

THE MOOD IN POSTMENOPAUSAL WOMEN AND SPORT

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Abstract

Menopause is a natural physiological event that accompanies approximately one third the life of a woman, in most cases causing alterations and frequently pathological symptoms varying from woman to woman. Psychologically, the arrival in this stage of life is often associated with rethinking that makes the woman very restless, confused, and emotionally fragile. To date, there are few data that can demonstrate a causal connection between level of depression and menopause. The mood swings that occur during menopause, however, depend not only on hormonal changes but are also influenced by social stressors. The present study wanted to approach the mood in post-menopausal women and the possible positive social role of physical activity on mood's level.

Key word: menopause, stress, mood, sport

Introduction

The arrive of menopause in a woman's life marks the end of her fertility. This phase of life occurs around 45-50 years and, since today the average life expectancy for a woman is very close to 90 years, more than a third of a woman's life coincides with the menopause.

The menopause is associated not only with the disappearance of fertility and the absence of female hormones, but also with a variety of disorders such as vasomotor problems: sudden and severe heat sensations defined flushing, palpitations, excessive sweating, increased heart rate and body temperature, and associated increased risk of heart attack after 65 years.⁽¹⁾

Other problems are related to sleep disorders, such as insomnia and night sweats. It is also associated with emotional distress and mood changes, decreased ability to memorize and there is generally a greater difficulty in concentration ⁽²⁾.

There also is a decrease in muscle tone and frequently arises osteoporosis ⁽²⁾.

Women often address their issues toward pharmacological therapies and underestimate the possibility of less invasive remedies to improve and combat these problems⁽²⁾. Among these, the most important are proper nutrition, elimination of smoking and the practice of sport⁽²⁾.

The aim of our research is to evaluate how the sport could exert a positive impact on both the maintenance of body weight and the mood.

For this purpose, we monitored for four weeks the body weight and the mood's level of .a group of postmenopausal women performing aerobic activity.

Aerobic physical activity is capable to induce improvements in the cardiovascular and respiratory systems, unlike a type work anaerobic where a significant increase of blood lactate is observed⁽²⁾. This is important to assess because recent data ⁽³⁾ show that high concentrations of blood lactate influence positively the

excitability of primary motor cortex and negatively attentional processes involving the prefrontal cortex ⁽⁴⁻⁹⁾. Therefore, the choice of a proper sport in terms of intensity (aerobic or anaerobic) is important, because it affects differently the frontal lobe, with different effect on cognitive domains ⁽¹⁰⁻¹²⁾.

We used the Profile of Mood States (POMS) test, created in 1939 by Douglas M. McNair, Maurice Lorr and Leo F. Droppleman, to evaluate the mood's level since is a quick and simple method to identify and quantify specific affective states.

Materials and methods

Twenty-four postmenopausal women, aged between 55 and 65 years, took part in the research. These women were randomly divided in two groups: a first group of 12 subjects practiced sports (experimental group) and a second group of 12 participants did not practice any sport activity (control group).

The experimental group was trained twice weekly for four weeks with an aerobic exercise having an intensity of about 2/3 of maximal aerobic power and a duration of 40 minutes. The exercise consisted in pedaling on a cyclergometer with increasing resistance until the heart rate reached the value corresponding to the programmed aerobic power.

In order to investigate the psychological variables on which sport was able to hack we used the Profile Of Mood States (POMS) test. The version used in the present study is the Italian adaptation of the original test performed by Farnè Sebellico and Coral in 1989⁽¹³⁾. POMS measures six factors and six mood states: Tension-Anxiety (T), Depression-dejection (D), Anger-hostility(A), Vigor-Activity (V), Fatigue-inertia (S), Confusion-Bewilderment (C). The Total Mood Disturbance (TMD) score was calculated by subtracting the V score from the sum of scores for the other dimensions.

The test is in form of a questionnaire consisting of 58 adjectives and attributive phrases that are rated by subjects on a 5-point scale (from 0 to 4); the subjects must choose the intensity with which they have been affected by that particular mood in the last week.

The six factors or items are especially useful in evaluating subjects with psychological disorders or stress; the test, when used in normal individuals, is a sensitive measure of the effects of various experimental conditions.

The test was administered to both experimental and control groups, at the beginning of the study and four weeks later, at the end of the training session.

The data of POMS obtained for each subject were analyzed as mean values and compared both for each scale for that session.

Results

The two groups of postmenopausal women, experimental and control group, show initial values almost similar for all the items covered by the test.

However, after four weeks of aerobic motor activity, having an intensity of about 2/3 of maximal aerobic power and a duration of 40 minutes, the obtained results show significant differences.

The control group, as shown in Fig. 1, do not show any improvement of their mood in the item examined by POMS.

