Review article

EFFECTS OF THE SELF-TALK STRATEGY IN THE MENTAL TRAINING OF ATHLETES

UDC 796.011.1:159.922.73

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Abstract. Before major sporting events, athletes are usually very tense, which has a negative effect on their success. Even though they are ‘well prepared’, they do not achieve the desired results in sports. It often happens that talented athletes do not succeed in their sports career despite good conditions for work, talent, hard work and the professional work of their coaches. Having a conversation with oneself (self-talk) is defined differently by different researchers, and therefore there is no single unified definition that would be available to us. It is defined as something ‘that people say to themselves out loud, or it can be defined as a small voice in their own heads’. Research on this topic shows that successful athletes use positive self-talk more often in comparison to less successful athletes. Based on previous research, it can be concluded that self-talk is usually treated as an integral part of a comprehensive mental training, i.e. that in practice it was very often used in combination with other psychological strategies (e.g., using imagery, relaxation, goal setting). In contrast, today we have a large number of empirical studies which have provided evidence of the effectiveness of the independent self-talk technique in various sports disciplines. Thus, there are a sufficient number of studies that confirm the positive effects of self-talk, and relate to improving athletic performance, improvement of self-confidence, as well as a reduction in anxiety in different kinds of sports, including tennis, soccer, golf, swimming, basketball, ice hockey and athletics.

Key words: mental training, self-talk, athletes.

INTRODUCTION

A member of the Hall of Fame baseball player, Yogi Berra, said a long time ago: “Sport is 50 % physical and 90 % mental preparedness.” This statement captures just how
much mental preparedness is a necessary precondition for achieving superior results in modern sport. However, this is not something new, as we have all probably many times had the opportunity to hear a variety of coaches and athletes highlighting mental preparedness as an integral part of the overall preparation of athletes. Research and daily sports practices show that psychological skills are a factor on which whether the athlete is going to take full advantage of his potential largely depends.

Before major sporting events, athletes are usually very tense, which has a negative effect on their success. Even though they are ‘well prepared’, they do not achieve the desired results in sports. It often happens that talented athletes do not succeed in their sports career despite good conditions for work, talent, hard work and the professional work of their coaches. With a high level of motor abilities and skills, you need a high level of self-confidence, concentration, the ability to withstand pressure, regardless of the conditions of the competition. In other words, the greatest weapon of elite athletes is their mental strength, which is achieved by mental training. That is what makes the difference between an Olympic medal and oblivion. We have witnessed, in recent decades, that sport has developed in leaps and bounds in the world, that competition has intensified in all sectors, that the challenges of being the best are constantly increasing, that athletes have undergone unprecedented psychological stress. In such a climate, psychological factors become important segment for elite achievements and results. National coaches and athletes also are gradually realizing the importance of psychological factors in competitions, and are increasingly beginning to attach importance to the psychological side of the preparation. At the present time, sports psychology permeates all the levels of sports, ranging from school and recreational sports, all the way up to the elite and professional sports.

As an applied science, sports psychology focuses both on the athletes’ mental health and to the improvement of the performance in the playing field. However, we can generally claim that the heart of sports psychology lies in improving sports performance through mental training. Basic methods of mental training include: strategy of goal setting, techniques of relaxation and activation, creating positive mental images (imagery), the optimization of conversation with oneself (self-talk), and the development of the competitive routines. Mental training is structured so as to enhance the athlete’s mental skills, including self-confidence, motivation, commitment to his work, the ability to relax under extreme pressure, and the ability to focus and concentrate. Basically, mental training can be conceptualized differently, but it typically has three phases. The first is education, during which athletes learn about the importance of mental training for achieving top results in sports. The second phase is marked as the acquisition phase, during which athletes learn about specific psychological strategies and techniques and their effect on the performance itself, and the third, the practical phase, is when athletes develop their mental faculties by exercising every day, both during their training sessions and at the competitions as well.

