

# Effectiveness of Bioenergy Economy Intervention on Self-compassion, Self-efficacy and Weight Loss

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## Abstract

**Objective:** Obesity is one of the risk factors for various diseases as well as mortality and women suffer from it more than men. Therefore, this study was conducted to design and evaluate the effectiveness of bioenergy economy intervention on self-compassion, self-efficacy and weight loss in women with obesity.

**Method:** The design of the present study is quasi-experimental with pre-test, post-test, and control groups. The statistical population of the study included obese people who were referred to psychological counselling centres and nutrition clinics in Tehran in the spring and summer of 2019. Fifty obese women were selected by convenient sampling method and randomly assigned to intervention and control groups. The Self-compassion scales of Neff and self-efficacy questionnaires of Scherer et al. were used to collect data. The weight and body mass index of participants were also calculated. Based on instructions of the bioenergy economy protocol of the American University of Medical Energy, a special training package for obesity was designed and was provided to the intervention group during 8 sessions of 120 minutes for 8 weeks. Data analysis was performed by analysis of covariance using SPSS software version 24.

**Results:** The results showed the effectiveness of the bioenergy economy on self-compassion and self-efficacy ( $P < 0.01$ ).

**Conclusion:** With this description, it can be claimed that effective interventions such as bioenergy economy can be used to increase the health and self-care of people with obesity to prevent the destructive effects of obesity and its complications.

**Keywords:** Bioenergy economy, Obesity, Self-compassion, Self-efficacy, Lose weight.

## Introduction

Obesity results from long-term overuse of energy over energy expenditure and a range of genetic, physiological, behavioural, and environmental factors are also involved. Obesity is a medical condition in which excess adipose tissue is accumulated in the body. Excessive accumulation

of adipose tissue can cause a decline in health indicators, including a reduction in life expectancy and/or a decrease in quality of life. Although obesity is not a mental illness, there is a strong link between obesity and mental disorders (overeating, depressive, and bipolar disorders, schizophrenia). On the other hand, the side effects of some psychiatric drugs play an important role in the development of obesity and obesity can be a risk factor for some mental disorders such as depression (American Psychiatric Association, 2013).

Thus, obese people are more at risk than others. The prevalence of obesity in the world was doubled from 1980 to 2008, which is more prevalent among

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women than men. This trend is increasing in the world. According to statistics published by the World Health Organization, overweight and obesity among women aged 15 to 49 have increased by an average of 20 percent in all parts of the world among both rich and poor people (World Health Organization, 2018). In 2016, more than 1.9 billion adults aged 18 years and older were overweight. Of these, over 650 million adults were obese. In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight. Overall, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016 (World Health Organization, 2020).

Obesity rates have increased in all ages and both sexes, irrespective of geographical locality, ethnicity, or socioeconomic status, with greater prevalence in older persons and women. This trend was similar across regions and countries; however, absolute prevalence rates of overweight and obesity varied widely. For some developed countries, the prevalence rates of obesity seem to have leveled off during the past few years (Chooi, Ding & Magkos, 2019).

The prevalence of obesity among women is more. Women aged 35-44 have lower physical inactivity compared to women aged 25-34 and 18-24. People with less college education have a lower prevalence of obesity compared to those with higher levels of education and college graduates. Those with an annual income less than people with higher levels of income have less physical inactivity (Malik, Willet & Hu, 2020).

The prevalence of obesity and overweight in Iran is dangerous. In Iran, 29 million people have obese and overweight. Since 1980 to 2015, the prevalence of overweight in adult women has increased from 31.7% to 32.3%, and the prevalence of overweight in adult men has increased from 23.9% to 35.3%. Also, in the same period, the spread of obesity in

women has increased from 16.6% to 24.1%, and the prevalence of obesity in men has increased from 5.8 to 13.8%. The obesity rate in girls under 20 has increased from 1.7% to 4.5%, and in boys under 20 has increased from 1.2% to 4.3%. The standardized prevalence of overweight and obesity in adult men and women has risen from 39.2% in 1980 to 53.1% in 2015. During the 1990s, the number of deaths due to obesity in women was about 10,500, which in 2015, it reached 22,000 and more than twice. Obesity in Iranian women is increasing sharply. According to research conducted in the Golestan Cohort Study on more than 50,000 Iranian adults between the ages of 40 and 75, especially among Iranian women, obesity has been on the rise. The results of a large study of the Golestan cohort have shown that overweight and obesity in the ages of 15 to 30 years are associated with an increased risk of overall mortality from cardiovascular disease and cancer at older ages (Digestive Diseases Research Institute, 2020).

The prevalence of obesity in men is estimated at 10.7% and 14% among women (Rahmani, Shahmiri, Asadollahi, Sarikhani & Islami, 2015).

### **Self- efficacy and self-compassion**

If a person, despite being obese, still refuses to take serious action to lose weight, this can be due to the inefficiency of that person's belief system and is closely related to the dysfunctional beliefs about themselves and their lack of confidence in their abilities. Self-efficacy means that one considers self as the ability to organize phenomena and events to achieve the desired situation with appropriate behavior and actions (Jain & Dowson, 2009). Self-efficacy means one's belief in his/her ability to achieve the desired result. People with low self-efficacy have pessimistic thoughts about their abilities and avoid any situation they think is beyond their abilities. In contrast, people with high

self-efficacy consider difficult tasks as challenges that they can overcome (Sarvghad, Rezaee & Masomi, 2010).

Findings of research showed a significant relationship between hardiness and self-efficacy. According to Bandura, hard people deal with problems and set high goals in difficult situations because they know how to use problem-solving skills and strategy. They are able to get along with their challenges because they have learned how to look at their doubts and find hard-working and stable individuals by embodying their own existing capabilities to succeed. They have found the skills giving them a sense of trust, perseverance, and being not satisfied with the trivial results (Farahbakhsh Beh, 2018).

