

IMPACTS OF MENTAL TOUGHNESS PROGRAM ON 20 km RACE WALKING

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Abstract

Purpose. Race walking is a long-distance athletic event. Although it is a foot race, it is different from running in that one foot must appear to be in contact with the ground at all times. Stride length is reduced, so to achieve competitive speeds, race walkers must attain cadence rates. The aim of this study was to determine the Effect of mental toughness program on 20km race walking.

Methods. 20 young athletics players .Subjects were randomly divided into two groups, experimental group (EG; n = 10) and control group (CG; n = 10). Mean age of all the participants ranged from 18 to 20 year. Subjects in experimental group participated in listening training program for 8 weeks, 3 days per week. To develop their psychological skills (concentrate – self-adjustment), record level of 20km race walking, walking length and walking cadence.

Results. mental toughness program that used to development the psychological skills among 20km race walking athletes had positive effects in improvement of all variables.

Conclusions. Success in race walking is related more to the efficiency of technique and mental toughness.

Key words: mental toughness program, 20km Race Walking .

Introduction

In the era of pursuit for success, in the area of competitive sport a necessity is appearing for the acquisition and extension of knowledge on the theory and practice of training. By setting a goal, a competitor strives to achieve it in an optimal way – the best way possible under specified conditions (I. Rygula ,2000, 2005).

Coaches and athletes alike are searching for competitive advantages. This search has typically led to the development of physical or technical training programs. Many coaches and athletes have become aware of the importance of mental skills in sport and are placing more emphasis on the development of these skills. The development of these mental skills is not only important for those with the desire to win, but for those with a desire to become more consistent performers. This is also true within the world of track and field as coaches and athletes have become interested in enhancing their athletes' psychological skills (D. Caudill, et al., 1983; S. Ungerleider & J. Golding, 1991). For instance, articles appearing in Track Coach have discussed the importance of the mental preparation (e.g., E. Anderson, 1997; R. Sing, 1986; R. Vernacchia, 1997; Z. Yingbo, 1992).

'Mental toughness' is probably one of the most used but least understood terms used by sporting communities globally and, in particular, by their media. (J. Loehr, 1982, 1986) was perhaps the first to popularise the term and he contended that at least 50% of superior athletic performance could be attributable to mental factors. Currently, within both scientific and coaching communities, mental toughness is now regarded as one of the most important psychological factors associated with achieving performance excellence in any sport.

In order to be mentally tough on the race, you must have talent and be in peak physical condition.

Your technical skills have to be sharp. It is also important to recognize that the physical, emotional and mental sides affect each other. Mental toughness training allows players to tap into emotional and mental resources that keep play at its prime as often and consistently as possible.

J. Loehr (1994) is a noted sport psychologist who has worked with many top athletes over the last twenty years. He suggests the following definition for toughness: "Toughness is the ability to consistently perform toward the upper range of your talent and skill regardless of competitive circumstances".

Toughness is not about having a "killer instinct" or being mean or cold. Loehr describes four emotional markers of mental toughness.

- Emotional Flexibility - The ability to handle different situations in a balanced or nondefensive manner. Emotional flexibility also speaks to the skill of drawing on a wide range of positive emotions - humor, fighting spirit, pleasure.

- Emotional Responsiveness - You are emotionally engaged in the competitive situation, not withdrawn.

- Emotional Strength - The ability to handle great emotional force and sustain your fighting spirit no matter what the circumstances.

- Emotional Resiliency - Being able to handle setbacks and recovering quickly from them.

Like other aspects of mental toughness, these skills can be learned. It is not something genetic. For some players it comes more easily than for others. In general, to play at this level, you probably already have many of these skills. However, for many players, there is often room for improvement.

By being mentally tough, you can bring all your talent and skill to life consistently. Being able to use your emotional life effectively will help you perform at your prime more consistently.

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The use of thinking skills, imagery, confidence building and other skills described later can be powerful techniques in reaching a high level of mental toughness.

