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Efficacy of Healing meditation in reducing anxiety of individuals at the phase of weight loss maintenance: A randomized blinded clinical trial

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ABSTRACT

Objective: To verify the efficacy of Healing Meditation in reducing anxiety levels in individuals on a weight loss maintenance program.
Design: A randomized, controlled, evaluator-blinded clinical trial, conducted between January and October 2014, with a follow-up of 12 weeks.
Setting: A weight loss secondary care facility in Salvador, Brazil., of 41 patients at the weight maintenance phase (Mean initial BMI $33.6 \pm 4.7\ kg/m^2$, who had attained a mean BMI of $24.5 \pm 1.6\ kg/m^2$ in a median period of 7 months).
Intervention: An 8-week Healing Meditation program (n = 20), consisting of a 1 h weekly meeting, or for a control group on the waiting list (n = 21), in addition to the standard clinical program.
Main outcome measures: Total anxiety was measured by the Hamilton Anxiety Scale (HAM-A), before and after the intervention. Secondary analyses included comparison of the effect of meditation on the somatic and psychic components of the scale.
Results: Through an intention to treat analysis, we detected a difference in the mean variation between the intervention and control groups in the total anxiety scores of 7.7 (95% CI 6.3–9.2; Cohen's d = 3.41). Means and standard deviations for pre and post intervention anxiety scores were 15.5 (3.4) and 7.8 (2.0) for the intervention group and 14.8 (3.4) and 14.9 (3.4) for the control.
Conclusion: Healing meditation significantly reduced the anxiety of obese individuals, in the phase of weight maintenance, suggesting this to be an effective auxiliary resource for weight loss maintenance.

1. Introduction

Obesity is a chronic disease characterized by excessive fat accumulation in the body, associated with health risks due to its relationship with various metabolic complications. According to the World Health Organization, approximately 3.4 million adults die every year as a result of overweight or obesity.[1] In the United States the prevalence of overweight and obesity is estimated to be 68%, with an increasing trend between 1999 and 2008.[2]

Evidence suggests that a loss of 5–10% of the initial body weight in obese persons is associated with significant physical and psychosocial benefits, provided the weight loss is maintained.[3] However, there is high recurrence associated with weight loss; around half of the weight lost is recovered within one year of treatment, with continuing regain of weight, so that from 3 to 5 years after treatment, many patients return or even exceed their pre-treatment weight.[3]

Among the factors compromised by psychological aspects in obesity, anxiety is mentioned as an emotion that makes it difficult to manage healthy dietary and weight behaviors.[4,5] High anxiety can lead to obesity through the repeated activation of the hypothalamic-pituitary-adrenal axis[6] and modifications on eating behavior, triggering the intake of sweet and fatty foods.[7] According to Scott et al.,[8] anxiety is one of the negative emotions postulated as being a trigger of emotional food intake. They also emphasize that there is experimental support for affirming that anxiety increases food consumption among obese persons in comparison to non-obese individuals.

The difficulty to maintain weight loss, with high percentages of therapeutic failures and relapses have shown that it is necessary to investigate new resources for treating obesity, facilitating

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weight loss, preventing its regain and generating a more satisfactory level of well-being in individuals. The growing scientific interest in meditation demonstrates it is an active mental training, capable of modifying the working of the mind, favoring the skills of focusing attention, cognitive capacity, and emotional adjustment. In addition, the practice of meditation may have a long term effect, producing lasting changes by acting on cerebral plasticity.[9–11] The scientific evidences obtained with respect to the benefits arising from meditation to recover health encourage a change to interactive forms of treatment and suggest that therapeutic interventions that incorporate meditation must be more frequently used.[12] A systematic review showed meditation to be beneficial for controlling anxiety,[13] which in turn may bring about positive consequences in taking care of obesity.

Studies with meditation in overweight and obese individuals compose a relatively new area of research. There are few researches evaluating the effects of different types of meditation on weight loss and the factors associated with difficulty in maintaining the ideal weight, when it is acquired. Studies found beneficial effects on body weight loss[14–16] or in reducing anxiety, food compulsion and emotional eating – important factors for long term weight loss maintenance.[4,17–19] Nevertheless, the results have not been conclusive and the majority of studies present important methodological limitations.

Thus, we have performed a randomized, controlled, evaluator-blinded clinical trial to verify the efficacy of Healing Meditation in reducing anxiety levels in individuals under multi professional treatment for weight loss maintenance.

