Original Article

The effect of self-talk in learning the volleyball service skill and self-efficacy improvement

ELENI ZETOU, NIKOLAS VERNADAKIS, EVAGELOS BEBETSOS, ELEFTHERIA MAKRAKI

Department of Physical Education and Sport Sciences of Democritus University of Thrace, Komotini, Greece

ABSTRACT

Zetou E, Vernadakis N, Bebetsos E, Makraki E. The effect of self-talk in learning the volleyball service skill and self-efficacy improvement. *J. Hum. Sport Exerc.* Vol. 7, No. 4, pp. 794-805, 2012. In this study the effect of self-talk on learning the volleyball service skill was examined and also the self-efficacy improvement. Participants were 57 female players 13 years old (mean age =12.83, SD=0.97) with two years experience (M=1.99, SD=0.67). Prior to the beginning of the program, participants were randomly assigned into two groups: a. the instructional self-talk group (ISTG, n = 28) and b. the control (traditional) group (CG, n = 29). All athletes followed a four-week practice program, aiming at overhand service skill learning and self-efficacy improvement. The program consisted of two practice units (60 min) per week. Participants of ISTG were taught to use the self-talk (for technique) loud before they performed the service drills. The control group received traditional feedback, that is, knowledge of performance and knowledge of results provided by the instructor. Service performance was assessed by videotaped evaluations in five basic elements of skill. There were three measurement periods for field test: pre-, post- and retention tests (one week after post-test). ANOVA repeated measures revealed significant interaction between groups and measures. There was also significant interaction between groups and self-efficacy scores. The results indicated that participants of the ISTG had better scores in the final measurement than the control group, when technique was evaluated and improved also their self-efficacy. In conclusion the Self-talk helps female volleyball athletes to improve performance and learning of overhand service skill and to improve also their self-efficacy. This study adds some useful elements to practitioners and how they used self-talk in the practice. **Key words**: SELF-TALK; SKILL LEARNING; SERVICE; VOLLEYBALL; SELF-EFFICACY.

Corresponding author. Dept. of Physical Education & Sport Sciences, Democritus University of Thrace, 69100 Komotini, Greece.
Phone: +253103964
E-mail: elzet@phyed.duth.gr
Submitted for publication June 2012
Accepted for publication November 2012
JOURNAL OF HUMAN SPORT & EXERCISE ISSN 1988-5202

doi:10.4100/jhse.2012.74.07

INTRODUCTION

In sport psychology research support the use of mental skill training for improving sport performance, including for improvements in concentration, imagery, positive thinking and self-talk (Wanlin et al., 1997; Ming & Martin, 1996; Orlick, 1986). One of the most commonly used strategies is that of self-talk (Gould et al., 1993; Madigan et al., 1992). It has been suggested that self-talk interventions and procedures are some of the most widely applied and effective strategies used by athletes (Hatzigeorgiadis et al., 2011; Park, 2000; Weinberg et al., 1992).

Hackfort and Schwenkmezger (1993) defined self-talk as "an internal dialogue, [in which] the individual interprets feelings and perceptions, regulates and changes evaluations and convictions, and gives him/herself instructions and reinforcement" (p. 355). Self talk is the talking of somebody to him/herself either by talking loudly or from inside; is the procedure of thoughts usually become unconsciously and affects emotions and athletes' actions/behaviors (Morris & Andersen, 2007; Hatzigeorgiadis et al., 2004; Johnson et al., 2004). With regard to what kind of self-talk (internal or out-loud) could researchers used to their interventions, Ming and Martin, (1996) preferred external self-talk to ensure that self-talk cues were actually used. In many studies participants have been advised to choice between internal and external self-talk (Harvey et al., 2002).