In the meantime, self-compassion, which is rooted in Buddhist philosophy, is a healthy way of linking to oneself that requires three main components: self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification of painful thoughts and feelings. Self-compassion involves accepting one's suffering instead of giving up or avoiding it. Instead of criticizing oneself, which creates a desire to heal and improve the person. Self-compassion involves a combination of mental awareness of painful emotions, considering personal events as part of larger human experiences, and being kind to oneself when experiencing failure (Neff, 2003a).

### **Bioenergy Economy**

Many interventions have been performed to lose weight and improve self-efficacy and self-compassion. Most of these interventions have had a psychological approach and have focused on one aspect of human existence. In this study, the bioenergy economy (BEE) approach is used as an intervention (with systemic, histological, and integrated infrastructure), which is a comprehensive

and holistic approach and considers all aspects of human existence in treatment. The results of obesity that have occurred in recent years and following these dynamic trends increase the complexity of the issue. What we need is an approach that acknowledges this complexity and dynamism. To understand and deal with complex systems such as obesity, a single approach is needed. A systemic approach means better understanding and addressing all systems (e.g., biology, behavior, social media, environment, culture, economics, and politics) related to diet, physical activity, metabolism, and obesity.

Bioenergy economics (BEE) is one of the therapies that control the mind and body and is based on energy. This approach has a systematic view towards humans and considers the humans condition the result of the interaction between four physical, energy, spiritual, and mental systems within men. In this approach, health is the result of the interaction of these four systems in humans. The roots of the professional experiences of this approach are derived from libido economics of Freud, Reich, Lyotard, Deleuze, and Guattari, biosemiotics of Leon, medical energy, semiotics of Pierce, systemic theory, histological therapies, especially methods based on mindfulness, physical phenomenology of Marlowe Ponti, and transpersonal psychology, as well as Eastern development traditions such as Yoga, Chi Gong, and Ricky, and most of all, rationalist psychology (Goli, 2010; Levold & Goli, 2017).

The term bioenergy economy is based on the historical background of the use of the concept of economics in the psychosomatic approach. Economics in this term not only determines the relationship between mind and body but also convincingly acknowledges the link between diagnosis and treatment, and medicine and life. By this definition, the bioenergy economy can be

considered as a meta-cognitive model that surrounds matter, consciousness, and the transformation of information in the human condition. Economy, etymologically, means home management and, in general, optimal use of resources. Its basic concepts are production, distribution, consumption, balance, and moderation (Goli, 2010).

Obesity is a metabolic disorder that is the origin of some health problems such as cardiovascular diseases. The purpose of Lotfi's (2019) study was to compare the efficacy of cognitive-behavioral therapy and mindfulness-based cognitive therapy on activity and weight in obese individuals with cardiovascular disease. Based on the results of this study, it can be said that CBT and MBCT can lead to increase activity in patients with obesity and cardiovascular diseases by changing their lifestyle and cognitions. Explaining the effect of mindfulness on the reduction of body mass of the subjects in the experimental group, it can be said that mindfulness probably increases a person's self-control, self-regulation, and self-monitoring of his behaviors by controlling moment-by-moment and non-judgmental consciousness in a step-by-step manner that leads to recovery (Lotfi, 2019).

### **Theoretical Foundations**

Martha Rogers provided a comprehensive health model. In his model, the human being is considered in relation to the surrounding energy fields. In Rogers' view, man has the following characteristics: integrity, meaning that man is a whole and is beyond its components. Openness, in which man is always interacting and exchanging matter and energy with his environment. One-sidedness, critical processes flow in parallel and irreversibly in a time-space continuum. Organizing life space: Nature order is known as the best lifestyle model. Man is an emotional and thoughtful creature: Man includes thought, behavior, and excitement (Goli, 2016).

The concepts by which Rogers describes the integrity of human beings and their relationship to the environment include the following:

*Interaction:* There is an interaction between the human field and the environment. *Simultaneity:* The human field is at a specific time and place with the environmental fields at the same time and place.

*Helix:* Humans interact with their environment on a longitudinal axis of the helix in time and space.

*Resonance:* Changes in the pattern and structure of human and environmental fields based on waves and vibrations (Goli, 2010).

In modern medicine, which works on the paradigm of Newtonian laws of mechanics and Cartesian logic, energy-based regression therapies that work on the basis of mind-body have no place. Also, experiences of energy-based regeneration, such as prayer, tactile therapy, and telemedicine, which work on purpose, are not understood in the prevailing paradigm. But in medicine, the relationship between mind and body can be examined based on the bio-psychosocial model (Goli, 2010). The bio-psychosocial model is based on the general theory of Bertalanffy systems and, in theoretical science and psychology, has created a theoretical framework based on the relationship between mind and body. In general systems theory, the world is an interconnected set of systems that affect each other. Humans are also in this continuum and are connected to other systems. On this basis, the connection between man and the world and the mind and body can be explained. The psychosocial model provides a good basis for developing a holistic view of the treatment process. Although the subject of the continuum of life in the biopsychosocial model is similar to Klinger medicine, the biopsychosocial model relies on methodological and empirical studies, but Klinger medicine is based on deductive.

Fields and electromagnetic energy in the body are

created through the piezoelectric effect and the flow of potentials. The piezoelectric effect is due to the tension and compression of the crystalline regulation of body tissues, which leads to the creation of electric fields. The current of potentials is created by the collision of a constant electrostatic charge with a moving charge in the body, which in turn creates other electric fields in the body. Thus, our body produces electrical energy and electric fields that normally neutralize each other, but there is a possibility of alignment of these fields in humans (Goli, 2010). Inking, symbolic rules, and practical experiences (Goli, 2010).

The effectiveness of bioenergy economics has been tested in various fields such as improving mood, reducing anxiety, and controlling pain in patients with migraine (Derakhshan, Manshaei, Afshar & Goli, 2016), improving the signs and symptoms of tethered cord (Goli & Boroumand, 2016), treatment of autoimmune disorders such as ulcerative colitis and pemphigus (Goli, 2016), and improved sensitivity to anxiety and attention (Keyvanipour, Goli, Bigdeli, Boroumand, Rafienia & Sabahi, 2019). There are also reports on improving educational performance and presence experience (Ahangar Ahmadi, Henning & Goli, 2017), awakening teachers to their presence (Ahanar Ahmadi, Henning, & Goli, 2017), attention bias modification (Keyvanipour, 2019), symptoms and compassion for patients with chronic pain (Karimi, 2019) using this approach and also, training on Flexibility and Psychological Capital among Parents with children of behavioral disorders (Barzin, 2020).

