

COMPARISON OF WHOMEN'S BODY PARAMETERS WHO PARTICIPATE IN SPORTS AND THOSE WHO DO NOT, BETWEEN THE AGE OF 30-50 YEARS

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(Original scientific paper)

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Abstract

Objectives: Aging is associated with various changes in the body composition, including changes in weight, loss of muscle mass, and increased fat mass. This study differs in the composition of body parameters between women who engage in sports and those who do not. Based on current literature, observational studies on obesity and high waist circumference show most convincing results for an association with frailty. The independent role of muscle mass and muscle fat infiltration remains unclear, mainly due to a lack of studies and a lack of accurate measurement of body composition by computed tomography or MRI. Weight loss and exercise training intervention studies can be of benefit to frail older adults. Study designs: Two groups were included in the study. Group I (15) includes women aged 30-50 who engage in sports activities, Group II (15) includes women who are randomly selected and who are part of physical therapy. The data obtained was grouped according to the questions posed and the statistical processing is done with the SPSS program for calculating statistical parameters: structure, average size and measures of variability. Verification testing is done with the degree of reliability for 99.7% respectively with the degree of error of $p < 0.01$ and $p < 0.05$ with reliability of 95%. Results: In the measurements made, we have concluded that women who have developed sports activity have better performance in all parameters, compared to those who do not exercise. In general, all body parameters in the Kango group were better compared to the Fizio group. Analysis of our results shows that 36.7% of all women were overweight. In the group that practiced Kango, the number of overweight participants was higher. We do not have data on how long the Kango group exercises this sport and what was the initial weight when they started the sport. Therefore, lengthy studies are required to observe the impact of this sport on body parameters. Conclusion: According to the statistics presented above, as well as the measurements that have been made, we can say that women who have developed sports activity have better performance in all aspects, compared to those who do not exercise. Sport activity, increases body performance, increases muscle mass, removes fatty and toxic products, improves visceral undyrna, reduces mental stress, increases respiratory capacity, helps in better nutrition, relieves muscle and skeletal pain, improves blood circulation and lymphatic fluid, speeds up metabolism, reduces pre- and post-menstrual pain in women, improves skin nutrition and removes harmful products. Continuous BMI measurements and early diagnosis of overweight are very important.

Key words: BMI, sport activity, kango jumping, obesity, fizio

Introduction

Overweight and obesity has become a serious public health problem worldwide. Currently, more than 35% of men and close to 40% of women are overweight or obese (WHO Obesity 2015) Although weight increase occurs for all ages in both developed and developing countries, such increase is the most rapid for people between 20 and 40 years of age (Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al.,2013)

The recommended exercise prescription for most adults is typically a regular moderate-intensity continuous exercise program, with ≥ 30 min·d⁻¹ on ≥ 5 d·wk⁻¹ for a total of ≥ 150 min·wk⁻¹ or an alternative of vigorous exercise for 75 min or more per week, for improving and maintaining physical fitness and health (Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee IM, et al.,2011).

However, the inactive nature of sedentary individuals and the “lack of time” excuse tend to prevent people from being engaged in regular physical activity (Hardcastle SJ, Ray H, Beale L, Hagger MS, 2014).

In the United States, the Center for Disease Control and Prevention statistics show that more than 31% of obese adults reported a doctor diagnosis of arthritis compared with only 16% of no obese adults (National Center for Chronic Disease Prevention and Health Promotion. Arthritis related statistics 2006).

The mechanism by which obesity causes lumbar back pain is poorly understood, but the contribution of both mechanical and system factors is likely (Like M, Solovieva S, Lamminen A, et al, 2005). Direct mechanical stress on the intervertebral discs and the indirect effects of atherosclerosis on blood flow to the lumbar spine are suspected to be mechanisms through which obesity affects the discs, leading to subsequent low back pain. Further research to elucidate the exact mechanism is needed (Hangai M, Kaneoka K, Kuno S, et al, 2008).

