


BIOENERGETIC EXERCISES AND OTHER PRACTICES OF BODY AWARENESS: THE EFFECT ON ENDURANCE-SPORT ATHLETES AFTER 8 WEEKS OF PRACTICE

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Summary

Abstract	4
Background	6
Research Hypothesis	7
Timeframe	8
Methodology	8
The sample	9
The eight-week training	9
The expected results	10
Bibliography	13

Abstract

Bioenergetics is a way of understanding personality through energetic processes, that is the production of energy by breathing, by the metabolism and the discharge of energy through movement. According to Lowen and other doctors, psychologists, and psychiatrists, the mind and body can influence each other: what you think influences how you feel and vice-versa. Thinking and feeling are deeply influenced by energetic factors. Chronic tension and rigidity reduce vitality and lower energy. Stiffness is due to prolonged periods of stress, which the organism faces without any possibility of removing the excess tension.

Bioenergetics works may comprehend exercises, which help people come in contact with their chronic tensions and learn how to release them using the proper movements. People who practice these kind of exercises experienced some advantages in their amount of energy, in their mood, and in their performances (at their job or in other activities). These exercises also help improve posture, allow for deeper breathing, and increase self-esteem. However, empirical research on the impact of different types of bioenergetic exercises on adults in general, and especially on athletes, is still insufficient.

The study is a small step towards filling the gap. We analyzed the effect of the bioenergetics exercises and of some mindfulness and yoga techniques on the reduction of the physical and mental stress levels. This produced an improvement of athletic performances, of general health conditions, of mood and of some important parameters (Heart Rating, VO2 Maximum, aerobic strength) which are fundamental for the effort required to participate in endurance sports such as running, cycling, triathlon and which also caused a reduced risk of injury. In particular, this pilot study used a mixed method approach, combining a qualitative questionnaire with a pre-test and post-test experiment over two periods, with a control group, in order to understand how an eight week training period, including bioenergetic exercises, yoga, and mindfulness exercises can decrease stress levels, improve joint flexibility and influence health and wellness in a cross-section of professional and recreational athletes.

The preliminary results suggested that the training participants experienced a higher level of body awareness, a better capacity to handle the stress and the emotional factors of competition, as well as declaring a lower perceived effort during training and competition. However further research is needed in order to better understand the relation between bioenergetic exercises with other psycho-physical practices and the competitive performances.

Keywords: bioenergetic, stress, qualitative research, pilot study, mixed method

Background

Bioenergetic exercises are known as a practice to increase the awareness of the body, joint mobility, and to decrease tensions and physical stress, increase the vitality of the organism, and improve breathing.

The exercises, developed over more than 20 years of therapeutic work on medical subjects, help to reduce physical tensions. The practice of the bioenergetic exercises help to reach a better self control, with all that comes with it - an increase in vitality, deeper breathing, increased awareness, self confidence, and self expression.¹

The same, and even more, can be said about yoga, about which we can find many publications dealing with its physical and mental benefits in sport²⁻³⁻⁴⁻⁵⁻⁶, and about the practice of mindfulness, about which many studies can be found, especially those dealing with awareness and the reduction of stress and chronic pain.⁷⁻⁸⁻⁹

In Italy, research on the effects of the bioenergetic exercises in sport, and especially on the athletes who practice endurance sports (running, cycling, swimming, triathlon) are currently insufficient. Generally these kind of athletes (both professional and “recreational”) tend to experience pre-competition anxiety, tendency to injury, depression, higher stress levels, psychological and physical rigidity, and insufficient body awareness.¹⁰ Anxiety, stress, and psycho-physical rigidity may cause a reduction in competitive performance levels, or may even overwhelm the competitors, causing withdrawals, injuries or unpredictable breakdowns.¹⁰

According to Lowen,¹¹ psychological and physical rigidity, anxiety and stress restrict the mobility of the muscular system, decreasing flexibility, oxygenation, and eventually even reduce total body strength and power. Furthermore, if these symptoms are interpreted as elements belonging to defense mechanisms, they will create a higher use of physical and psychological energies by the organism in order to maintain those same defense levels.¹²

Again, according to Lowen,¹² these chronic tensions create an absence of physical feeling and a partial lack of body awareness and eventually cause constrained, shallow in breathing.

