

EFFECT OF THERAPEUTIC MASSAGE ON VITAL PARAMETERS AMONG OBESE INDIVIDUALS

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ABSTRACT

Background and objectives: Obesity is a medical condition in which excess body fat has accumulated to an extent that it may have a negative effect on health. It causes or exacerbates many health problems, both independently and in association with other diseases. Obese individuals with excess fat in intra-abdominal depots are at particular risk of negative health consequences. Massage is to rub and press someone's body with regular repeated movements. This study is conducted to know the effects of massage on vitals parameters of obese individuals. **Materials and methods:** Out of 33 subjects, 30 subjects were randomly recruited from SDM yoga and nature cure hospital, who are having BMI between 30-40kg/m². Initially vitals parameters were recorded and massage is given, after massage the post vitals parameters were recorded and the results are compared. **Results:** There is significance difference observed in post data of vital parameters $P < 0.001$ when compared with the pre vital parameters.

INTRODUCTION

Obesity is a medical condition in which excess body fat has accumulated in the body to an extent that it may have a negative effect on health.^[1] Obesity increases the likelihood of various diseases and conditions, particularly cardiovascular diseases, type 2 diabetes, obstructive sleep apnea, certain types of cancer, osteoarthritis, and depression.^[2,3] Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity, and genetic susceptibility.^[1,4] The worldwide prevalence rates of obesity have approximately doubled since 1980 to an extent that over one-third of the world's population will be overweight or obese by the year 2030 if the current trends continue.^[5] It is the most prevalent nutritional disorder in which there is excessive storage of energy in the form of fat as per height, weight, race and gender.^[6] It is a known risk factor for the development of atherosclerotic cardiovascular disease, type 2 diabetes, dyslipidemia, and hypertension.^[7] There is a growing body of evidence that demonstrate for any given BMI Asians have a greater percentage of body fat and a higher cardiovascular risk.^[8-10] Obesity is prevalent among all age groups and is on the rise among adults especially the women worldwide in both developed and developing countries.^[8] The causes of the obesity epidemic over the past 30 years are known to be multifactorial. Although there are genetic determinants, the major modifiable components are the easy availability of tasty foods and the convenience of labour-saving, or more accurately

'human-energy-saving', devices for everyday activities and transport.^[11] It is estimated that by 2030, 38% of the world's adult population will be overweight and another 20% will be obese.^[12] Diagnosis of obesity depends on many contributing factors. Several studies elucidated that Body mass index (BMI), waist circumference and waist: hip ratio are the better predictors for visceral adiposity.^[13]

Massage is an excellent form of passive exercise. The word is derived from the Greek word 'messier' which means to kneed, from French "friction of kneading", or from Arabic massage meaning "to touch, feel or handle" or from Latin massage meaning "mass, dough". Massage is the manipulation of soft tissue in the body. It is also a modality of naturopathy and quite essential for maintaining good health. Massage is to work and act on the body with pressure. Massage techniques are commonly applied with hands, fingers, elbows, knees, forearms, feet, or device. The purpose of massage is generally for the treatment of body stress or pain. Naturopathy considers obesity to be less about diet and more about correcting underlying imbalance through lifestyle change that requires a plan of care that supports long-term sustainable health optimization.^[14] It is defined as the art and science of disease diagnosis, treatment and prevention, which consists of non- invasive treatment modalities like diet therapy, fasting therapy, mud therapy, hydrotherapy, massage therapy acupressure and acupuncture, chromo therapy and magneto therapy.^[15]

This study aims to find out the effect of therapeutic massage on obese individuals.