While in Figure 2 it is possible to observe the improvements obtained by the experimental group. The items T (tension-anxiety), D (depression-dejection), A (anger-hostility), S (fatigue-inertia), C (confusion-bewilderment) show, at the end of the aerobic training, a significant reduction in the values that initially were high and similar to the group of sedentary women. Coherently, the item V (vigor-activity) increased significantly at the end of training.

Figure 3 illustrates the values of total mood disturbance score (TMD), measured before and after the physical training; as can be seen, the control group do not show significant differences, while the experimental group exhibits a significant improvement ($p < 0.001$) at the end of training.

Conclusion

The assumption according that physical activity can affect mood states in post-menopausal women⁽²⁾ has been confirmed.

The practice of sport has played a positive role in broad-spectrum, not only on the physical parameters, as well demonstrated in the literature^(14,15), but also a psychological level.

This may be possible by interaction of important structures that appear to be essential for both motor and psychological tasks, as the cerebellum⁽¹⁶⁻²⁰⁾ which plays a strategic role not only in control and learning of movements but also in regulation of several cognitive domains⁽²¹⁻²⁹⁾.

The present data clearly demonstrate the positive role of a regular practice of aerobic physical activity⁽³⁰⁻³²⁾ in postmenopausal women since, from on the one hand, is able to allow the maintenance of a good fitness (body weight, bone density, etc.) and, from the other hand, has a positive effect on mood, so relieving unpleasant sensations with a negative impact on the management of personal and interpersonal relationships.

Menopause can not and should not be seen as the end of femininity, but rather the beginning of a new phase of life of any woman, which includes learning to control different interests in a balanced way to manage their potential energy up to the achievement a new balanced well-being through the sport.

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Fig. 1 Results of POMS of Sedentary Team