In addition to these findings, which are visible in everyday circumstances, people who participate in endurance sports, who train with cyclical and repetitive exercises, are subject to constant impact bringing repeated micro-traumas to the muscular-skeletal system. In the long term, without adequate time to recover and/or rest, or any time of over-training, an increase of overall body stress may be experienced, which will lead to a greater possibility of injury. ¹⁰⁻¹³⁻¹⁴ Bioenergetic exercises help to get in touch with one's body and muscular tensions, have the end purpose of increasing self awareness, mastery, and expression – the three pillars of the physical self. ¹ Bioenergetic exercises involve not only the body as defined by muscular and motor skills, but also highlight emotional and the perceptive-sensorial aspects of the self. In this sense, self-awareness is increased, which in practical terms means having a better awareness of ourselves and of respecting our own limits. This awareness is important for everyone, and for athletes in particular it is fundamental, since an athlete's psychological characteristics will tend to lead towards compulsive attempts to overcome physical limits. ¹⁰

Research Hypothesis

The goals of the present pilot study were to explore the utility of a bioenergetic exercise training, combined with yoga and mindfulness practices, in order to allow a reduction of mental and physical stress levels and to reach an improvement of athletic performances and a reduced risk of injury; to improve general health conditions, mood and, finally, to create an improvement of some important effort parameters (Heart Rating, VO2 Maximum, aerobic strength) necessary for endurance sport activities such as running, cycling, and triathlon.

In particular, our basic questions as research hypothesis were the following:

1. Does measurable evidence exist which proves that bioenergetic exercises, together with yoga and mindfulness exercises, play an important role in the improvement of competitive performance?
2. Do bioenergetic exercises help athletes to reduce the physical and emotional stress in their competition?

Our research also had a social function, not quantifiable with numbers or data, which was to promote a healthy-sport culture, in which the greatest goal of the professional or recreational athletes is to maintain their psycho-physical health.

Time frame

We worked on two different periods of time. In 2014 we conducted the first session of the study (eight weeks – February/April), with an experimental group and a control group. In 2015 we conducted the same study (eight weeks – February/April), but only on an experimental group, testing them before and after the training.

Methodology

The literature is currently lacking and therefore we were not able to ground our study on previous research. However, we decided to run this pilot study in two steps: in the first step we decided to use a pre- and post-test with an experimental group, without a control group. We thought that was important to link a qualitative questionnaire to the tests (which measured stress parameters, psycho-physical wellbeing, aerobic strength, spirometry, heart rate under strain and heart rate after strain - recovery). The questionnaire was composed of eight multiple choice questions dealing with potential changes observed after the training period.

We identified which tests could be useful to confirm or contradict our expectations and our research targets. Since our aim was to study not only physical markers, but also physiological, hormonal, and psychological factors, we decided to use the following tests for the first period (2014):

- POMS (profile of mood states) – McNair et al. 1971
- PGWBI (Psychological General Well Being Index) – Chassany et al. 2004
- Spirometry test
- Heart rate monitoring under strain
- IRI Test (Immediate Recovery heart rate Index)

In the second period (2015):

- POMS (profile of mood states) – McNair et al. 1971
- PGWBI (Psychological General Well Being Index) – Chassany et al. 2004
- salivary cortisol test
- joint mobility test
- strength aerobic test – Cooper Test, 1968
- spirometry test

The sample

In the two steps we tested a total of 24 athletes of both sexes between the ages of 18 and 55 years old. These included professional athletes and recreational practitioners of endurance sport (running, cycling, swimming, and triathlon.)

