

Auricular Acupressure for Weight Reduction in Obese Asian Young Adults: A Randomized Controlled Trial

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ABSTRACT

Background: Treatment options for obesity include calorie reduction, increased activity, behavior modification, pharmacotherapy, and surgery. Alternative options such as ear acupuncture may be effective adjunct therapy.

Objective: To test the efficacy of auricular acupressure for weight reduction in overweight and obese young adults.

Design, Setting, and Participants: An 8-week randomized controlled trial of 55 young Asian adults (18–20 years) with a body mass index (BMI) of 23 or higher (the cutpoint for overweight in Asians set by the World Health Organization).

Intervention: All participants met once weekly for 10 minutes. Ear acupressure treatment was administered weekly for 8 weeks (10 minutes per session): the control group had adhesive tape placed on the ear acupoints only while the experimental group had Japanese Magnetic Pearls placed on the ear acupoints using adhesive tape to hold them in place.

Main Outcome Measure: Change in BMI from baseline to trial completion.

Results: Control group BMI increased significantly from baseline by 0.05 ($P \leq .001$) and the acupressure group BMI decreased significantly from baseline by 0.70 ($P \leq .001$).

Conclusion: Auricular acupressure using Japanese Magnetic Pearls could be used to decrease BMI in young adults.

Key Words: Auricular Pressure Therapy, Weight Reduction, BMI, Obesity, Randomized Controlled Trial

INTRODUCTION

According to an NHANES study (National Health and Nutrition Examination Survey), overweight adolescents have a 70% chance of becoming overweight or obese adults. If one or both parents are overweight or obese, this risk increases to 80%.¹ To prevent obesity, strategies should target young adults. Special prevention strategies might focus on ethnic groups at highest risk for becoming obese by their mid-30s.²

Obesity is becoming more prevalent globally. It remains

a major critical public health problem in industrialized countries³ because of its association with multiple chronic disorders, including hypertension, dyslipidemia, insulin resistance, hyperinsulinemia, diabetes mellitus, gallbladder disease, osteoarthritis, some cancers, and increased mortality.^{2–5} Also, the prevalence of social problems among obese adolescents is quite high, and these social problems are predictive of both short-term and long-term psychological outcomes.⁶

Overweight and obesity are identified according to the

classification adopted by the World Health Organization (WHO). Body mass index (BMI, measured as weight in kilograms divided by height in meters squared) is widely used among adults as a measure of adiposity, with a BMI greater than 25 being indicative of overweight and a BMI greater than 30 being indicative of obesity.^{7,8} However, a WHO consultation on BMI for Asian populations (which met in Singapore in 2002) focused exclusively on issues related to overweight and obesity. The WHO suggested Asian populations use BMI greater than 23 to define overweight and BMI greater than 27.5 to define obesity. In this article, BMI is classified according to those criteria.^{8,9}

In the field of Traditional Chinese Medicine (TCM), practitioners believe that acupuncture works to modify central nervous system neurotransmitter levels by stimulating acupoints.^{10,11} Auricular acupuncture therapy has been used worldwide to treat addiction.^{11–15} The points in the human body where acupuncture can be applied are the channels that the spirit passes through and are the acupuncture sites.¹⁶ The veins and arteries of the ear connect the internal organs of the whole body.^{17,18}

Auricular acupuncture therapy is the method most often used for the treatment of obesity.¹⁹ Research shows that the most common acupuncture points for treating obesity are Shenmen, Mouth, Stomach, Endocrine points, and Small intestine. Stimulating the Shenmen point can lead participants to become calmer and can lead to sedation. Auricular of Mouth point can reduce the strong angry feeling and treat oral ulcer. The Stomach and Endocrine on the ear point can restrain appetite and eliminate the feeling of hunger (satiety and fullness), and then achieve the effect of losing weight.^{3,5,16–23} The Small Intestine point can treat dyspepsia and then achieve the effect of losing weight.¹⁷

This study was a randomized controlled trial designed to test the effectiveness of auricular acupressure interventions (Japanese Magnetic Pearl on a small adhesive tape) for

weight reduction in Asian young adults with a BMI of 23 or greater.