**Defining the Self-Talk Strategy of Mental Training**

Having a conversation with oneself (self-talk) is defined differently by different researchers, and therefore there is no single unified definition that would be available to us. It is defined as something “that people say to themselves out loud, or it can be defined as a small voice in their own heads” (Theodorakis, Weinberg, Natsis, Douma, & Kazakas,
Effects of the Self-Talk Strategy in the Mental Training of Athlete

A more complex and more precise definition explains self-talk as “an internal dialogue in which individuals interpret the feelings and perceptions, regulate and change evaluations and knowledge and give themselves advice and support” (Hackfort & Schvenkmzeg, 1993, 355). Hardy, Gammage, & Hall (2001) proposed the most complete definition. They described self-talk as a multidimensional, dynamic phenomenon that deals with the verbalization of the athletes as they address themselves, which can have both an instructional and motivational function. Therefore, instructional self-talk helps athletes improve their performances by controlling and organizing their thoughts, as well as keeping their focus on the technical aspects of training skills. On the other hand, motivational self-talk refers to the statements that motivate athletes to work harder during exercise, to raise their self-esteem level and induce a positive mood (Hardy, 2006; Theodorakis et al., 2000).

Having a conversation with oneself (self-talk) can be divided into two basic groups: positive and negative. On the one hand, positive self-talk refers to the positive statements that enhance and improve self-esteem and motivation and help athletes to concentrate more effectively on the current task and not on the mistakes made in the past (Weinberg, 1988). The examples of positive self-talk phrases are the following ones: “I can surely do it”, “I am quite ready, I will do my best”. On the other hand, negative self-talk includes statements in the form of criticism that produces increased anxiety, lower self-efficacy and lower performances (Moran, 1996). Such examples include: “There is no possible way I can do this”, “I am so bad, I will certainly fail”. In addition, self-talk can have two main functions in the conversations with oneself, an instructional and motivational one (Hardy, 2006). Instructional self-talk is related to the key words, phrases or sentences that are designed to improve the performance of athletes by providing a focus on the technical aspects of training skills (e.g., “see the opponent’s position”), as well as providing instructions relating to: strategy (e.g., “strong”, “fast”), technique (e.g., “bend the knee”), or kinesthetic skills characteristics (e.g., “easy tempo”). On the other hand, having a motivational conversation with oneself refers to the statements that are intended to increase the effort and energy expenditure of athletes (e.g., “with all the force to the very end”, “use all your strength now”), potentially increasing the level of confidence (e.g., “I can do it”, “I will win”, as well as to create a positive mood (e.g., “I feel awesome”). All of this should lead to improved performance at competitions (Theodorakis et al., 2000). Moreover, talking to oneself (self-talk) can be divided into internal (intrinsic) and external (outward). This describes how self-talk is performed, whether in someone’s head or out loud. External self-talk, or private speech as it is also called, is done out loud, so that other individuals have the opportunity to hear what the athlete is actually saying. In contrast, the inner self-talk, or covert speech, is speech that cannot be heard by any other individuals, as it is spoken in the form of the inner voice in the head of the athlete himself.

Depending on the type of sports activity, different effects of conversations with oneself have been presented so far. Hardy, Hall, & Hardy (2004) found that the athletes involved in individual sports reported more frequent use of self-talk, as well as significantly greater belief in the efficacy of this technique, when compared to the athletes who competed in team sports. Finally, the very structural dimension of self-talk is a very important factor that can immensely affect the effectiveness of this psychological strategy. Based on this parameter, self-talk can be divided into the kind that contains only the key words (“Make it strong”, “Go, go, go!!!”, “Soft jerk.”), then the kind that consists of a phrase (“Next time, make it really strong!”), “Left hand- soft toss.”), and finally the kind that consists of a complete sentence (“Next time you get the ball, hit it hard!”).
EFFECTS OF SELF-TALK STRATEGY IN THE MENTAL TRAINING TO ACHIEVE SPORTS RESULTS