2. Material and methods

2.1. Design and randomization

This was a randomized, controlled, single-center, blinded-evaluator clinical trial, to compare an 8-week Healing Meditation program, associated with multi professional treatment for weight maintenance in obese individuals who had lost weight, with a control group who were following only the multi professional treatment offered by the study center. We've performed simple randomization, with a 1:1 ratio as follows: the patients were offered meditation at similar times in different weekdays. One timeslot had already been predefined by the authors as the intervention group. Those interested were instructed to enroll in one of the two options, unaware of which was the intervention and which was the control group. Moreover, the control group had no knowledge there was an intervention group. None of the authors interfered with the list in any way until randomization was complete. Changes in anxiety levels were measured before and after the intervention by a psychologist who remained blind to patient allocation. The Institutional Review Board of the Bahiana School of Medicine and Public Health, Brazil, approved all the procedures (March 13, 2013, decision number 219.676). The participants provided their written informed consent. The trial was registered in the Brazilian Clinical Trials Registry (REBEC, Identifier:RBR-8D3SP7).

2.2. Location and participants

The study was conducted in Brazil from January 01 to October 31, 2014, at the Maximo Ravenna Therapeutic Center (CTMR), in Salvador-Brazil, an institution for the treatment of chronic or recurrent obesity and eating disorders. During this period, all the adult individuals enrolled at the institution who had entered the weight loss maintenance phase were invited to participate in the research, by posters and disclosures made in the therapeutic support groups. The inclusion criteria were: age $\geq$18 years, being part of the weight loss program of CTMR in the city of Salvador, in the post weight loss maintenance phase. The exclusion criteria were: diagnosis of psychosis or borderline; not accepting to participate in the study; or not signing the Term of Free and Informed Consent.

2.3. Procedures

After a period of three months reserved for enrollment of volunteers, one of the authors (CS) contacted them by telephone and made appointments for presential interviews to explain about the research and sociodemographic data collection. After this, a psychologist experienced in the application of the Hamilton Anxiety Scale (HAM-A) performed the pre-test. During the study all the participants remained in the standard CTMR program that included diet, weekly participation in therapeutic support groups, regular physical activity, and a monthly meeting with a doctor and a nutritionist. In addition, once a week for eight weeks, the intervention group participated in Healing Meditation conducted by one of the researchers (CS), who has a 25 years' experience in meditative practice. During this period, the individuals in the control group were informed that they were on a waiting list to compose a meditation group in 10 weeks. At the end of the intervention, we scheduled individual interviews with the participants, to receive the home record charts of those in the intervention group, and to inform those in the control group of the date when the meditation group would begin. Only after this contact were the individuals referred to the post-test with the psychologist who evaluated the HAM-A; this was the strategy to maintain evaluator blinding.

The volunteers were 48 patients, of whom six were excluded because they had returned to the weight loss phase by the CTMR criteria and one was excluded by absence due to traveling. Twenty patients were randomly allocated to the intervention group and 21 to the control group, being a total of 41 individuals (Fig. 1).

2.4. Intervention

The 8 weekly meetings had a duration of one hour, and consisted of: recording the participants' presence; verifying their adherence to meditation practice at home; explaining any doubts; and conducting Healing Meditation. The participants were oriented to practice meditation daily at home. All received a chart to record the days when they practiced meditation at home, and had to return it at the end of the study.

2.5. Healing and Human Development

The meditation type we've chosen for the intervention followed the principles of Healing and Human Development, an approach aimed at broadening the awareness and potentiality of the individuals and to the possibility of reaching renewal through contact with the spiritual dimension of being, without a religious sense.[20] It is based on the idea that the human being is a multidimensional energetic field where the physical body is the densest part and reflects the whole individual. The concept of health is attached to the integration, balance and expression of the different human dimensions that involve their physiological, emotional, cognitive, behavioral and spiritual aspects.[21] This methodology was developed by Robert Samuel Moore based upon his researches at the Psykisk Center, Denmark aided by various professionals, from 1976 to 2006.[20] It aims to promote self-regulation in the organism, the expression of each one's creative potential, along with spiritual growth.[20] It involves a series of meditation practices, of balancing polarities, of centering and reflexion, which when associated with breathing and relaxation, make the person's energy circulate through their chakras, energy points and areas in their physical bodies and subtle dimensions, in order to harmonize the energy flow