



RESEARCH ARTICLE



Effect of Combined Manual Acupuncture and Massage on Body Weight and Body Mass Index Reduction in Obese and Overweight Women: A Randomized, Short-term Clinical Trial

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Abstract

Obesity is one of the leading health risk factors worldwide and is associated with several other risk factors and health problems. Acupuncture is utilized to treat a variety of health problems, one of which is obesity. Fifty-six obese women with body mass index (BMI) ≥ 25 kg/m² were recruited for this trial and were randomly divided into two groups, one with combined manual acupuncture and massage therapy (MAMT), and the other with only manual acupuncture therapy (MAT). In addition, 40 overweight women with BMI 23–25 kg/m² were randomly divided into two groups, one with MAMT and the other with MAT. Therapy was carried out once per day for 21 days, and the body weights and the BMIs were recorded every day. The results showed that both MAMT and MAT could reduce body weight and BMI significantly, compared with the pretreatment values, for all the participants ($p < 0.001$); however, the differences in body weight and BMI reductions between pre- and posttreatment for the MAMT and the MAT groups were not statistically significant. The optimal periods for reductions in both body weight and in BMI were the first 4 days. Accounting for the economic strategy (time and money) in alternative therapy, MAT alone may present a reasonable option in the treatment of overweight and obesity in adults.

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1. Introduction

The prevalence of obesity is rapidly increasing worldwide, even in developing countries. Obesity and overweight are associated with many serious conditions, including type 2 diabetes, hypertension, and coronary heart disease [1]. Current conventional therapeutic strategies for treating obesity (i.e., diet, physical exercise, drugs, and bariatric surgery) cannot achieve adequate weight control in all patients. As one of the oldest healing practices in the world [2], acupuncture is utilized to treat a variety of health problem, one of which is obesity [3]. It exerts its effect through the insertion of thin metallic needles at specific points on the body that can be manipulated manually or by electrical stimulation. Massage could dredge Meridian Qi and promote blood circulation. Some acupuncturists feel that combined acupuncture and massage therapy might have an optimal effect in controlling body weight (BW), especially for obese patients. Some research [4,5] suggests that acupuncture intervention (in different forms) has beneficial effects in treating obesity, but in that research, the BW and body mass index (BMI) evaluation simply involved pre- and posttest comparisons; dynamic observations are lacking.

This research was designed to answer three questions. First, is combined manual acupuncture and massage therapy (MAMT) more beneficial than manual acupuncture therapy (MAT) alone for treating obesity in woman? Second, are MAMT and MAT also good for treating overweight woman? Third, when is the optimal time for BW and BMI reductions during MAMT and MAT?

2. Materials and methods

This study recruited 96 women who visited the outpatient acupuncture clinic at Liuyang Hospital of Traditional Chinese Medicine, Hunan, P.R. China between June 2012 and November 2013. Fifty-six participants with BMI ≥ 25 kg/m² were randomly divided into two groups by using a random number generator: one with MAMT (obesity + MAMT) and the other with MAT (obesity + MAT). Forty overweight participants with BMI 23–25 kg/m² were also randomly divided into two groups: one with MAMT (overweight + MAMT) and the other with MAT (overweight + MAT). Exclusion criteria for all participants included diabetes, pregnancy, hypertension, treatment with antidepressants, and use of weight loss drugs. All women were told to maintain their usual diet for the total duration of the study. None were engaged in physical training programs or calorie restriction protocols. Investigations were approved by the Ethics Committee of Liuyang Hospital of Traditional Chinese Medicine, and all participants gave written informed consent.

2.1. MAT protocol

According to Traditional Chinese Medicine, ST25 (*Tianshu*), ST21 (*Liangmen*), SP15 (*Daheng*), ST36 (*Zusanli*), SP6 (*Sanyinjiao*), LI11 (*Quchi*), SJ6 (*Zhigou*) bilaterally, RN12 (*Zhongwan*), and RN06 (*Qihai*) were chosen as the acupoints to be used for the therapy. After standard disinfection of the skin, disposable stainless-steel needles (25-mm long, 0.25 mm in diameter, Kingli, Lianghong Road, Houzhai Town,

Jiangsu, China) were applied through the skin to a depth of 5–10 mm. The stimulation was manual, and the response sought was *de qi*. The needle remained in the acupoint for 30 minutes with interval manipulations. The treatment was done once per day for 21 days.

2.2. MAMT protocol

At the end of manual acupuncture, following a 5-minute break, participants received massage. The Stomach Meridian of Foot—*Yangming*, the *Ren* Meridian, and the *Dai* Meridian in the abdomen were chosen. After the participants' abdominal skin and the acupuncturist's hands had been cleaned, the acupuncturist used the thenar eminence to rub the above meridians and acupressure to manipulate the above abdominal acupoints with moderate pressure for 25 minutes.

2.3. Outcome measures and data analysis

Participants' BW and BMI were recorded every day until the end of the trial, and daily changes in BW and BMI were calculated. SPSS software (version 13.0; SPSS Inc., Chicago, IL, USA) was used to analyze the data, and paired *t* tests were employed to examine differences. All *p* values were two-tailed, and the α level of significance was set at 0.05. For all parameters, the averages and the standard deviations were analyzed for significance by using the Student *t* test.

3. Results

All participants completed the therapy program. In both the MAT and the MAMT groups, the BW and the BMI for the obese women decreased quickly during the first 4 days. However, the differences in the BW ($p = 0.629$) and the BMI ($p = 0.525$) reductions between the two groups were not statistically significant (Figs. 1 and 2). As with the obese woman, for overweight women in both the MAT and the MAMT groups, the body weight and the BMI decreased quickly during the first 4 days. However, the differences in the BW ($p = 0.266$) and BMI ($p = 0.363$) reductions between the two groups were not statistically significant (Figs. 1 and 2).

At the end of trial, the posttreatment BW and BMI were compared with the pretreatment BW and BMI, respectively. In the obesity + MAT group, for both BW and BMI, a very significant difference existed between pre- and posttreatment ($p < 0.0001$). Significant differences in both BW and BMI between pre- and posttreatment were also noted for the obesity + MAMT, the overweight + MAT, and the overweight + MAMT groups, respectively ($p < 0.0001$). However, the differences in both body weight and BMI between pre- and posttreatment for the obesity + MAT and the obesity + MAMT groups were not statistically significant ($p = 0.143$ and $p = 0.135$, respectively). The same was true for the overweight + MAT and the overweight + MAMT groups ($p = 0.135$ and $p = 0.195$, respectively; Table 1).

4. Discussion

BMI provides the most useful and practical population-level indicator of overweight and obesity in adults. In the graded

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