Over the years, study and theorization of the bioenergy economy have focused more on the search for a care system that can harmonize human matter and meaning, an approach that links body-mind, medicine-life, human-nature, ethics-economics, and spirituality and allows

us to benefit from various bio-psychological, social, and spiritual care and treatment methods in a harmonious and integrated way. However, integration is by no means achieved by breaking down the boundaries of these social systems (Goli, 2018). Bioenergy economy is the science of linking resources appropriately to one's needs to create lasting happiness and satisfaction. Therefore, people must be able to interpret their desires, know their needs and understand the difference between them and needs, know their resources, which are a stream of matter, energy, information, and awareness, and align their desires and be able to use these resources in a way that leads to lasting satisfaction and happiness (Derakhshan, Mensheni & Afshar, 2013).

This approach affected the symptoms of pain and compassion for patients with chronic pain. Patients learned to look at their pain differently and to be compassionate about what happened to them. And they understood to narrate their anger at the events that have befallen them or the concept of lack of health in the narration of their life and to be angry with themselves and their life experiences. With the training of self-awareness, one pays more attention to the body, functions, pain gates, and the concept of pain, which is expected to increase the amount of compassion for oneself. Using this approach, one learns to consciously turn one's bioenergy towards oneself (Karimi, 2019).

Due to the novelty of energy-based therapies in Iran and very little research in this field, no domestic research has been found that examines the effect of a bioenergy economic intervention on weight loss and obesity. Each of the biological (medical and nutritional) and psychological treatments may be effective alone as a short-term treatment for obesity. However, there seems to be a gap for a therapy that can examine a person with all dimensions of existence, including physical, emotional, and



cognitive structures on a broader level. Research shows that using mixed methods that involve cognition, emotion regulation, directing attention, and awareness can have more effects on weight loss and obesity treatment (Abdolkarimi, 2019).

Because the disorder has intertwined biological psychological-social-cultural levels, it seems that bioenergy economy intervention can be effective in reducing the severity of symptoms, the efficiency of the individual, and the treatment of obesity. The bioenergy economy has a general protocol and this study will develop a special protocol to examine its effectiveness on self-compassion, self-efficacy, and weight loss in women with obesity. Based on the above explanations, this study tends to answer the question of whether the bioenergy economy program has an effect on self-compassion, self-efficacy, and weight loss in obese women. The bioenergy economy affected symptoms and compassion for patients with chronic pain (Karimi, 2019). But this is the first study examining the effect of bioenergy and self-efficacy and losing weight.

For more than 10 years, the Bioenergy Economy (BEE) system has been taught primarily for health promotion and therapeutic means. A primary tenet of this approach is the cultivation of presence, which can be defined as an increased state of awareness that fosters the physical, mental, and emotional functions of an individual and his/her social relationships (Rodgers & Raider-Roth, 2006).

Bioenergy economy aims to release body blockages and reprocess information energy throughout the body via the development of tensegrity in the body, non-duality in the narrative, synergism in relationships, and attunement in intentionality. The BEE bodily, reflective, and cognitive-behavioral modalities are applied more in a met diagnostic and upward-down approach.

This approach is an integrative, evolutionary, body-centered approach to care. This care system attempts to integrate the matter-energy-information-consciousness process through four levels of body economy, narrative economy, relation economy, and intention economy. BEE is an integrative healing model which attempts to abstract healing modalities and integrates them into a psychosomatic health system. The major resources to actualize health in all its aspects are a systemic and evolutionary clinical approach, a common language, and a feasible model to integrate body-mind, self-other, human nature, and treatment-life. That is, how to make one's body, narration, relation, and intention coherent. The more we rely on economic patterns which are in more harmony with life, the more we reach higher health or, to say, more development of happiness in all inter/Intra/transpersonal fields of communication. For this purpose, bodywork, energy work, mindfulness, and psychodynamic techniques are employed in an integrative manner. Body economy, the first level, focuses on mindful re-cathexis of the physical body and harmonization of tones of tactile, proprioceptive, vestibular, and visceral perceptions. Body economy leads to the development of grounding and a "tensegrity" state. The development of body awareness promotes self-awareness and security. The sense of tensegrity is not only our state of mechanistic tuning but a reference point that can be returned to when any chaos occurs in thinking and emotions. We can regulate our emotions by re-establishing tensegrity and whole-body experience, without dealing with mind content.

Having the body tuned, when we come back to the same thoughts and feelings, we often find out there is no problem to be solved, and the problem changes or becomes clearer with sharp confines and illustrations. Practitioners of BEE mindful and behavioral practices experience increased energy

accompanied by reduced feelings of stress, pressure, and anxiety (Schoeberlein & Sheth, 2009).

This study aims to follow its objectives including

- 1) Increasing the presence experience enables the people to better integrate their body, thoughts, and emotions. This may lead them to awareness of eating behavior and increase their self-compassion and self-efficacy and, finally, lose weight.
- 2) Increasing delay of discounting (a behavioral characteristic that may underlie this behavior), and inhibition of sooner pleasure for more satisfaction.
- 3) Being aware of body senses for realizing the satiety signal sooner and before feeling fullness/ detecting herself in relationship with food or eating.
- 4) Practicing more caress, kindness, and self-compassion led to control self-blaming and self-defeating driving, reducing anxiety in which her eating behavior becomes more economical and reasonable.
- 5) Reprocessing body memory leads to reducing anxiety, opening energy pathways and bio-psychosocial balance, and spreading energy in the whole body, and relatively decreasing oral fixation instead of being fixed to oral pleasure.
- 6) Empowering intention a self- control.

## Method

### Participant and procedure

The present study is applied in terms of objective and in terms of method, it is quasi-experimental with pre-test and post-test design and control group. The statistical population of the study was obese people referring to Taam Asrar nutrition clinics in Tehran in the spring and summer of 2019. Inclusion criteria included being a woman, ages between 15 and 49 years, body mass index of 30 or higher, and at least one year of weight stability.