A recent systematic review identified maternal pre-pregnancy overweight as a significant risk factor for childhood overweight (Weng SF, Redsell SA, Swift JA, Yang M, Glazebrook CP, 2012). Children of mothers who were overweight before pregnancy were 1.37 times more likely to be overweight at 3 years of age than children of normal weight parents (Hawkins SS, Cole TJ, Law C, 2008). These trends and risks have increased interest in antenatal interventions which focus on women's eating, physical activity, their impact on gestational weight gain and GDM (Hill B, Skouteris H, Fuller-Tyszkiewicz M, 2013). Strong evidence exists on the benefits associated with physical activity during pregnancy including an increase in functional mobility and a reduction in nausea and vomiting (Warburton DE, Nicol CW, Bredin SS, 2006).

A high intake of fruit and vegetables is one of the cornerstones of a healthy diet and has been recommended to the general public to reduce the risk of cardiovascular diseases and cancer, which are the two most common causes of premature death worldwide and which accounted collectively for 25.5 million deaths [in](#) (GBD 2013 Mortality and Causes of Death Collaborators, 2013).

Considered the World's lowest impact shoes, Kangoo Jumps rebound shoes help reduce the impact of athletic activity up to 80% thanks to the revolutionary Impact Protection System (IPS), a kind of mini trampoline included on the shoe. It was specifically designed to provide a low impact alternative for individuals unable to participate in high impact activity due to issues or concerns about the immediate and long-term effects of repetitive pounding on the body's joints.

Kangoo Jumps rebound shoes are the most convenient and versatile sport article on the market today. The shoes provide an extensive safe and effective method for muscular development and well-rounded health. Adaptable to multiple sports applications as a cross-training tool, they can be used for any activity on any sneaker-friendly surface for running, jogging, martial arts, boxing, dancing, sport specific conditioning, aerobics, unstable muscle conditioning exercise, circuit training, interval training, plyometric training and rehabilitation. The revolutionary concept of Kangoo Jumps allows total freedom of movement. Users can enjoy them in varied exercise surroundings while traditional rebounders require the user to exercise in place. Easily transportable, they are usually referred to as “a gym in a bag”, as they satisfy all requirements for a full body workout making training fun and enjoyable. This versatile high-quality Swiss designed product is easy to use for anybody, any age (from 6 to 92 years-old), anywhere, anytime and for any fitness level. Our fitness programs, outlined at the end of this manual, incorporate rebounding into several popular class formats (Denis Naville, Jill Boyer-Holland, Mika Naville, 2016).

Purpose

The aim of the research is to show the effectiveness of sports activity in women who improve their body parameters.

The main goal is to determine the percentage of body parameters between women who exercise and those who do not exercise

The secondary goal is to compare the results and give recommendations on the promotion of physical activity in improving their health and mental condition.

Hypotheses

1. Sport activity is one of the main elements of the regulation and maintenance of body parameters.
2. The level of bodily pain is lower in women with active sports activity.

Material and Methodology of Work

For the study and realization of the work, the apparatus for informing the bodily parameters Bioimpedance scale was used, through which the measurement of women who exercise and those who do not exercise was performed.

The research was conducted at the physiotherapy clinic "Physioactive" in Suhareka, and the clinic for physical therapy and rehabilitation "kanngo jumping" in Suhareka

The parameters shown by the Bioimpedance scale are:

1. Age
2. Gender
3. Length
4. Weight
5. MBI- Body mass index
6. Body Fat
7. Muscle
8. RM Kalc
9. Visceral Fat

Statistical analysis

Data processing was done with SPSS. Statistical parameters are calculated from the index structure, arithmetic mean, standard deviation (SD), the value min. and max. The data was tested by t-test and Chi-square test, verification test is done 95% confidence level and 99%, respectively $P < 0.05$ and $P < 0.01$

Total number of respondents is 30, between the age of 30 to 50 years.

Of 30 patients, 15 are women who do Kangoo sports activities that are part of the center for Kangoo Jumping physical therapy (control group) and 15 other women are randomly selected, women who have a lower back pain and who are part of the treatment center for physical therapy in Fizioaktiv clinic (experimental group).

Results

The research included 30 women

1. 15 women active sport- Kangoo jumping
2. 15 women passive sport – who not engage in sport but they are doing the physiotherapy

Discussion

In our group research, we note that in Group I the average age is 37 years old, height 1.66 m, weight 70.42 kg, BMI 25.72, body fat 34.68, muscle 28.28, RM kalc 1451.53, Y. visceral 6.

In Group II the average age is 42.47, height 1.64, weight 77.04, BMI 27.813, Body fat 39.987, muscle 25.224, RM kalc 1473.07, y. visceral 8.6.