Self talk could be positive, negative or neutral (Hatzigeorgiadis et al., 2004; Theodorakis et al., 2000). Athletes, who use their thoughts correctly, help themselves to get the highest of their performances (Papaioannou et al., 1999). On the contrast athletes who use negative thoughts create stress (Lodge et al., 1998), decrease their performance and derive the athlete from feeling pleasant from their participation to the sport activity. The role of self-talk in sport performance has been discussed widely in the literature (Landin & Hebert, 1999; Landin, 1994; Rushall, 1984). Self-talk has been found to have a positive effect on performance with a variety of sports including: basketball (Perkos et al., 2002; Kendall et al., 1990), soccer (Papaioannou et al., 2004), tennis (McPherson, 2000; Landin & Hebert, 1999; McPherson, 2000; Defrancesco & Burke, 1997; Van Raalte et al., 1994; Weinberg & Jackson, 1990) water polo (Hatzigeorgiadis et al., 2004), golf (Harvey et al., 2002; Kirschenbaum et al., 1998; Thomas & Fogarty, 1997), cricket (Holt, 2003; Slogrove et al., 2003), figure skating (Palmer, 1992; Ming & Martin, 1996), ice hockey (Botterill, 1990; Halliwell, 1990), swimming (Wang et al., 2003), wrestling (Highlen & Bennett, 1983), endurance running (Weinberg et al., 1984), and endurance performance (Hamilton et al., 2007).

Positive self talk is divided in two categories: positive self talk for motivation and positive self talk for technical instruction. Positive self talk of motivation includes words such as: "strong…", "keep up…", "let's go…", "I can…" and others that target to make the athlete more active. While positive self talk for technical instruction includes "key words" or phrases that have to do with the right technique of the skill, such as: "I can see the target…", "elbow up…", "calm…." and many more. According to Zinsser, Bunker, and Williams (2001) self-talk influences performance in a number of ways including the acquisition of skills, the development of self-confidence, and the self-regulation of habits. In contrast Hardy, Hall, and Alexander, (2001) suggested that negative self-talk may motivate some athletes.

Theodorakis et al. (2000) extended this approach by examining the influence of instructional versus motivational self-talk on various motor skills. It was found that both self-talk strategies are effective on improving performance. However, instructional self-talk was found to be more effective than motivational self-talk on fine motor skills, while both motivational and instructional self-talk to be equally effective on motor skills requiring strength and endurance (Theodorakis et al., 2000).

Instructional self-talk has been found to be beneficial for tennis players' volleying (Landin & Hebert, 1999) and ground stroke skills (Ziegler, 1897), as well as for 100 m sprinting (Mallett & Hanrahan, 1997). Skills that required refined movements, such as shoot in basketball self-talk of technical instruction had better results. While with skills requiring strength, motivational self-talk was more effective (Hatzigeorgiadis, Theodorakis & Zourbanos, 2004). Perkos et al. (2002) examined the effectiveness of a self-talk intervention program on basketball skills. The results revealed that instructional self-talk was effective for a dribbling and a passing test, but not for a shooting test. The researchers attributed the lack of effect for the shooting to the complexity of the task, and the suitability of the selected cues related to the task.

Additionally et al. (2007) conducted 21 polo female athletes, was found that self-talk has positive results in the increase of athletes attention to the goal. Adding to that many of the female athletes reported that self-talk helped them to try harder in order to increase self-confidence and decrease stress and negative thoughts.

Many athletes are not able to perform their full potential ability. The cause of this phenomenon is often lack of self-confidence. Self-confidence is the athletes' expectation that they can be successful, is the belief/faith to themselves and their abilities. Self-confidence by itself however is not always enough, if athletes don't have the required abilities; no matter how hard they try, they won't succeed (Martens, 1987).

Many studies in the sport psychology domain have dealt with self-confidence and its relation to the self-talk (Hanton et al., 2004; Morris & Andersen, 2007). Positive thinking and positive answers lead the person to an ideal state/level of self-confidence, having as a result correct and refine actions/behaviours leading to positive result (Morris & Andersen, 2007; Hatzigeorgiadis et al., 2007; Johnson et al., 2004). Bandura (1997) uses the term "self-efficacy" to describe the conviction one has to execute successfully the behavior (e.g., a sports performance) required to produce a certain outcome (e.g., a performance score) and, thus, can be considered as a situational specific self-confidence. In addition, as Bandura (1997) notes, self-efficacy is not concerned with the skills an individual has but with the judgments of what an individual can do with the skills he or she possesses.