Exclusion criteria included having chronic and acute mental and physical illnesses that were reported based on the medical records available in the clinic and self-reported results, simultaneous use

of other treatment methods, being under medical treatment, and absence of two or more sessions in training sessions. The sample size for comparison of intervention and control groups based on the difference of 15% and taking into account the first type error of 5% and test power of 0.80, 50 women with obesity in the intervention and control groups were selected by convenient sampling method. The choice of classes was based on age group and level of education. Individuals in each class were randomly assigned to either intervention or control groups.

Participants were asked to fill up the demographic data, a self-compassion scale, and a self-efficacy questionnaire before the intervention. The weight of each participant was determined and recorded using a scale. The intervention group received BEE intervention and the control group did not receive any training or intervention. After the interventions, participants were again asked to complete the same questionnaires and their weights were measured and recorded. To observe ethical issues, the control group also received BEE intervention after this process.

### Ethical Statement

All study participants submitted written consent before beginning the study. They were informed about the subject and the method of the study before beginning the research. The private and personal information of the participants was kept confidential. The participants were assured that their information would not be published anywhere without their permission. The participants were informed of the interpretation of the results if they wished. In the case of any abnormality, the necessary instructions were provided to the candidates for following up. They were ensured that no physical or psychological harm would threaten them at any stage of the investigation. Participation

in the study did not impose any financial burden on the participants. This study did not contradict the religious and cultural norms of the subject and society.

### Measures

The self-compassion scale (SCS) was developed by Neff in 2003 and includes three scales of bipolar over-identification versus awareness, isolation versus common humanity, and self-judgment versus self-kindness. The longer form of this scale consists of 26 items that are set on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5), and the higher the score, the higher the level of self-compassion is. Psychometric properties of the scale have been confirmed in studies abroad. The correlation coefficient of six factors of this scale and self-compassion (total scale) has been confirmed at the level of 0.001 (Neff, 2003). In Iran, the alpha coefficient for the overall score of the scale is 0.86. Moreover, Cronbach's alpha coefficients for subscales of over-identification, awareness, isolation, common humanity, self-judgment, and self-kindness were 0.83, 0.8, 0.85, 0.84, 0.79, and 0.81, respectively. In general, coefficients of validity and reliability of CSC were satisfactory (Khosravi, Sadeghi & Yabandeh, 2013).

The results of this study showed that the Neff Self-Compassion Questionnaire (2003) is at an acceptable level in terms of reliability and validity. The results of factor analysis showed that this questionnaire has a suitable factor structure, which is consistent with the initial theoretical basis introduced by Neff (2003). The six extracted variables are self-kindness, self-judgment, mindfulness, over-identification, common humanity, and isolation that constitute the factor structure of the self-compassion questionnaire. Therefore, questions related to each factor have a good ability to predict the degree of compassion. Therefore, this scale can

be used for academic research and psychological research to diagnose and treat mental disorders.

The self-efficacy scale (SES) was developed by Scherer et al. (1982) to measure general self-efficacy in 17 items on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). Higher scores indicate stronger self-efficacy and lower scores indicate weaker self-efficacy. Validity calculated by Cronbach's alpha coefficient is 0.86 and its validity is obtained through construct validity (Scherer et al., 1982). In Iran, Barati has reported the reliability coefficient of the scale in a study using the Guttman split-half test to be 0.76 and using the Cronbach's alpha coefficient to be 0.79 (Bakhtiari Barati, 1997).

### Training materials

Based on the instructions of the BEE Protocol developed at the California University of Medical Energy, a special training package for obesity was designed and the intervention group was trained in 8 sessions of 120 minutes for 8 weeks through this protocol. In the intervals between classes during the week, two intervention groups were asked to perform the exercises. Moreover, the summary of training materials in each class and exercises of each session were presented to the participants in the form of a CD and a written summary.

### Sessions were as follows:

First session: 1) Familiarity with the entire program and group members and doing pre-test. Obesity was defined as a common problem (causes of obesity, complications of obesity). 2) Emotional eating was explained and each person was told about their emotional eating. Studies show that people who are overweight have emotional problems. 3) Awareness and accepting the reality of obesity and overweight: the important issue in weight loss is how we are overweight and whether we really accept it,



exaggerate it, or ignore it. 4) Bioenergy economics is a group of therapies that control the mind and body and are energy-based. This approach has a systemic view of men and considers the “human condition” as the result of the interaction between the four physical, energetic, spiritual, and mental systems within men. 5) The treatment of obesity requires self-care, self-compassion, self-efficacy, and self-image (imagining oneself and one’s body) that play an important role in weight loss and self-care.

Second session: 1) Regarding economics, two things should be considered: 1. Identifying needs and wants, and 2. Identifying resources. It is the “economy” that determines what life should be like, what our living world should be like, whether it has dimensions or not, where it should go, in which it should spend its energy, what expectations it should cultivate and what expectations it should raise. 2) The second word is “energy”. one of the most important and common words we use and hear from others is “energy”. It means what we invest in what, and to what extent. “Energy investment” can be called “investment”. Whether it’s a simple note, and whether we spend the time, or the money we spend, etc. are different forms of energy. 3) The next word is “bio”. Why do we use the word biology? Because we are part of the process of life and we are living creatures and like other living beings we are a “self-organizing” system or organization. It means that we have a membrane or boundary that separates us from other beings in this universe. 4) Definition of the thought-feeling-body cycle, thinking, behavior, and body or our physiology, which involves the chemical changes in our body. 5) Now that we know how our bodies are involved in the flow of thoughts and feelings, we need to mix them with kindness and friendship. Awareness means being at a distance from the system. 6) Introduction of emotions, emotional body map, and unhealthy emotion regulation strategies. 7) Feeling

of insecurity in the body, body armor, character armor, the long-term injuries, blows, and pressures that have been on us to create tension for and, according to Wilhelm Reich, create armor in our bodies. These armors make us not be flexible and behave as a whole. Each time, one of these armors is switched on and they control us. One of these tensions, memories, and insecurities is switched on and then controls our behavior. This armor holds everything. 8) Progressive relaxation training (PRT), feedback, weekly schedule presentation: introducing kindness to the body, we begin with the practice of “relaxation-tension-release.” This exercise involves stretching and releasing groups of muscles throughout the body and aims to create relaxation that occurs after the release of tension.