In addition to the average age where in Group II we have the highest average age in other values we have differences in values, where Group I has shown that it has better performance.

In general, all body parameters in the Kangoo group were better compared to the Fizio group.

Analysis of our results shows that 36.7% of all women were overweight. In the group that practiced Kangoo, the number of overweight participants was higher. We do not have data on how long the Kangoo group exercises this sport and what was the initial weight when they started the sport. Therefore, lengthy studies are required to observe the impact of this sport on body parameters.

The PubMed, EMBASE, PEDro, and Cochrane Library databases were searched from January 2009, updated to 22 June 2015, using the following groups of search terms: (i) 'physical activity' and 'exercise'; and (ii) 'bone', 'bone health', 'bone strength', 'bone structure', 'bone metabolism', 'bone turnover', and 'bone biomarkers'. Searches and screening were limited to systematic reviews or meta-analyses of studies in females and published in English. Our final analysis included 12 articles that met the inclusion criteria. Combined-impact exercise protocols (impact exercise with resistance training) are the best choice to preserve/improve bone mineral density in pre- and postmenopausal women (Jincheng Xu, Giovanni Lombardi et al 2016). This study looks at physical activity and specific exercises related to performance and your overall wellbeing.

This study aims to determine the effects of aerobic or resistance training on activity-related energy expenditure (AEE; kcal·d(-1)) and physical activity index (activity-related time equivalent (ARTE))

following weight loss. It was hypothesized that weight loss without exercise training would be accompanied by decreases in AEE, ARTE, and no training physical activity energy expenditure (no exercise activity thermogenesis (NEAT)) and that exercise training would prevent decreases in free-living energy expenditure. Hundred and forty premenopausal women had an average weight loss of 25 lb during a diet (800 kcal·d(-1)) of furnished food. One group aerobically trained 3 times per week (40 min·d(-1)), another group resistance-trained 3 times per week (10 exercises/2 sets × 10 repetitions), and the third group did not exercise. (Gary R Hunter, Gordon Fisher, William H Neumeier et al, 2015). Conclusion in this study is: exercise training prevents a decrease in energy expenditure, including free-living energy expenditure separate from exercise training, following weight loss.

Obesity is a multifactorial disease with increasing incidence and burden on societies worldwide. Obesity can be managed through everyday behavioral changes involving energy intake and energy expenditure. Concerning the latter, there is strong evidence that regular exercise contributes to body weight and fat loss, maintenance of body weight and fat reduction, and metabolic fitness in obesity. Appropriate exercise programs should ideally combine large negative energy balance, long-term adherence, and beneficial effects on health and well-being. Endurance training appears to be the most effective in this respect, although resistance training and high-intensity interval training play distinct roles in the effectiveness of exercise interventions. With weight regain being so common, weight loss maintenance is probably the greatest challenge in the successful treatment of obesity. There is an established association between higher levels of physical activity and greater weight loss maintenance, based on the abundance of evidence from prospective observational studies and retrospective analyses. However, proving a causative relationship between exercise and weight loss maintenance is difficult at present. Exercise has the potential to alleviate the health consequences of obesity, even in the absence of weight loss. All in all, exercise constitutes an indispensable, yet often underestimated, tool in the management of obesity. (Anatoli Petridou et al. 2019).

Conclusion

According to the statistics presented above, as well as the measurements that have been made, we can say that women who have developed sports activity have better performance in all parameters, compared to those who do not exercise.

Spot activity, increases body performance, increases muscle mass, removes fatty and toxic products, improves visceral undyrna, reduces mental stress, increases respiratory capacity, helps in better nutrition, relieves muscle and skeletal pain, improves blood circulation and lymphatic fluid, speeds up metabolism, reduces pre- and post-menstrual pain in women, improves skin nutrition and removes harmful products.

Food correction is one of the essential elements that helps in a better performance, including the consumption of plant prophecies, boiled fruits and vegetables, undigested foods, cereals, products that contain protein and do not contain sugars, consuming as much water as possible and not the juices that contain sugar. Food control and regular intake of protein and vitamins affect the improvement of human health.

We recommend that sports activity be promoted in addition to physical therapy, as based on this study, we have noticed significant differences in each value.

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