Wilkes and Summers (1984) found that self-efficacy techniques (positive self-talk) influenced performance. On the other side some criticisms have focused on the methods by which self-efficacy ratings are made (Biglan, 1987; Kazdin, 1978; Kirsch, 1980; Kirsch, & Wickless, 1983) and that research on self-efficacy in numerous sport and physical activity settings has shown a consistent significant relationship between self-efficacy and performance. In the present study the term self-efficacy was used expressing the participants' self-confidence to perform the service skill technique. Studies that have been conducted to investigate the causal relationships in Bandura's theory of athletic activities (Feltz, 1982, 1988; Feltz & Mugno, 1983) have been consistent in showing that performance factors and perceived self-efficacy are both need to explain performance. Recently researchers combine self-talk with psychological skills, as goal setting and self regulation having positive results on students' performance (Kolovelonis et al., 2012).

However, it doesn't know enough the effect of self-talk on volleyball skill performance. The relation between self-talk and athlete self-efficacy also is not known yet and how it affects athletes' performance. Therefore, the aim of the present study was to identify the effect of positive self-talk for technical instruction in learning the volleyball service skill and the improvement of volleyball athletes' self- efficacy. On the basis of the research literature it was hypothesized that self-talk would improve volleyball service skill learning and also athletes' self–efficacy.

MATERIAL AND METHODS

Participants

Participants were 57 female volleyball players, 13 years old (M=12.83, SD=.97) and training experience of two years (M=1.99, SD=0.67). Participants were novices in overhand service (they were teach overhand service for first time). The participants were assigned in two groups, experimental (athletes of one sport club, n=28, ISTG, instructional self-talk) and control group (athletes of another sport club, n=29, CG, traditional teaching) and they were taught the volleyball overhand service skill. The athletes participated in the experiment after having obtained written permission from their parents.

Measures

Three measurements were taken. More specifically, the athletes were measured at the beginning in order to establish that all started at the same level of technique and self-efficacy (pre-test). After the completion of the intervention the final measurements were taken, to note the impact of the intervention on the players' performance in service skill (post-test). One week later, in which athletes didn't practice at all, the retention measurement was made, to establish whether the learned skill of the volleyball overhand service had been maintained (retention test).

In the first training unit, after the warm up, participants performed a set of five trials (warm up in service). Afterwards, the evaluation test of service was conducted. The participants performed 10 attempts, while in the mean time all the attempts of participants were videotaped. The instruction that was given to all participants before the attempts was: "do the best you can...". The video camera was placed 6m distance and in 45o angle on the right of each participant (if the participant used the left hand, the video camera was placed in the left, in the same distance and angle).

Next day, the participants were informed about their scores in the test, and they filled out the self-efficacy questionnaire (Theodorakis, 1996). After four weeks of intervention program there was a second measurement in overhand service skill technique and the self-efficacy questionnaire was fulfilled once more by the athletes. The third measurement (retention test) of service technique and also the self-efficacy questionnaire was fulfilled a week after the post-test without practice (in service skill).

Instruments

Evaluation of technique

In order to evaluate athletes' ability in service technique, they were videotaped while executing 10 attempts. Two experts in volleyball (volleyball coaches) observed the video and they evaluated the athletes' performance in five technical elements of the skill. Intra and inter reliability of observers was checked (test-retest reliability). The score in the check list (five technical elements), was "one" for correct and "zero" for the wrong performance. The perfect performance was evaluated as 50 points [10 attempts X (5 elements X 1 point)].

Evaluation of self-efficacy

A common format for evaluating perceived self-efficacy was used (Theodorakis et al., 2000; Theodorakis, 1996). Participants were informed on their scores in performance on the service test and then indicated their performance of self-efficacy by responding to question such as "In this specific test of service, I can achieve a score of….." they indicated the magnitude of self-efficacy by replying to the question. "How certain you are?" on a 10-point scale anchored by absolutely certain (10) and uncertain (1). Subjects rated

their self-efficacy estimations for performance levels ranging from 10 to 40. Cronbach's alpha was 0.76, 0.79, and 0.81 for the three measurements, respectively.