Third session: 1) Experience of better quality and more pleasure in eating, substituting eating pleasure. 2) Practice eating less, having more fun: Replace eating with another enjoyment, control more pleasure, and continue earlier and immediate pleasure. Acting economically. 3) Definition of body senses, awareness of body senses (ICA): It is the body’s intrinsic sense that recognizes the basic and essential responses to functions such as heart rate, respiration, blood pressure, hunger, thirst, and temperature. The inner goodness formed on the basis of the human body is an excellent quantity for the level of consciousness and draws our mental image of how we perceive this world and define our place in the world. 4) practice more caress, familiarity, and kindness with the body. 5) Hearing the body voice, underlying feelings of hunger. 6) War and peace with the body (craving as an enemy or friend). 7) Distinction of satiety/hunger-satiety/fullness. 8) Body in balance, co-tension, body rhythm, concepts of work and load, and situation. 9) Training vibration exercise.

Fourth session: 1) Review week experiences. 2) Definition of values: the interpretation of desire

and to see how and in what direction our desire moves and where this desire spends its vital energy. We spend our energy on things that are considered worthwhile for us. 3) Needs, demands, Maslow needs pyramid (basic/deficient needs). 4) Obesity benefits (scale of obesity and weight loss benefits), value-oriented why prioritization of values in weight loss. 5) Exercised impulsive, reactive, action exercises, and conditioned relaxation training.

Fifth session: 1) Week experiences review. 2) Definition of the economy of narration: how do we narrate the world? How do we imagine the world in ourselves? Everyone reacts to their own world. We have two common forms of guiding attention. Internal guidance and external guidance. 3) Conscious attention guidance: the inner guidance of attention is based on values, that is, the things that matter to us. Important as a resource or important as a risk. So, the inner guidance of attention is based on importance. 4) Life story. 5) Exercised reflective meditation training. 6) Writing goals training. 7) Body memory and barriers to happiness in the body, free flow of energy in the body, vibration energy exercises, and posture training.

Sixth session: 1) Week experiences review; 2) Emphasis on "awareness" of bioenergy flow in the body; 3) Shift of attention from subject to body: self-reliance or acting on our own saves us from the myriad traps of other people's minds. Much of our effort is to create our own image in the minds of others. 4) love is the compass of our feelings and actions. As long as we have a sense of caring for the core value of sustainable development of interpersonal and intrapersonal happiness, we have a life orientation. Love unites different emotions. 5) Distance: the optimal distance is the "synergistic distance". The synergistic interval is the interval at which synergy occurs. 6) Relationship with food/eating: How is my relationship with food? Does food make me happy? Is food a friend or an enemy to me? Is food a hobby for me? Does food

connect me to others? What does food mean to me? Does food play an essential role in life? Is food the biggest concern of my life? 7) Middle way/love limit. 8) exercised body refinement training. 9) Non-template practice for memories/worries/encounters in the relationship. 10) Positive no training.

Seventh session: 1) Intentionality, turning around, donoising (4 topics to consider): Intentionality is a characteristic of consciousness; it means the openness and bias of the body and the quality that comes from it, and the awareness of quality. Like any telecommunication system, the system of our mind (whether in relation to ourselves, in relation to others, or in relation to the universe) depends on the signal-to-noise ratio. The larger the ratio, the more efficient the telecommunications system is. Most of the time, our thoughts are focused on the signal and what kind of signal to amplify. But the problem is that when there is a lot of noise, the stronger the signal, the more noise there is. So we have to reduce the noise. 2) Obstacles to empowering intention, gratitude, surprise, forgiveness, and giving. 3) Activation of the power of intention. 4) Boundless exercise.

Eighth session: 1) The heart is the layer of emotions of the body. But when we have two or several hearts, we have no heart. When our heart is one heart, then we are integrity. 2) Hell Machine: In this approach, we call resentment and blame the machine and because it is a functional device or circuit of the brain that distracts our souls from further life and production and forces them to produce suffering and torment in general. Whether it is our own fault or another mistake or oppression, and what natural disasters cause the lack of this machine of hell. 3) Familiarity with alignment and the role of the energy system in mind-body coordination. 4) Energy vibration exercises and alignment. 5) Giving up the intention. 6) week experiences review, exercise correction (teamwork), answers to questions and practicing the current exercises.

**Table1: Summary Of Training Package For Obesity Based On BEE Protocol Developed At The University of Medical Energy, California, USA**

Session	Subject	Objective	Activities
Session 1	Economy of body	Introducing the topic of the program and class members	<ul style="list-style-type: none"> <li>- Obesity as a common problem (definition of obesity, causes of obesity, complications of obesity)</li> <li>- Emotional eating (definition, signs, etc.)</li> <li>- Obesity and overweight as an important problem in life</li> <li>- Accepting the reality of obesity and overweight</li> <li>- Psychological problems, the missing link between us and goals of diet</li> <li>- Definition of bioenergy economy</li> <li>- The role of self-compassion/self-efficacy/physical self-concept in weight loss and obesity</li> <li>- Definitions of economy: resources/needs, home management: where is home?</li> <li>- Body awareness</li> <li>- Definition of thought-feeling-body cycle</li> <li>- Introduction of emotions, emotional body map, unhealthy emotion regulation strategies</li> <li>- Feeling of insecurity in the body, body armor, character armor</li> </ul>
Session 2	Economy of body	Introducing the concept of BEE	<ul style="list-style-type: none"> <li>- Friendship and kindness with the body necessary to solve the problem of obesity and overweight</li> <li>- Relaxation exercises, breathing technique, conscious eating exercises</li> <li>- Body-feeling-thinking cycle, emphasis on the body in breaking this chain</li> <li>- Progressive relaxation training (PRT), feedback, weekly schedule presentation</li> <li>- Experience of better quality, more pleasure in eating, substitution in eating pleasure</li> <li>- Practice of eating less, more fun</li> <li>- Definition of body senses, awareness of body senses (ICA)</li> <li>- Practice of eating with pleasure</li> </ul>
Session 3	Economy of body	Reviewing life experiences and joys, lasting joys, key control exercise in times of stress	<ul style="list-style-type: none"> <li>- Practice of more caress, familiarity and kindness with the body</li> <li>- Hearing the body voice, underlying feelings of hunger</li> <li>- War and peace with the body (craving as an enemy or friend)</li> <li>- Distinction of satiety/hunger-satiety/fullness</li> <li>- Body in balance, co-tension, body rhythm, concepts of work and load, situation</li> <li>- Vibration training</li> </ul>