Endurance performance is mentally tough; the best athletes can push themselves to sustain physical fatigue and remain psychologically positive over long distances and durations. But according to PP contributor Andy Lane, this doesn't happen by chance; endurance athletes can train the mind to develop emotional control

The general assumption for walking said that process of locomotion in which the moving body is supported by first one leg and then the other. When the moving body passes over the supporting leg, the other leg swings forward in preparation for its next support phase. One foot or the other is always on the ground, and during that period, when the support of the body is transferred from the trailing to the leading leg, there is a brief period when both feet are on the ground (J. Rose, J.G. Gamble, 2006)

Race walking can be described as the technical and athletic expression of fast walking; competition walkers attain speeds about double the maximum walking speed of an average person with a less step increase in energy expenditure, maybe due to two factors: (i) less mechanical work done to move forwards and/or (ii) the efficiency of positive work (GA. & Cavagna, P. Franzetti, 1981; DR. Menier, & L. Pugh, 1968).

Moreover, race walking has some other technical aspects, ruled by International Association of Athletics Federations (IAAF) rule 230, which increase the difficulty of locomotion: (i) loss of contact; and (ii) bent knee. The difference between common walking and race walking and the limits to race walking performance derive directly from these technical and ruling aspects. (L. Antonio, et al. 2008)

Whenever you race there are apt to be conflicting voices in your head. When the going gets tough, the loudest voices say things like: "This is stupid. I feel like garbage and I'm gonna slow down until things start feeling better." But there's always that tiny little voice of pride. The voice that says "I can do this. All I have to do is keep these legs moving." Of course it's not always easy, but if you talk down those negative voices, you can work through the tough patches and keep yourself moving on pace.

Whether it's a 5K or a marathon, there's always a point where your legs aren't going to want to play anymore. That's when you need to buckle down and do whatever it takes to stay focused on that one "simple" task: keeping your feet hitting the pavement one after the other in rapid succession. If you're close to the end of the race, keeping that focus is easy. But most of the time your legs start feeling heavy long before the cold beer at the finish line, in which case it can be extremely difficult to keep them moving. That's when you have to break things into manageable parts. If you start shutting down with four kilometers to go in a 10K, the last thing

you want to do is think about how horrible those 20km are going to be. So don't. Just take it 1 kilometer at a time.

Psychologically, the last kilometer is easy-- you're gunning for the finish line. And if all you're thinking about is the one kilometer you're working on, that too will be easy. It's all the kilometers between you and the last one that get those ugly negative thoughts boiling to the top. So forget about them! Just worry about keeping yourself going for those next few minutes, then when you knock that kilometer off, work on the next.

But what if there aren't any kilometer marks? Well, you could think about that next mile, but a mile is a long way when your legs are turning into jelly. It's probably not a good idea to focus on such a long distance, so you're probably better off focusing on the next best thing: your competitors.

To successfully complete an endurance events, athletes must be willing to meet the physical challenges of the sport. This includes many hours of training, even through the cold and wet winter months.

However, one forgotten component of training and racing - mental toughness- separates two athletes with the same skill and physical preparation. This article will describe the importance and the components of mental training for triathlon and other endurance sports.

Until recently, the literature on mental toughness has suffered from a number of inherent weaknesses, and was generally characterized by a lack of conceptual clarity (L. Crust, 2007; G. Jones, et al. 2002).

The aim of this study was to determine the Effect of mental toughness program on 20km race walking.

Methods.

20 young athletics players .Subjects were randomly divided into two groups, experimental group (EG; n = 10) and control group (CG; n = 10). Mean age of all the participants ranged from 18 to 20 year. Subjects in experimental group participated in listening training program for 8 weeks, 3 days per week. To develop their mental toughness, record level of 20km race walking.

All participants were fully informed about the aims of the study, the procedures and the training, and gave their voluntary consent before participation. The experimental procedures were in agreement with the ethical human experimentation.