Research on this topic shows that successful athletes use positive self-talk more often in comparison to less successful athletes. One of the first studies conducted by Mahoney & Avener (1977) showed that the use of this mental strategy was significantly more present in those American gymnasts who qualified for the Olympics, than in those who were not able to do so. The higher frequency of the use of positive self-talk was expressed in these athletes not only when they competed, but also in everyday training sessions. Tennis is one of the sports in which a considerable number of studies have been conducted with the purpose to demonstrate a positive correlation between the performance on the field (improvements in performance) and the use of the self-talk strategy. One of the first studies of this kind was conducted by Van Raalte, Brewer, Rivera, & Petipas (1994). They investigated the effects of external, outward external self-talk (words that are spoken aloud) on the results achieved by 24 junior tennis players. In the end, it was concluded that the players who believed in the self-talk strategy, and therefore used it more frequently, won more points compared to the players who did not practice this technique. In accord with this, players who have been winning matches were tennis players who recorded lower frequency of use of negative self-talk when compared to players who were losing. In addition, players who have continuously been using the self-talk strategy were unanimous in saying that it helped them to increase motivation, as well as to better concentrate and stay focused. The effect of motivational self-talk on specific motor skills of the players, their level of self-confidence and anxiety is explored in the work of Hatzigeorgiadisa, Zourbanos, Mpoumpaki, & Theodorakis (2009). The researchers found that positive, motivational self-talk helped tennis players improve their performance on the tennis court, their self-confidence, but it also helped them to reduce cognitive anxiety. Accordingly, Landin & Hebert (1999) also reported that tennis players felt more focused and more self-confident after the implementation of self-talk inbuilt into their training program. Another study that found a positive relationship between self-talk and the success in the performance of certain tasks in tennis was conducted by Landin et al. (1999). During this study, tennis players were assigned the task to use the key words “turn” and “share” (an instructional form of self-talk) in order to improve the technique of the volley shot. Finally, the results showed that this technique yielded results and was effective in four out of the five female tennis players who participated in this study. It should be noted that the study of Lambert and Hebert in fact only confirmed and strengthened the claims of the positive impact of instructional self-talk on the performance of tennis players. We point out because Ziegler (1987) twelve years earlier conducted a study that showed that this type of self-talk leads to a large and prolonged increase in successful performance in two major strokes in tennis, namely, the backhand and forehand. During this study, tennis players were given instructions to use four different key words depending on what position they were in, in order to improve their focus on the task itself. The first key word was “ball” and the participants’ task was to recite it aloud, at the time when the ball was launched from the machine on the opposite side of the net. Another key word (“bounce”) was recited in order to improve the timing of hitting the ball and was verbalized at the time of striking the ball on the ground. The third instructional word was “shot” and the task was to pronounce it just before the contact of the racket and the ball. Last, the final key word was “ready” and was recited it in order to re-orient the focus of attention on the machine that was to throw a new ball.

One of the more recent studies showed that a conversation with oneself has a positive impact on the performance of dribbling and passing among young basketball players (Perkos,
The effects of self-talk in the mental training of athletes were studied. During a twelve-week self-talk training program with 62 young basketball players, who were divided into two groups (an experimental and control group). During this period, the experimental group participated in the normal training process, while the control group did not. The experimental group also received specific self-talk instructions. At the end of the program, the results demonstrated that the experimental group performed better than the control group. A delayed questionnaire showed that the players of the experimental group also improved their self-confidence and concentration levels. Furthermore, the effect of self-talk on four young female soccer players was also examined, with a focus on the existence of a positive correlation between the specific motor performance of the athletes (efficiency of the ground, shooting at the goal) and instructional self-talk (Johnson, Hrycaiko, Johnson, & Hallas, 2004). This intervention was aimed at improving a specific task in soccer - ground shooting at a small net of the goal, one of the most effective kicks in soccer. During the study, the female soccer players were instructed to use words, the keywords “down” and “tight foot”. In the end, the results showed that the female soccer players improved their performance when compared to the results achieved at the beginning of the experimental program.