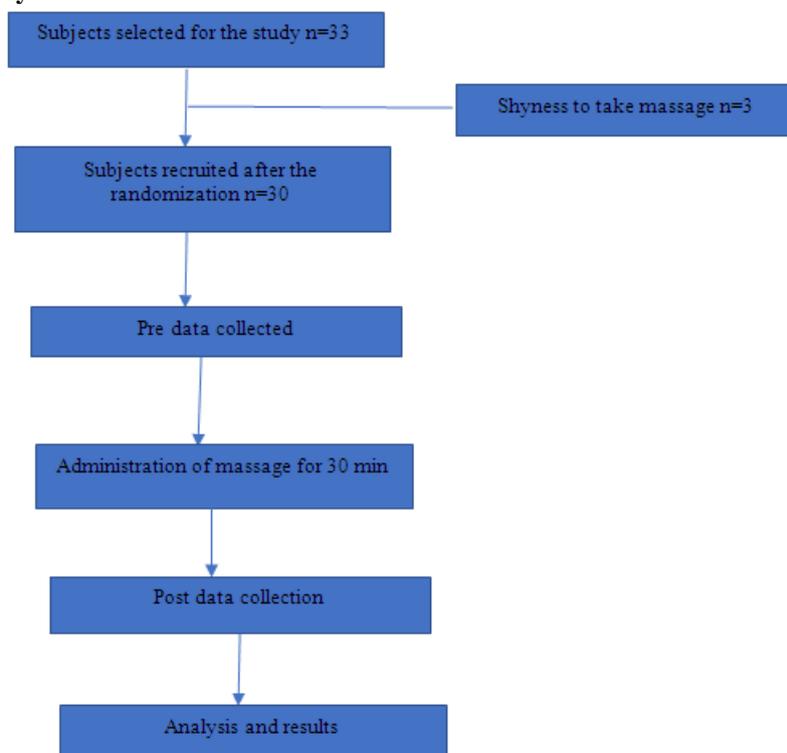
METHODOLOGY

Source of data: out of 42 subjects, a total of 30 subjects were randomly recruited SDM Nature cure and yoga hospital, Shantivana with an age between 16-40 years who are having BMI 30-40 kg/m² for the study. Subjects who fulfilled inclusion criteria were apprised about the purpose of study and their rights as a research subject.

Data would be collected from the patient undergoing screening from detailed clinical examination.

- Measurement of body weight by using digital weighing machine.
- Measurement of height by using height measuring stature tape.
- Anthropometric measurements by using centimeter inch tape.

Illustration of the study



Assessment: The data were at baseline and after the administration of the massage for 30 minutes.

Intervention: The therapeutic massage was administered as an intervention.

Data analysis: The assessments were collected as baseline data and post intervention data. Statistical analysis was done with appropriate tests using Statistical analysis software- Statistical Package for Social Sciences. A paired sample 't' test was used to the before and after values.

Subjects satisfying the selection criteria and who have agreed to give consent for participation in the study are assessed at baseline. The procedure of the study will be briefly explained to each subject. In the study the blood pressure and pulse were recorded before and after massage by using sphygmomanometer and digits of the fingers on the radial artery.

Inclusion criteria: The subjects having BMI: 30-40 kg/m², both the genders and willing to participate.

Exclusion criteria: Subjects with open wounds and with other metabolic and endocrine disorders, psychological disorders.

Study plan: The pre data were collected before the administration of massage and post data were collected after the administration of the massage.

RESULTS

paired samples test

| | Variables | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|--------|------------------------|--------------------|----------------|-----------------|---|--------|-------|----|-----------------|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| Pair 1 | PULSE_Pre - PULSE_Post | 2.800 | 4.902 | .895 | .970 | 4.630 | 3.129 | 29 | .004 |
| Pair 2 | SBP_Pre - SBP_Post | 16.333 | 9.068 | 1.656 | 12.947 | 19.719 | 9.866 | 29 | .000 |
| Pair 3 | DBP_Pre - DBP_Post | 6.200 | 4.139 | .756 | 4.654 | 7.746 | 8.205 | 29 | .000 |

From the above table, we observe that the pre- and post-measurement of the all variables are under consideration are significant at the 5 percent level of significance as $p < 0.05$.

DISCUSSION

As per the study conducted with massage as an immediate effect, the results were found to be very significant. 30 obese subjects showed significant improvement in the vital parameters. Massage is claimed to have no pain, which is a unique advantage for obese children and needle-afraid adults.

In the present study massage given as an intervention is found to be effective in reducing weight. The mechanism involved, which contributes to weight reduction in massage may involve degradation or catabolism of adipose^[16], a promotion of intestinal peristalsis^[17], and a reduction in the excitability of the parasympathetic nerve.^[18] The massage when given produces heat and makes the fat to dissolve. The dissolved fat is utilized in the body at restricted diet. Because of the rhythmic movements, skin tonicity is improved along with muscle tone. The massages relax, relieves inner congestion, draws the blood to the skin surface, promotes heat radiation and also helps in elimination of waste matter. This also mobilizes the extra fat in the abdominal region and helps in elimination of waste matter. The reduction in BP and HR could be explained through the comfortable feeling and relaxation, as well as the increase in parasympathetic activities induced by massage as shown by Ouchi *et al.* (2006).^[19] The changes of parameters of systolic and diastolic blood pressure occurring after classic massage session can be explained by the reflex theory, which refers to the impact of massage on the circulatory system. Massage causes blood vessels and lymphatic vessels to expand, which accelerates the blood and lymph flow. Massage increases the flow of venous blood and decreases the resistance of blood in arteries, which makes the heart pumping action easier, and this increases the minute heart volume.^[20]

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