METHODS

Demographics and Study Design

This study used a randomized design including a control group and experimental. The sample consisted of 70 participants who were between 18 and 20 years old.

Ethics approval was obtained from the Yuan-Pei University Human Research Ethics Committee and informed consent was obtained from each participant prior to study enrollment.

Intervention

Participants were then randomly placed into 1 of 2 groups. Both groups received health education regarding consuming a reduced-calorie diet, increasing activity levels, and making lifestyle modifications. The control group received a small adhesive only on the acupoints. The experimental group had added Japanese Magnetic Pearl for acupressure on the acupoints. The points for treating obesity on the ear are Shenmen, Mouth, Stomach, Endocrine points, and Small Intestine. The weight-reduction program extended over 8 weeks. All participants met once weekly for 10 minutes. Body mass index (BMI) was measured each week.

Statistical Analysis

Data were analyzed using the SPSS General Linear Mixed-Effect Model (GLMM) guided variables inferences at individual levels and appropriated for continuous outcomes

TABLE 1. MEAN DIFFERENCE OF BMI FROM BASELINE TO THE COMPLETION OF THE INTERVENTION ($N = 55$)

Change from baseline	Control group			Acupressure group		
	BMI mean difference	<i>t</i>	<i>P</i> value	BMI mean difference	<i>t</i>	<i>P</i> value
Week 1	+0.02	-11.7	.000	+0.08	-2.7	.008
Week 2	+0.003	-8.3	.000	-0.15	-1.9	.7
Week 3	+0.006	-6.8	.000	-0.15	-1.3	.19
Week 4	+0.01	-7.6	.000	-0.3	-0.32	.75
Week 5	+0.03	-6.9	.000	-0.4	-0.89	.37
Week 6	+0.05	-6.6	.000	-0.5	-0.68	.50
Week 7	+0.02	-5.4	.000	-0.6	0.32	.75
Study end (Week 8)	+0.05	.	<.001	-0.7	.	<.001

Abbreviation: BMI, body mass index, calculated as weight in kilograms divided by height in meters squared.

(SPSS Inc, Chicago, IL). For estimates of dependent variable, each group and each time (week) were also repeated for significance; $P < .05$ was set a priori as the threshold for significance.

RESULTS

After 8 weeks of auricular therapy, the total sample of this study had 55 participants: 15 withdrew for a variety of reasons and are not included in the final analysis. There were 28 participants in the control group and 27 in the acupressure group. The breakdown of study participants by gender is as follows: 26/28 women in the control group and 24/27 women in the acupressure group (women comprised 91% of the sample).

After 8 weeks of ear acupressure treatment, BMI increased significantly in the control group by 0.05 ($P \leq .001$). This indicated that continuous ear acupressure treatment with adhesive only on the acupoints could not decrease BMI after 8 weeks (Table 1).

In the experimental group, BMI decreased significantly by 0.7 ($P \leq .001$). There was a nearly statistically significant BMI result in the second week, which indicated that participants who received continuous ear acupressure treatment with Japanese Magnetic Pearl could decrease BMI. However, there were many statistically nonsignificant BMI results in the third through seventh weeks (Table 1).

DISCUSSION

The present study results showed that after 8 weeks of ear acupressure treatment by Japanese Magnetic Pearls, the average BMI decreased significantly. Other studies support this finding. For example, in a 4-week ear acupuncture study, the mean (SD) weight loss was 4.0 (1.4) kg ($P < .05$) in the treatment group.²³ In a study of 21 obese patients using various auricular points for treatment periods ranging from 2–6 weeks, mean (SD) weight loss was 3.3 (1.9) kg (range, 1–7.3 kg).¹⁸

CONCLUSIONS

Reduction of body weight and decreasing the prevalence of obesity is an important and urgent issue.²⁴ This study's sample size is similar to that in previous research, which reached similar conclusions. One limitation is that participants were predominantly female. Thus, future work should work to balance participants' sex, with further studies involving much large groups.

In this study, auricular acupressure using Japanese Magnetic Pearls decreased BMI after 8 weeks. However, there

was no statistically significant result from the first through seventh weeks. Therefore, long-term treatment and follow-up are also necessary for further study.

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