Session	Subject	Objective	Activities
Session 4	Economy of narration	Stabilizing happiness and energy processing levels	<ul style="list-style-type: none"> <li>- Definition of values</li> <li>- Needs, demands, Maslow needs pyramid (basic/deficient needs)</li> <li>- Obesity benefits (scale of obesity and weight loss benefits), value-oriented why, prioritization of values in weight loss</li> <li>- Commitment to being obese</li> <li>- Impulsive, reactive, action exercises, conditioned relaxation training</li> </ul>
Session 5	Economy of narration	Conscious attention guidance	<ul style="list-style-type: none"> <li>- Definition of economy of narration</li> <li>- Conscious attention guidance</li> <li>- Internal/external guidance</li> <li>- Life story</li> <li>- Reflective meditation training</li> <li>- Writing goals training</li> <li>- Body memory and barriers to happiness in the body, free flow of energy in the body, vibration energy exercises and posture training</li> </ul>
Session 6	Economy of relation	Relation	<ul style="list-style-type: none"> <li>- Shift of attention from subject to body</li> <li>- My feelings, my relationship, my limit</li> <li>- Distance, angle, ratio</li> <li>- My relationship with food/eating</li> <li>- Middle way/love limit</li> <li>- Body refinement training</li> <li>- Non-template practice for memories/worries/encounters in the relationship</li> <li>- Positive no training</li> </ul>
Session 7	Economy of intention	Emphasizing body awareness, free flow of energy in the body and relaxing, enhancing happiness with gratitude, redefining gratitude, barriers to self-gratification and the other and being	<ul style="list-style-type: none"> <li>- Intentionality, turning around, denoising (4 topics to consider)</li> <li>- Obstacles to empowering intention, gratitude, surprise, forgiveness, giving</li> <li>- Psychosomatic and psychomotor power of intention</li> <li>- Activation of the power of intention</li> <li>- Relation to transpersonal realm</li> <li>- Active imagination training</li> <li>- Boundless exercise</li> <li>- Heart, acceptance</li> <li>- Hell Machine</li> </ul>
Session 8	Economy of intention/ conclusion	Love way: kindness is with me	<ul style="list-style-type: none"> <li>- Familiarity with alignment and the role of energy system in mind-body coordination</li> <li>- Energy vibration exercises and alignment</li> <li>- Giving up intention</li> </ul>

## Results

The demographic characteristics of the participants are presented in Table 2. It shows that the majority of participants in the intervention and control groups are married and had a high school diploma to a bachelor's degree; distribution of marital status and education was almost the same in both groups.

The results of Table 3 indicate that the height of the participants was between 150 and 175 cm and their age was between 17 and 49 years. The distribution of these variables was almost the same in both groups.

The mean and standard deviation of the studied variables by groups in two stages of pre-test and post-test are presented in Table 4. According to Table 4, scores of the participants in self-compassion, in most components and total score, increased in the intervention group in the post-test. In the control group, where the participants did not receive any

intervention, some components increased in the post-test and some components decreased, and finally, the total score decreased in the post-test.

**Table2:** Demographic Variables By Marital Status And Education Of Participants

Group	Variable	N	%
BEE intervention	Marital status	Single	7 28
		Married	18 72
	Education	To diploma	10 40
		Bachelor's	9 36
		Master's	5 20
Control	Marital status	Single	10 40
		Married	15 60
	Education	To diploma	9 36
		Bachelor's	5 20
		Master's	9 36
	PhD.	2 8	

In Table 5, the findings show that the scores of the

**Table 3:** Demographic Variables by Height and Age of Participants

Group	Height				Age			
	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
BEE Intervention	163.36	5.72	153 cm	175 cm	31.52	9.02	18 years	45 years
Control	161.4	5.13	150 cm	173 cm	35.96	9.17	17 years	47 years

**Table 4:** Mean and Standard Deviation of Self-Compassion

Group	Variable	Post-test			
		Mean	SD	Mean	SD
BEE intervention (n=25)	Over identification	11.64	4.43	11.76	3.88
	Awareness	14.08	3.12	14.56	3.65
	Isolation	10.56	2.88	14.88	3.23
	Common humanity	12.4	3.48	13.68	3.17
	Self-judgment	13	3.77	13.84	3.48
	Self-kindness	15.76	3.62	17.96	3.89
	Total	77.44	11.42	86.68	14.95
Control (n=25)	Over identification	12.32	3.35	10.16	2.86
	Awareness	13.28	3	13.84	2.51
	Isolation	10.8	3.27	11.96	2.33
	Common humanity	13.12	3.65	12.52	3.94
	Self-judgment	12.92	3.3	11.52	3.68
	Self-kindness	15.44	4.85	15.88	3.58
	Total	77.88	12.84	75.88	10.58



participants in the post-test increased more in the intervention group and less in the control group.

As shown in Table 6, weight and body mass index of participants in the intervention and control groups decreased in the post-test phase.