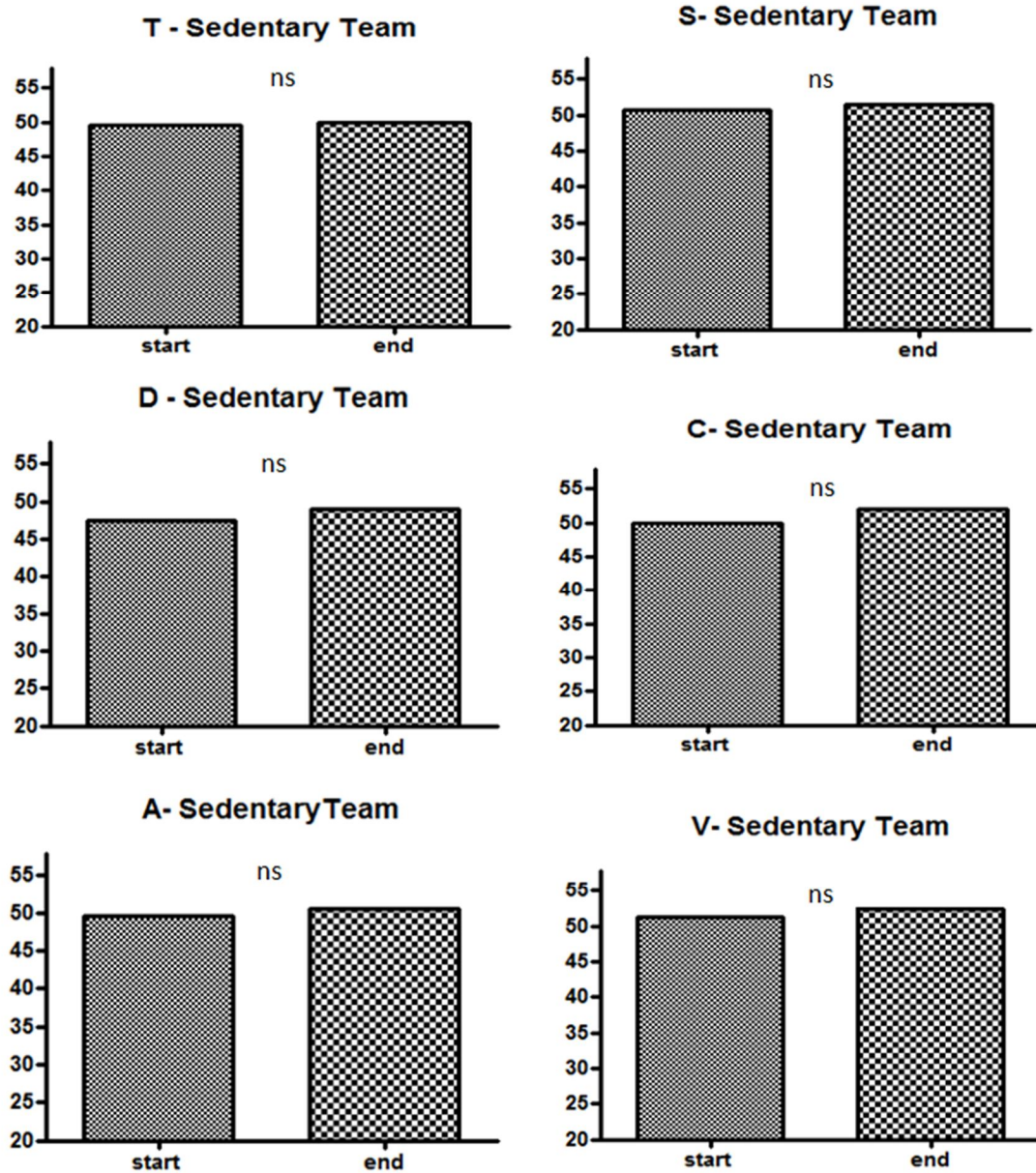


Fig. 2 Results of POMS of Sports Team

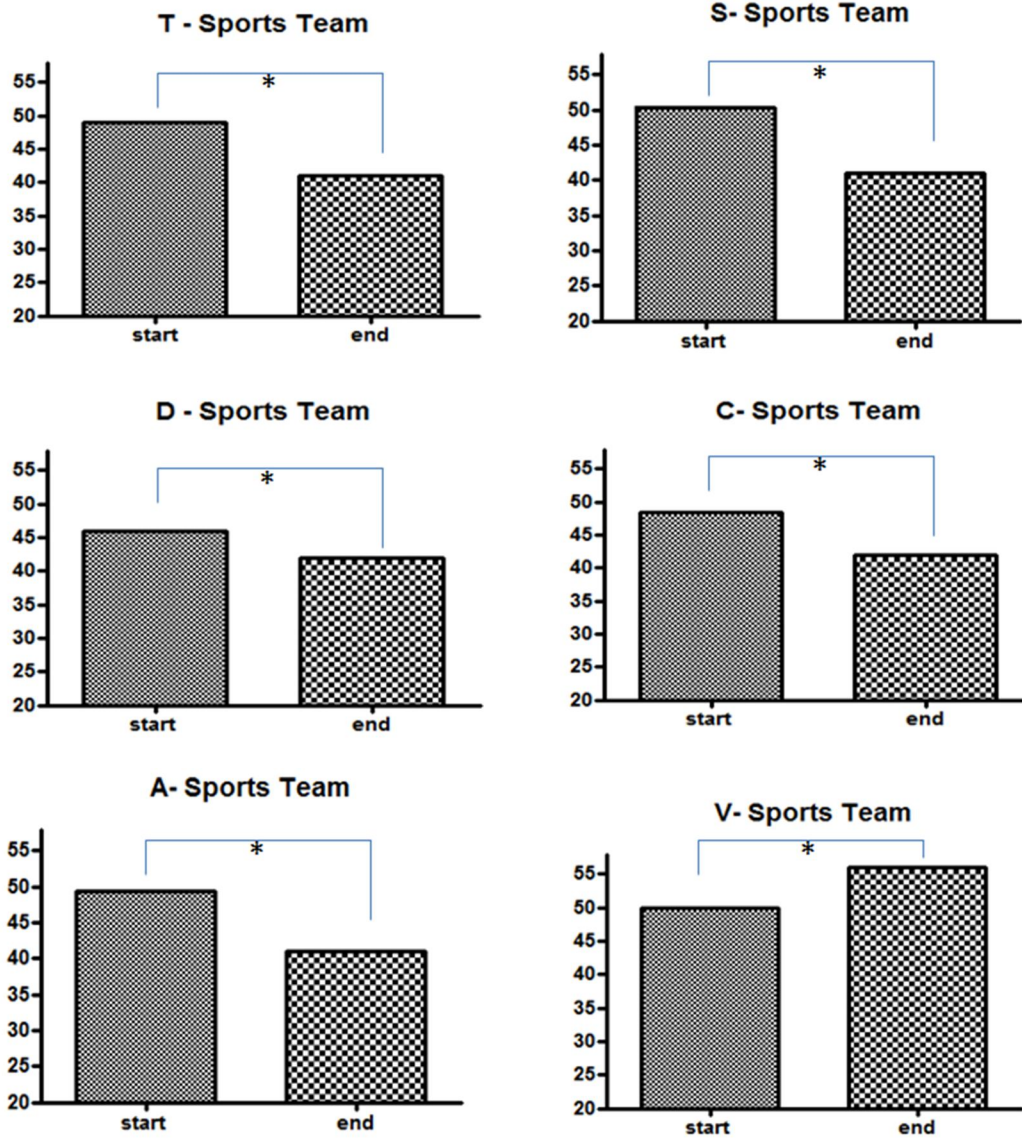


Fig. 3 Results of the TMD of the POMS

