapy were used. As a control served treatment as usual, psychoeducation or waiting list. Pain genesis was different, but the vast majority of patients had low back pain, cancer pain, fibromyalgia, post-herpetic neuralgia, headache or diabetic peripheral neuropathy.

The observational period lasted on average from 4 to 60 weeks. Because in included studies different scales for pain assessment were used, the authors have calculated standardized mean difference (SMD) for comparing studies’ results.

As stated in the current guidelines SMD estimated at between 0.20 and 0.49 is considered as having a small effect size (small treatment effect), 0.50-0.79 - medium effect size and ≥0.80 - large effect size.

According to analysis regarding pain scales, mindfulness effect was statistically significant, but the SMD was only 0.32 (small effect size). Also was noticed high heterogeneity between studies, for example, in some trials reduction in pain intensity was not noted at all, but in others it amounted to near 46%.

How significant these changes are? If a standard 10-point visual analog pain scale is taken, where 0 - the patient feels no pain and 10 points - the most significant pain that can only be felt, and initial pain intensity is 6 points with the standard deviation - 1.5, then in mindfulness group can be expected pain relief by 0.6 points lower than in control group (standard treatment, a placebo or waiting list).

Depression symptoms had also changed significantly more in mindfulness group compared with control, but SMD was only 0.15 (very small effect size). This applies to the quality of life, but in this case SMD was estimated at 0.49.

According to the authors, mindfulness effect on pain was statistically significant, but still small. One important limitation was in poor quality of included trials. For example, in most of them randomization procedure was not described properly and «intention-to-treat» analysis was not performed.

There should be noted that according to the NICE guidelines, for example, for the treatment of low back pain, meditation techniques are recommended as a part of special complex programs along with biomechanic and aerobic exercises 3.
References