Based on the suggestions of Miller and Chapman (2001), the assumptions of homogeneity of regression slopes, homogeneity of variances, and normal distribution of data should be observed before conducting MANCOVA. To assess the equality of group variance, Levene's test was performed. Therefore, the result of Levene's test was not significant ( $P>0.01$ ); hence, the assumption of homogeneity of variance is met. In addition to the homogeneity, regression slope was tested by adding the interactions (pretests), and (groups) to the ANCOVA. The results of the homogeneity of regression slope showed that there was not a significant interaction between the group and pretests

( $P>0.01$ ). Furthermore, the assumption of the normal distribution of data using the Kolmogorov-Simonov test showed that given the significance level higher than 0.05 in this test, the normal distribution assumption has therefore been met, so it is possible to use analysis of covariance.

The result of Table 7 in total score indicates that there is a significant difference between the dependent variable (self-compassion) and covariate (pre-test) ( $P = 0.000$ ). Among the components, isolation and self-judgment ( $\alpha=0.01$ ) and self-kindness ( $\alpha=0.05$ ) were significant. The significant difference between the intervention group and the control group indicates that the null hypothesis can be rejected with 99% confidence. Therefore, the opposite or the researcher's hypothesis on the effectiveness of BEE intervention on increasing self-compassion is confirmed.

Table 5: Mean and Standard Deviation of Self-Compassion

Group	Variable	Post-test			
		Mean	SD	Mean	SD
BEE intervention	Total score	51.28	12.14	58.28	11.8
Control	Total score	53.8	8.42	54.88	8.17

Table 6: Mean and Standard Deviation of Weight Loss

Group	Variable	Pretest			Posttest	
		N	Mean	SD	Mean	SD
BEE intervention	Weight	25	89.73	9.65	87.48	8.95
	BMI	25	33.76	3.72	32.88	3.44
Control	Weight	25	89.32	12.29	87.56	11.7
	BMI	25	34.12	4	33.4	3.62

**Table 7:** Analysis of Covariance for Effectiveness of BEE Intervention on Self-Compassion and its Components

	Source of Variation	DF	Mean Of Squares	F	P-value	$\eta^2$
Over identification	Pretest	1	44.74	4.055	0.05	0.079
	Group	1	38.708	3.529	0.066	0.07
	Error	47	10.967			
	Total	50				
Awareness	Pretest	1	86.074	10.496	0.002	0.183
	Group	1	1.686	0.206	0.652	0.004
	Error	47	8.201			
	Total	50				
Isolation	Pretest	1	27.614	3.666	0.062	0.072
	Group	1	110.751	14.705	0.000	0.238
	Error	47	7.532			
	Total	50				
Common humanity	Pretest	1	156.498	16.018	0.000	0.254
	Group	1	28.725	2.94	0.093	0.059
	Error	47	9.77			
	Total	50				
Self-judgment	Pretest	1	335.413	55.856	0.000	0.543
	Group	1	63.858	10.636	0.002	0.185
	Error	47	6.004			
	Total	50				
Self-kindness	Pretest	1	223.916	23.403	0.000	0.332
	Group	1	45.948	4.802	0.033	0.093
	Error	47	9.568			
	Total	50				
Total	Pretest	1	4381.912	56.084	0.000	0.544
	Group	1	1552.356	19.869	0.000	0.297
	Error	47	78.131			
	Total	50				

**Table 8:** Analysis of Covariance on Effectiveness of BEE Intervention on Self-efficacy

	Source of Variation	DF	Mean Of Squares	F	P-value	$\eta^2$
Self-efficacy	Pretest	1	3770.614	150.56	0.000	0.762
	Group	1	377.574	15.076	0.000	0.243
	Error	47	25.044			
	Total	50				

The results of Table 8 indicate that there is a significant relationship between self-efficacy and covariate (pretest) ( $P = 0.000$ ), and it can be concluded that there is a significant difference in self-efficacy between the intervention group and the control group with 99%

confidence. Hence, the null hypothesis is rejected and the researcher's hypothesis is confirmed. Therefore, the effectiveness of BEE intervention is confirmed with increasing self-efficacy.

The results of Table 9 indicate that there is no

**Table 9:** Analysis of Covariance for Effectiveness of BEE Intervention on Weight Loss

	Source Of Variation	DF	Mean Of Squares	F	P-value	$\eta^2$
Weight	Pretest	1	4742.987	477.303	0.000	0.91
	Group	1	2.582	0.260	0.613	0.005
	Error	47	9.937			
	Total	50				
BMI	Pretest	1	515.197	280.813	0.000	0.857
	Group	1	0.55	0.3	0.587	0.006
	Error	47	1.835			
	Total	50				

significant relationship between the dependent variable (weight loss) and the covariate (pre-test). Hence, the null hypothesis is accepted and BEE intervention does not affect weight loss.

### Discussion and conclusion

Due to the novelty of energy-based therapies in Iran and very little research in this field, no domestic and foreign studies were found that investigated the effect of bioenergy intervention on obesity. Therefore, it is not possible to compare these results with the findings of other studies.

According to the findings, the effectiveness of BEE intervention on increasing self-compassion is confirmed. To explain this finding, the characteristic of a person who has self-compassion includes being kind to oneself, paying attention, and understanding oneself instead of judging or criticizing his/her weaknesses and inadequacies. Acknowledging that all human beings are flawed, make mistakes, and engage in unhealthy behaviors is a common characteristic of all human beings. Mindfulness, in contrast to over-identification, leads to a balanced and clear awareness of experiences of the present and causes the painful aspects not to be ignored, and at the same time, not to occupy the mind frequently. Self-compassion, on the other hand, remains stable regardless of negative or positive circumstances in one's life. For example, regardless of whether

one loses weight or is overweight, unemployed or employed, or whatever happens, compassion for oneself remains constant (Albertson, Neff, & Dill-Shackleford, 2015). Self-compassion does not mean that one feels good about oneself out of pride, but rather attention to high ability to accept strengths and weaknesses at the same time. Similar research recently (Karimi, 2019) investigated the effectiveness of BEE on symptoms and compassion for patients with chronic pain. In this study, it was expected that with the techniques performed by these patients, the amount of compassion and love for themselves increased, but due to this, the amount of compassion did not change. Patients are focused on reducing pain rather than paying attention to themselves.