Yet another study (Rogers & Hrycaiko, 2002), which aimed to investigate the influence of mental training on improving the performance of athletes in team sports, was conducted among junior hockey goal keepers in America. We emphasize “mental training” because this study in its experimental section, except self-talk, also contained a mental relaxation technique (specific breathing exercises) which was combined with self-talk. Briefly, 5 goal keepers who participated in this study were given instructions to use this technique after every whistle of the judges in the matches and during every training session. The technique involved a simultaneous combination of the components of breathing (a deep breath - exhalation) and one of the three types of self-talk: instructional (“Stay big at the goal”, “my man with the puck”), self-affirming (“I deserve to win”) and those that affect mood (“relaxed and alert”). In this case, the dependent variable was the percentage of defended shots (S%), which is defined as the number of defended shots divided by the number of shots directed at the goal and then multiplied by the number 100. The average value that the goalkeepers made in 3 games before the intervention was taken as the initial value, so that their performance could be measured again during three games that followed the interventions. The results showed a positive correlation between the content of the mental training and the percentage of defended shots in the final measurement.

The positive impact of self-talk on the performance of the athletes was tested in athletics as well. A study conducted by Mallett & Hannahan (1997) included elite Australian sprinters. They were supposed to use the key words “push”, “heel”, “claw” during 0-30, 30-60, and 60-100 m sections of the race at 100 m. The final average improvement amounted to 2%, which was an exceptional result considering the fact that top athletes were involved in the study, as well as the discipline itself, where every millisecond is of great importance. Rushall, Hall, Roux, Sasseville, & Rushall (1988) conducted a study in which they examined the effects of self-talk on task performance among elite cross-country skiers. The results showed that self-talk brought a significant improvement in the time of passing the ski slopes as compared to “normal” skiing where self-talk was not used. Finally, the authors conclude that for the cross-country skiers “control of the content of thoughts is very important for improving the results” (p. 293) because it allows them to “run” the track significantly faster than in circumstances where the control of the content of their thinking is lacking. The survey conducted by Malouff & Murphy (2006) confirmed the
Earlier findings that self-talk improves sport performance. In this study, 100 adult athletes competed in a golf tournament. The aim of this study was to investigate whether the use of instructional conversations with oneself improves the performance of golf players. Participants were divided into two groups - the experimental and control one. While the participants in the control group received instructions to strike the balls as usual, the members of the experimental group were instructed to self-administer the instructions of their choice before each shot (e.g. “shoulders rotate toward the planned path of the balls”, “Eyes follow the path of the target route”). The results showed that the golfers who used self-instructions needed much less effort to complete all the holes than the golfers in the control group. Speaking about the nature of self-talk, we need to note that previous studies showed that the efficiency of this technique depends significantly on the choice of words, that is, on the distinction between motivational and instructional self-talk, and all depending on the nature of the task (type of the sport) which the athlete is to fulfill. Theodorakis et al. (2000) came to the conclusion that instructional self-talk is more efficient in cases where the sport task requires fine motor responses (movements). In such cases, the athlete is presented with a task which is successfully solved primarily by calmness and precision. In contrast, in situations that require strength and endurance, motivational self-talk is significantly more efficient. The results which corroborated the findings in this study were obtained by Hatzigeorgiadis, Theodorakis & Zourbanos (2004). Doing so, they compared the effectiveness of motivational and instructional self-talk on specific water polo and basketball tasks. The results showed that the instructional self-talk was more effective than the motivational kind in tasks that required accuracy and precision. In contrast, in tasks that required strength, it is the motivational self-talk that improved the performance of the athletes. A similar study (Theodorakis, Chroni, Laparidis, Bebetsos, & Douma, 2001) further clarified the situation, and showed that within one type of self-talk (be it instructional or motivational) one can expect a positive effect on the final result only if its content (words that are pronounced) are adapted to a task that is to be executed. In their work they implemented a specific test that was aimed to evaluate the impact of different words used in instructional self-talk on the success of the free-throw line shots in basketball. The participants were students of the Faculty of Sport and Physical Education, who after the initial tests were divided into two experimental groups and one control group. All of the members of both experimental groups were instructed to use instructional self-talk before each shot, but their words differed. The first group used the word “relax” (in order to regulate the speed and the accuracy of the embodiment), while the second group at the same time used the word “fast” (in order to increase the speed of execution). The obtained results showed that the first group (“relaxation”) substantially improved their performance as compared to the other two groups. No disparities were found in the performance between the second experimental group (“fast”) and the control group. The most recent systematic review of all the studies that investigated the effect of self-talk on the performance of athletes was conducted by three researchers (Tod, Hardy, & Oliver 2011). They included as many as 47 papers in their comprehensive analysis, all studies form previous years in the same area. In a nutshell, one can reach the conclusion that this very thorough and complex analysis only confirmed the previous findings that self-talk, with its two positive forms (motivational and instructional) enhances and has positive effects on the performance of athletes in different sports.