Instrument :

In 1986 J. Loehr developed the Psychological Performance Inventory Questionnaire with its seven distinct psychological sub concepts

Psychological Performance Inventory (PPI)

The PPI is a 42-item self-report instrument designed to measure factors that reflect mental toughness. All questions in the PPI were answered using a 6-point Likert type scale, ranging from '1' (False) to '6' (True). Six items subsume each of the following seven factors:

- Self-confidence (e.g., “I believe in myself as a player”): Positive cognitions, feelings and images about what one can do and achieve.
- Negative energy (e.g., “I get angry and frustrated during competition”): The ability to control negative emotions such as fear, anger, frustration and resentment.
- Attention control (e.g., “I can clear interfering emotions quickly and regain focus”): The ability to sustain a continuous focus on the task at hand. The ability to ‘tune in’ to what’s important, and ‘tune out’ to what is not.
- Visual and imagery control (e.g., “Before competition, I picture myself performing perfectly”): The ability to think in positive and supportive images and the ability to control the flow of mental images in a positive and constructive direction.
- Motivation level (e.g., “I am highly motivated to play my best”): The willingness to persevere with training schedules and to endure the pain, discomfort and self-sacrifice associated with forward progress.
- Positive energy (e.g., “I can keep strong positive emotion flowing during competition”): The ability to become energized through fun, joy, determination, positivity, and team spirit.
- Attitude control (e.g., “I am a positive thinker during competition”): Control over one’s habits of thought reflecting the extent to which one’s personal attitudes are consistent with those of successful high-level performances.

Statistical analysis

All statistical analyses were calculated by the SPSS statistical package. The results are reported as means and standard deviations (SD). Differences between two groups were reported as mean difference $\pm 95\%$ confidence intervals (meandiff $\pm 95\%$ CI). Student’s t-test for independent samples was used to determine the differences in fitness parameters between the two groups. The $p < 0.05$ was considered as statistically significant.

Mental Toughness Program

1. Create a mental map for the course

- a. Use landmarks to trigger a mental reaction
- b. Break the race down and choose your focus/attitude for each piece
- c. Have a focus plan for pain and exhaustion

2. Watch your self-talk

- a. Be your own biggest fan-cheer yourself on.
- b. Don’t say anything to yourself you wouldn’t let anyone else get away with
- c. Change negatives to positives (pain=working hard)

3. Have tricks to keep you focused

- a. Simplify the race (left, right, left, right...)
- b. Stay in the present (don’t worry about how much you still have left)

- c. Music
- d. Counting

4. Remember that confidence is a choice

- a. Preparation and trust are the keys to confidence
- b. “Flag the Minefield”
- c. Acting the way you want to feel creates those feelings
- d. Focus on what you control

5. Use pre-race imagery

- a. Picture yourself in the event during training runs
- b. Imagine what you want to look like as you run (posture, body language, smile)
- c. Imagine your plan for dealing with obstacles (laces, people, start...)
- d. Picture yourself successfully battling pain/exhaustion
- e. Imagine yourself crossing the finish line successfully

6. Use in-race imagery

- a. Mentally breaking through the wall
- b. Sunshine pulling away the pain
- c. Rocky

Training the mind involves multiple steps. By setting small obtainable goals and then succeeding at them, you can train the mind to be confident you will achieve your main goal.

Start by creating a list of positive mini-goals that seem attainable en route to accomplishing your primary goal. These steps start with your training, lead up to and include your race, and culminate with you reaching your goal.

A typical list may look as follows:

- Walk as far as the race distance.
- Walk further than the race distance.
- Complete an interval workout at—or faster than—race pace.
- Walk half the race distance in another race or workout at—or faster than—race pace, and feel good about it.
- Get to the race with plenty of time to prepare.
- Start the race on pace and feeling comfortable.
- Hit the splits along the way.
- Cross the finish line under goal race pace.

Results :**Table 1. Mean \pm SD of Psychological Performance Inventory for the control and experimental groups**

Variables	Control			Experimental			T Sign.
	pre	post	change%	pre	post	change%	
Self-confidence	19.86 \pm 2.39	20.58 \pm 2.47	3.63	19.23 \pm 2.16	23.92 \pm 2.54	24.39	Sign
Negative energy	18.23 \pm 2.68	19.11 \pm 2.15	4.83	18.65 \pm 3.04	22.23 \pm 2.62	19.20	Sign
Attention control	20.14 \pm 2.55	20.77 \pm 2.64	3.13	19.25 \pm 2.31	22.16 \pm 2.42	15.12	Sign
Visual and imagery control	19.14 \pm 2.5	19.15 \pm 2.3	0.05	18.41 \pm 2.5	23.24 \pm 1.96	12.52	Sign
Motivation level	18.01 \pm 2.91	20.99 \pm 2.38*	16.555	18.14 \pm 2.98	24.67 \pm 2.34	26.24	Sign
Positive energy	19.12 \pm 2.52	20.37 \pm 2.61	6.54	19.24 \pm 2.70	21.54 \pm 2.61	11.95	Sign
Attitude control	17.24 \pm 2.77	19.17 \pm 2.66	11.19	17.00 \pm 1.93	18.48 \pm 2.39	8.71	Sign
Total	133.82 \pm 2.99	140.00 \pm 3.05	4.62	133.44 \pm 2.98	157.66 \pm 2.44	81.15	Sign