On the other hand, bioenergy has two vital functions: 1) in a state of equilibrium, increases life force, nourishes the body's cells, and strengthens their health; 2) provides a template on which the pattern of cell regeneration is formed. This is a fundamental approach that focuses on and improves individual capacities and abilities for self-improvement. All forms of energy-based therapy involve rebuilding the patient's energy field pattern, restoring balance, and restoring energy flow (Wolsko, Eisenberg, Davis, & Phillips, 2004). Optimal health can be achieved when energy flows freely in and around the body in a symmetrical and balanced manner. Illness occurs when the flow of energy is obstructed, disturbed,

imbalanced or asymmetric. Physical injuries, repressed emotions, and habitual patterns of negative thoughts disrupt the free flow of energy and cause energy imbalance. Energy imbalances, in the short term, can reduce vitality, limit recovery, and impair the function of cells, tissues, and organs. In the long run, energy imbalances can damage one's biological schema, disrupt one's cell regeneration pattern, reduce the body's ability to improve and cause chronic pain and disease (Goli, 2010). By facilitating the flow of energy through the removal of energy barriers, people who have experienced the use of bioenergy economy can experience a decrease in stress, blood pressure, and anxiety while increasing energy, life pleasure, and intensifying their sense of presence (Derakhshan, Mensheni, & Afshar, 2013). Based on another study, interventions based on the body-mind interaction, like bioenergy economy as care, integrated, and holistic approach, in addition to modifying cognition and biases, improve neuro-physiological psychiatric disorders such as sensitivity anxiety (Keyvanipour, 2018).

The results also confirm the effectiveness of bioenergy intervention on increasing self-efficacy. To more explanation, one of the problems of people with obesity is the reduction of self-efficacy. Self-efficacy is the perception of abilities to act in a particular situation and is the most important determinant of behavior. Self-efficacy refers to one's belief in eating in positive and negative emotional situations, physical discomfort, social pressures, and easy access to food. Because obesity is affected by diet, physical activity, and heredity, it can be reduced by a series of comprehensive interventions. Considering the effect of self-efficacy on weight and health of people and considering that self-efficacy is related to weight control, especially in three situations of social pressure, access to food, and experience of positive emotions in obese people compared to people with lower and normal weight (Navidian,

Kerman Saravi, & Imani, 2012), weight and nutrition should be considered in educational and counseling interventions. The training of the bioenergy economy approach increased flexibility and also the level of capital among subscales of self-efficacy, hope, reversibility, and optimism of "parents with children with behavioral disorders (Barzin, 2020).

The findings also show that BEE intervention does not affect weight loss. To explain, obesity has become a global epidemic that affects all age groups, all populations, and countries. To date, existing policies and interventions have not changed in this process, and this shows that innovative approaches are needed to prevent and control obesity. There are some indications that the obesity epidemic is a systemic problem, not a simple problem with a linear cause-and-effect relationship. What may be needed to succeed in obesity is a way to look at the whole system when making important decisions, observations, or changes.

In general, a combination of variables affects obesity; genetic variables explain a significant portion of obesity, and the other part is explained by behavioral variables such as eating, exercising, and psychological and environmental determinants. Therefore, various factors should be considered regarding the complexity of obesity and overweight. In weight management programs, the variables that are potentially important in weight loss and maintenance should be considered. Bioenergy economy is a method of meta-diagnostic, phenomenological-contextual, and evolutionary care. It is meta-diagnostic because it does not seek to analyze the content of the mind and injuries of the body and mind. It is a contextual and phenomenological method since it focuses on organizing the phenomenological context and expanding the sense of safety and cohesion in the body. Numerous pieces of evidence show the effectiveness and productivity of BEE therapeutic agents including relaxation, body awareness, body psychotherapy, and bioenergy healing methods.

Although many case studies since 2008 have responded quite positively to this economy, there are some methods and guidelines in the bioenergy economy that have not been experimentally tested (Goli, 2010).

Obviously, in such an extensive process with a variety of factors, a systemic approach to treatment must be repeatedly reviewed and evaluated to examine its final impact. Given the novelty of this treatment and being the first time it is used to treat obesity, and considering the effect of this therapeutic approach on self-compassion and self-efficacy, and considering that basic weight loss requires a long-term procedure, it may be possible to observe the effect of this treatment on weight loss by following this variable in the future. Therefore, the ineffectiveness of BEE intervention on weight loss is explained.

### **Concluding remarks**

The bioenergy economics intervention can be effective in weight loss by improving self-compassion and self-efficacy both directly and indirectly. As noted, the bioenergy intervention of this study is based on the BEE protocol. The educational and clinical program included methods for biorhythm modification, environmental adjustment, cognitive-behavioral interventions (lifestyle modification, health belief change, relaxation techniques), and spatial biofield diffusion (alignment, contact/non-contact manipulation) (Goli, 2010). The basis of energy-based therapies is the transfer of information to cells and tissues. These procedures work through biofield (auras), energy centers (chakras), and energy pathways (channels or meridians). Due to bioenergy balance and external/internal/transpersonal openness, it activates an internal improvement process (psycho-neurological-immunological change) and increases the coordination of energy patterning. Alignment restores the free movement of energy and allows energy to shift from areas of surplus energy to

areas of scarcity and leads to energy purification and releases trapped energy and energy blocks of previous patterns (Goli, 2010). In this approach, there is no clear boundary between diagnosis and treatment and life and treatment. Bioenergy economy enhances physical, energy, mental, and spiritual balance, increases one's adaptation to the environment, and treatment is a by-product of this process. Pathology in this approach is not local and disease-oriented.

Treatment is the result of lifestyle modification, alignment of different bio-fields with each other and with the all-encompassing field of the individual with the therapist, and alignment of bio-fields with his all-encompassing energy field and cosmic consciousness (Goli, 2010). In this model, what determines the human condition is a flow of interaction between consciousness, information, energy, and matter in interpersonal, interpersonal, and transpersonal relationships. In this model, the disease is caused by a disturbance in the flow of energy information, and it is the improvement of the voluntary flow of energy information that can reorganize the biomarker flow and coordinate the organism. Each of the improvement methods can apply this practice from a specific aspect and become synergistic if used on a common clinical and physiological basis (Goli, 2010).

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