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## COMPLEX SPA PROGRAM EFFECT ON OVERWEIGHT WOMEN'S PHYSICAL CONDITION AND WELL-BEING

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### ABSTRACT

The aim of this research is to study the effect of a two-week SPA program that includes an appropriate diet and motor regime, anti-cellulite and underwater shower massage, relaxation techniques, and a healthy lifestyle lecture course on the physical condition and well-being of overweight women. The research was done among 25 women with a mean age of 44.8 years ( $\pm 4.6$ ). In a sanatorium environment, they were enlisted in a SPA program for weight reduction. We used WHO-5, Well-being Index, and anthropometric measurements (waist, hip, weight, BMI) in order to assess the effect on the participants. The testing was done at the beginning and at the end of the program. The results showed that regardless of the short duration, the SPA program we invented helped in weight reduction efforts and also increased the well-being of the researched individuals. This makes it adequate, eligible, and useful for application in various SPA and Wellness centers.

**Key words:** motor and diet regime, massage techniques, relaxation techniques, healthy lifestyle

### INTRODUCTION

Human health is a dynamic state of physical, mental and social well-being. Good health is a source of economic and social stability and an important condition for well-being and life quality. In recent decades, a steady trend has been the number of overweight and obese people to grow worldwide. According to national statistics data, half of the population of Bulgaria is fitting in this category; there is a tendency to increase weight at a mature age (1).

The development of obesity as a complex, chronic status depends on two large groups of factors: external and internal. The first one includes ecological, social and cultural elements of the environment; the second consists of some biological and psychological components. In the essence of all eating disorders usually lies a

combination of factors from the above-mentioned groups. It may be very difficult for individuals suffering from depression, anxiety and eating disorders to control food consumption and/or to adhere to adequate physical activity (2). Food is often a coping mechanism for sadness, anxiety, loneliness, and disappointment (3); it may, however, lead to momentary relief, but not in the long time (4, 5).

So far, the results of scientific research in this area are rather contradictory. On the one hand, obesity is associated with an increased health risk, and weight reduction decreases the risk of chronic non-communicable diseases (6). On the other hand, the studies indicate a very small percentage of those who, after successfully losing weight, manage to retain it in long term perspective (7). Many recently obtained research data have shown the health risk is greater if reduction spells gain alternate with periods of weight (8).

The adult population of Bulgaria is characterized by hypertrophic obesity, fat cells increase in

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volume, however, cells number remains the same (9).

Women in pre- and menopause space of time are especially vulnerable to easily amass excess weight. If one does not take due measures, this may get out of control. Concomitant structure cellulite changes have an additional negative impact on the emotional instability, typical for the period. These factors usually lead to a loss of self-esteem and confidence, de-motivation and depressive mood.

In order to prevent such undesirable consequences of excess weight during this time-period, we have developed a complex program including not only physical but also psycho-emotional effect.

### THE PROGRAMME

**I. Dietary regime.** It includes carbohydrates reduction (100-150 g daily), fat restriction (about 40 g per day) and protein (1 g per kg ideal weight). The stress is put on complex carbohydrates, at the expense of the simple, these that stimulate the body insulin release and create conditions for the fat deposition. Unsalted nutrition ensures free water passage through the cell membrane, which prevents body swellings. High consumption of vegetables provides the necessary vitamins, minerals, antioxidants and fibers. This regime includes three main meals and a light afternoon snack, as desired. Rhythmic intake of food, which could be immediately used for energy, activates fat burning (10). The intake of larger water amounts helps to reduce the body fat; it regulates the interaction of the kidney-liver function system, stimulates the muscles' activity, and keep the organism out of dehydration and subsequent fluid retention (11).

### II. Motive mode.

It is appropriate, to individuals with obesity and good physical condition, in generally, to apply a motor program including 30-minute daily gymnastics, well-balanced walking, sports such as swimming, cycling, etc. (12). Blood circulation improvement could be achieved through aerobic loading accompanied by frequent rests, breathing exercises in a wide variety, combined with elements of yoga and stretching techniques (13). **For the SPA program aims we prepared an exercise set containing elements of Pilates,**

**stretching and yoga, and it was performed every other day by gradual increase of its duration from 30 to 45 minutes.** In order to improve oxidation processes and to activate metabolism, we included daily walking practice and again gradually increased the exercise duration – from 40 to 60 to 90 to 120 min.; it was performed on a special health path, and in the evenings there were 30-45 min. folk dances, at will.

### III. Visualization

This is a skill the Self alone to regulate creation of representations, complete sense perceived images, such as visual, tactile, sonic, proprioceptive, kinesthetic and other emotions and sensations. The mechanism by which it affects athletic activity and sportive outcome is explained by Jacobson due to the so-called **psychoneuromuscular theory**: when we imagine a certain movement, the impulses produced in the brain centers responsible for its execution are one and the same as these generated during the actual performance of this certain movement. In sports, visualization is used for different purposes, but most often to refine techniques, concentration, strategies, confidence (14 -16). Visualization has a cognitive and motivating function (17). The motivation function is associated with the perceptions of achieving goals, regulating tension masterly performance. Visualisation skills are correlated with performance (18); they improve mental tension regulation and anxiety levels (19); they improve self-esteem (20), confidence (21) and motivation (22).

In our experiment, we relied on motivational function of visualization, as mentioned already. Every day, in 20 minutes duration, in a state of body relax, each participants visualized her own image as perceived in accordance with her ideal weight and vision, each woman was free from all restricting thoughts and confining emotions, each participant's soul was full of mind peace, calmness and confidence.