Similar to this systematic review of the previous work on this topic, Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis (2011) have also conducted a meta-analysis that included 32 studies in this field. The conclusions of this study did not differ from the
previous research, and strengthened the already existing findings, indicating that the self-talk strategy represents an effective means of improving athletic performance. Various aspects of psychological involvement play an important role in the biomechanical, physiological and neural control of movement. Mental training aims to develop the skills and psychological states of athletes that will lead to an improvements in physical performance over those achieved through physical and technical training (Driskell, Copper, & Moran, 1994). Mental training, by increasing the cortical output signal powering muscles to a higher level of activation, increases force and contributes to the overall increase in the exercise capacity (Ranganathan, Siemionow, Liu, Sahgal, & Yue, 2004; Crust, 2007).

CONCLUSION

Based on previous research, it can be concluded that self-talk is usually treated as an integral part of a comprehensive mental training, i.e. that in practice it was very often used in combination with other psychological strategies (e.g., the use of imagery, relaxation, goal setting). In contrast, today we have a large number of empirical studies which have provided evidence on the effectiveness of the independent self-talk technique in various sports disciplines.

Thus, there are a sufficient number of studies that confirm the positive effects of self-talk, and relate to improving athletic performance, the improvement of self-confidence, as well as reducing anxiety in different kinds of sports, including tennis, football, golf, swimming, basketball, ice hockey and athletics. Existing data show that mental training, by increasing the cortical output signal that triggers the muscles to a higher level of activation, increases force and contributes to the overall increase in exercise capacity. The significance of this study lies in the possibility of applying the results in practice and in trying to answer some of those questions to understand how in modern sport mental preparedness is a necessary precondition for achieving superior results.

The results of this study indicate that psychological skills are a factor on which whether the athlete is going to take advantage of his potential largely depends. Therefore, this paper should help young coaches improve sports practice, or in other words, it is necessary that they try hard and realize that they are not only teachers but also psychologists. They need to know something more about the psychology of athletes if they want to achieve better results, not only in the field of exercise and achieving better sports skills, but also in the field of the overall development of athletes.

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U MENTALNOM TRENINGU SPORTISTA

Istraživanja i svakodnevna sportska praksa pokazuju da su psihološke veštine faktor od kojih u najvećoj meri zavisni hoće li sportista postići svoj potencijal. Pred značajne sportske događaje sportisti su najčešće, vrlo napeti, što negativno deluje na njihov uspeh, pa iako su dobro "pripremljeni" nisu sigurni da će im postići željene sportske rezultate.

Hardy i Hardy (2004) su istaknuli da "razgovor sa samim sobom" (self-talk) je različito definisan kod različitih istraživača, te samim tim ne postoji jedinstvena definicija koja bi nam bila na raspolaganju. Istraživanja i svakodnevna sportska praksa pokazuju da su psihološke veštine faktor od kojih u najvećoj meri zavisni hoće li sportista postići svoj potencijal. Pred značajne sportske događaje sportisti su najčešće, vrlo napeti, što negativno deluje na njihov uspeh, pa iako su dobro "pripremljeni" nisu sigurni da će im postići željene sportske rezultate.

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