In the first research step, the experimental group (SG1) was composed of twelve athletes, plus another twelve which served as a control group (CG1). In the second period, we tested another 12 athletes (SG2), with a pre- and post- test, but this time without a control group.

The eight-week training

The eight-week training was specifically created for this research study and incorporated several exercise techniques which included Bioenergetics, as well as some Yoga and Mindfulness practices.

- Bioenergetic exercises: grounding and footstep awareness; mobility and self-observation work dealing with charge and discharge of the lower limbs (feet, ankles, calves, thighs, waist); mobility and self-observation work dealing with charge and discharge of the upper-body and limbs (thorax, back, arms, shoulders, neck); exercises on the Lowen “stand” in order to deepen breathing and physical feeling; exercises to reduce trauma (Berceli).

- Yoga techniques: pranayama techniques to increase breathing awareness and a sequence of specific postures in order to lengthen musculature of various body areas (upper and lower limbs, upper-body, back.)
- Mindfulness techniques: body scan, breathing awareness, focused on body meditation.

The eight-week training took place with weekly group meetings (eight total meetings,) in which various types of bioenergetic exercises, along with yoga and mindfulness techniques, were taught and practiced. The participants were asked to repeat those same exercises at home and during practices (before or after), during the other days of the week, filling in a diary of their training.

The expected results

Aware of the effectiveness of bioenergetic exercises on bodily awareness, breathing, and stress reduction, at the end of the training period we expected to find an increase in joint flexibility, a higher level of body awareness and a reduction of stress, anxiety and a leveling out of depressive aspects. In general, during the first time frame of the pilot study (2014), these were the recorded changes: Increased aerobic peaks (average variation percentage – AV% +3,67%; 100% SG1, 5% CG1). Increased breathing capacity (AV% +5%; 89% SG1, 5% CG1); Reduced recovery time under stress-test (AV% +15,04%; 100% SG1, 20% CG1); Increased energy, activity and well-being levels (AV% +9,7%; 100% SG1; 0% CG1); Leveling out of anxiety levels (AV% - 12,67%; 100% SG1, 0% CG1), stress levels (AV% - 10,61%; 100% SG1; 0% CG1), and depression levels (AV% - 14,06%; 100% SG1; 0% CG1). In SG1 there were no injuries registered in the six months following the training, while in CG1 25% of the participants registered middle-range injuries.

In the second phase of the project (2015), we added a salivary test to measure cortisol (stress hormone) and an overview of joint flexibility. It was found that joint flexibility had increased in 100% of the participants (GS2) with an AV% of +78% in the shoulders, +24% in the upper body, and +26% in the legs; breathing capacity increased (AV% +5,5%; 100% SG2); cortisol levels were reduced (AV% -64%; 100% SG2); the strength aerobic test (Cooper) increased (AV% +4,59%; 100% SG2); anxiety levels (AV% -19,66%), depression (AV% -8,66%), and general health (AV% 6,23%) leveled out in 100% of participants; while vitality (AV% 16,2%) and positivity (AV% 23,77%) increased. No injuries were registered in the six months following the training.

Finally, in both periods, the subjective questionnaire dealing with perceived changes showed that 75% of participants (SG1 and SG2) perceived changes in their approach to training and competition, in their level of individual well-being, in their mental ability to manage their emotions during competition; 62.5% registered an increased ability to better manage fatigue and practice workloads and an improvement in individual performances.

This study therefore highlights a positive correlation between the practice of bioenergetic exercises as well as other body awareness exercises (yoga and mindfulness) and the practice of endurance sports by professional and recreational athletes. The study shows in particular a reduction of stress during competition, a reduction of muscular tension, an improvement of overall health and psycho-physical well-being and a reduction of injuries. It should be noted that the study was a qualitative research and a pilot study which may represent a first step leading towards further studies that may confirm these findings.

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