### IV. Anti-cellulite massage

Cellulite affects up to 85-90 per cent of post-puberty women of all races (23). Studies in Bulgaria show close to these prevalence rates (24). Cellulite accumulations are localized in the hips, thighs and abdomen, to the greatest extent,

and less often they can affect the area of the lower legs and the hand backs (24-26). The set of means for its treatment, in addition to diet, local pharmacological agents, and physical activity, includes massage of problem zones (27). In respect to the overweight individuals we observed, having in mind the age and hormonal changes that occurred, we considered the importance to include a 30-minute anti-cellulite massage, which was applied to the hips, waist and thighs.

#### V. Underwater shower massage.

It is a combined water-healing procedure suitable in case of obesity, gout, joint-muscle-tendon diseases, and diseases of the peripheral nervous system. This procedure is a hybrid between bathtub and shower-bath. The water temperature is comfortable (35-37 ° C). The procedure duration is 12-30 min. The procedure provides both, pleasure and recovery. So it becomes a part of the SPA and Wellness concept (28).

#### VI. Discussion and sharing of healthy lifestyle practices

Throughout the period of the team's fieldwork, these discussions and conversations took place every day for at least 60 minutes. They included issues concerning nutrition, motive regime and emotional balance techniques.

#### METHODS

The aim of this research is to experiment a two-week SPA program (in sanatorium conditions), accompanied by an appropriate diet and exercise regime, anti-cellulite and underwater shower massage, relax techniques and lecture course for a healthy lifestyle, and to study its effects on physical status and mental well-being level of overweight individuals.

Under observation were 25 women, average aged of 44.8 years ( $\pm 4.6$ ) with overweight and pre-obesity (BMI criteria), wishing to reduce their excess weight in a healthy way. All participants were clinically healthy in pre- or menopause space of time.

#### Research methods

*To assess the effect of the SPA program, all participants were tracked the following indicators at its start and end:*

#### 1. Anthropometric measurements and well-weight index

All anthropometric measurements were executed by the usage of a standard methodology developed by R. Martin & K. Saller (1955-1966). Some measurements of standing body height and body weight were made and the BMI was calculated, on their basis. Using a cm tape, accurate to 0.5 cm, the following body circumferences were measured: waist, hips and right thigh.

The circumferences give idea about the accumulation points of adipose tissue.

#### 2. Mental well-being: Bulgarian version of the Well-being Index (WHO-5) questionnaire.

Well-being Index (WHO-5), version 1999 (29) was first introduced in 1998 in Stockholm as part of a project to measure subjective well-being in primary healthcare service. WHO-5 has been validated in numerous studies (30). The tool is a reliable indicator of emotional functioning.

#### RESULTS

Under the influence of the applied SPA program, there were obtained some slight to medium reductions of: waist circumference (reduced by 2.03 cm on average), hip circumference (reduced by an average of 1.39 cm), hip (reduced by an average of 1.79 cm), weight (reduced by an average of 2.94 kg) and respectively the BMI was reduced by an average of 1.13 (Table 1.). All indicators under observation manifested a statistically significant improvement. A comparative analysis with Wilcoxon's two-related sample comparison criterion was applied to establish the level of individual indicators studied before and after the experiment. It registered a statistically significant change in the direction of improvement in all variables: *weight* ( $Z=-4.290$ ;  $p=0.001$ ), *waist* ( $Z=-4.297$ ;  $p=0.001$ ), *BMI* ( $Z=-4.307$ ;  $p=0.001$ ), *hips* ( $Z=-4.294$ ;  $p=0.001$ ), *thigh* ( $Z=-4.324$ ;  $p=0.001$ ), and *mental well-being* ( $Z=-4.315$ ;  $p=0.001$ ).

There was a significant difference between the average assessment of the subjective well-being at the entry and at the exit of the SPA program. The low values got at the beginning could be explained by the fact that excess weight, combined with emotional instability and a tendency to depression due to hormonal changes in the time-period of pre- and menopause, the busy active everyday business life, the family

cares and its organization just before the start of the program create a feeling of tension and low subjective well-being. The second result was got at the end of the program; during it a weight reduction and body circumferences were registered, and that happened after a period of detachment from the daily work and family

rhythm; the result contains much higher values (**Table 1**). The increase in feeling for a mental well-being at the end of the experiment was probably due to satisfaction with goals achieved and improved self-esteem because of the bettered physical condition.

**Table 1.** Mean variables for whole group

Variables	N	Before		After	
		Mean	SD	Mean	SD
Weight (kg)	25	69.12	5.20	66.18	5.12
BMI (kg/m <sup>2</sup> )	25	26.58	0.70	25.45	0.71
Waist (cm)	25	78.46	5.22	76.43	5.25
Hip (cm)	25	104.36	9.20	102.59	9.04
Thigh (cm)	25	72.69	6.62	71.30	6.70
Well-being	25	50.67	11.11	66.17	9.51

## CONCLUSION

The results obtained show that although short-termed, the SPA program, developed by us, has a positive effect not only on weight reduction, but also on the mental well-being level of the participants, involved. The improvement rates are healthy and gradual and each of the women, as far as getting a sufficient motivation, good will and priority organization, after the acquired knowledge and personal experience from the SPA program, could continue to improve her own results at home and at work. Such programs, using the expertise of well-trained specialists team-working, can be implemented under appropriate conditions in any SPA and Wellness Center, certified and registered in the National Tourist Register. Bulgaria is a country, rich in natural sources: mild climate, mineral waters, medicinal plants, oil-bearing rose, healing mud, wonderful varieties of wines, Bulgarian yoghurt and bee products. Natural products and resources, combined with a creative approach to develop and present health-improving programs, are important factor to turn our country into an attractive SPA and Wellness destination and niche tourism. All this gives us a chance to make a significant contribution to the implementation of the WHO Health 2020 Strategy.

## Note

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