Is clear from Table (1).The t-test showed a significant changes between pre-and post training scores for all variables ($P \leq 0.05$) for experimental group .however no significant differences was shown between pre-and

post training scores for all variables for control group($P \geq 0.05$) .and rates improved measurements posteriori for experimental group highest than the control group in all variables of mental toughness.

Table 2. Mean \pm SD of the record level to 20km walking race for the control and experimental groups

Variables	Control			Experimental			T Sign.
	pre	post	change%	pre	post	change%	
Total	77.55 \pm 0.23	77.51 \pm .11	0.08	77.49 \pm 0.28	77.11 \pm 0.14	0.8	Sign

Is clear from Table (2).The t-test showed a significant changes between pre-and post training scores for record level ($P \leq 0.05$) for experimental group .however no significant differences was shown between pre-and post training scores for all variables for control group($P \geq 0.05$) .and rates improved measurements posteriori for experimental group highest than the control group in all variables of record level

Discussion:

The main purpose of the present report was to determine the Effect of mental toughness program on 20km race walking . As showed by Psychological skills have been found to differentiate successful and unsuccessful athletes. In general, elite performers have higher self-confidence, heightened concentration, can regulate arousal effectively, use systematically goal setting and imagery, and have high levels of motivation and commitment (D. Gould, & R. Eklund . 1991). It has also been found that elite athletes use more goal setting, imagery and activation compared to non-elite athletes (P. Thomas, et al. 1999) Psychological skills of track and field athletes were also explored in some research studies. In the Olympic US trials of 1988, track & field athletes who managed

to qualify for the Olympic team used imagery more, compared to those who failed to qualify (S. Ungerleider, & J. Golding.1991). A research study, using the Psychological Skills Inventory for Sports, revealed that elite Chinese track and field athletes had higher anxiety control and confidence than collegiate level athletes (R. Cox, et al. 1996).

In race walking, mental toughness can be equated with consistency in performance, and consists of a combination of attributes:
 • Discipline, diligence and focus are most evident in a successful athlete's. Discipline also includes being able to sustain good technique and turnover, even when feeling very fatigued.

Moreover, 15 Olympic track and field athletes were interviewed and their psychological characteristics were examined (R. Vernacchia, 1997). The researchers reported that imagery was the most widely utilized mental skill. Also, elite athletes had hard work ethic, patience, persistence, self-confidence, pursued their dreams and enjoyed participating in their sport.

Ideal Performance State control can be acquired in two ways. The first is by getting tougher physically through more outside-in training. The second way can be

acquired by getting tougher mentally. The connection between thoughts and emotions is very real.

Being tough mentally means that you have acquired skills in thinking, believing, and visualization.

According to (S. Bull, et al., 2005; G. Jones, et al., 2002) Mental toughness is a psychological characteristic that is suggested to contribute substantially to performance excellence.

Mental toughness can be learned. It is not something genetic. For some players it comes more easily than for others. In general, to play at this level, you probably already have many of these skills. However, for many players, there is often room for improvement.

Race walkers must have the desire, determination and inner drive to want to be the best. This involves a high degree of self-confidence, concentration, and commitment, being mentally tough and competitive enough to stay focused on their own goals and race plans, and if necessary, to raise their own

level of discomfort high enough to break away from the pack or competitor. As most walkers want to develop more confidence, better consistency, improved concentration, composure and mental toughness throughout a race,

The findings of the present study, hopefully, could help track and field coaches and sport psychologists to design more effective training plans, incorporating psychological skills that need to be enhanced. The training of the specific performance strategies, along with physical and technical components, could help track and field athletes of different level and gender to improve their performance.

Conclusions.

Success in race walking is related more to the efficiency of technique and mental toughness.

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