Reliability of instruments

To examine the reliability of measurements test-retest reliability method was used (Pearson, r > 0.8). Correlation Pearson's analysis between two groups revealed that there was significant correlation between first and second measure in service technique (r=0.95) and self-efficacy questionnaire (r=0.88), which certify the reliability of measurements.

Observers' reliability

The two observers were volleyball athletes for ten years, students of volleyball specialization of department of sport science and they were also juniors' volleyball coaches for three years. They were trained by the first author of study who was an expert coach in volleyball. During the evaluation they didn't know if the athletes were in experiment or control group. The intra-observer reliability test was assessed with the observation and recording in one day of ten athletes in the experiment and the observation and recording of the same athletes on the following day by the same observer. The first and second evaluation of observer was correlated and the correlation was significantly high (r=0.86). The inter observer reliability test was assessed with observation and recording the same ten athletes by two observers. The coefficient correlation was relatively high (r=0.78).

Practice procedure

Before the intervention program, in the first unit, participants of experimental group received an informational sheet where the description of the correct technique of service was given and there was also information on what is self-talk and how it works. After that, in the main part of training unit four sets (four drills) of ten repetitions were conducted. The whole intervention program lasted four weeks, two training sessions per week. Participants of the control group performed the program having in mind the instruction "perform as best as you can….". In the beginning of each training session the coach provided verbal information feedback (in five technique elements of service skill) to the participants.

Participants of the experimental group received the instruction to use the self-talk for technique "when I throw the ball, the arm goes back, over the head, look at the target and hit the ball…" which was replaced later with "target, throw, and hit…". In the beginning of the training, coach reminded them to use self-talk out loud. Participants of both groups performed four drills (X10 services) in each training session for improving the service technique.

Statistical analysis

SPSS for Windows 13.0 was used for the analysis of the results. Homogeneity of variance was obtained and ANOVA Repeated Measures (2 group X 3 measures) analysis was used. Mauchly's test of Sphericity was not significant, which confirmed the appropriateness of the test.

RESULTS

Initial analysis

T-test analysis for Independent samples revealed that there were no significant differences in service skill performance between the groups for the baseline measure (p=0.213) and self-efficacy (p=0.291), which means that participants were started of the same level of learning and self-efficacy. In table 1 are shown the means and standard deviations of groups in the baseline measurement.

Table 1. *Means and standard deviations of groups in the baseline measurement.*

	Group	N	M	SD	t(55)
Service skill technique	*ISTG*	28	34.44	5.29	1.26 p=0.213
	CG	29	33.97	4.41	
	Total	57	33.97	4.88	
Self-efficacy	*ISTG*	28	4.57	1.6	1.07 p=0.291
	CG	29	4.15	1.32	
	Total	57	4.36	1.47	

Self-talk effect in service skill learning

ANOVA Repeated Measures (2 group X 3 measures) analysis revealed significant "Group" X "Measurement" interaction ($F(2,110)=17.73$, $\eta 2=0.244$, $p<0.01$), between the measurements (pre-test, post-test, retention test) and also revealed a significant "group" ($F(1,55)=31.12$, $\eta 2=.361$, $p<0.01$) and "measurement" effect ($F(2,110)=84.21$, $\eta 2=0.605$, $p<0.01$). Analyzing the interaction paired t-test analysis for the measurements were used. The results indicated that participants of the ISTG (Instructional self-talk group) improved performance from first (M=34.64, SD=4.92) to second measurement (M=45.07, SD=2.26, $t(27) =-14,58$, $p<.01$), from first to the third measurement (M=44.04, SD=2.54, $t(27) =-10,61$, $p<0.01$) and from first to third measurement ($t(27) =-2,4$, $p<0.01$).

For the CG (control group) the participants improved performance from pre (M=33.21, SD=3.59, $t(28) =-11,03$, $p<0.01$) to post-test (M=38.10, SD=5.28) but there was a decrease in retention test (M=35.62, SD=7.22, $t(28) =-1,87$, $p>0.01$). Finally, the results indicated that participants of both groups improved service skill; however the ISTG (instructional self-talk) group was better than the CG (control group) in the post and retention test (Figure 1).

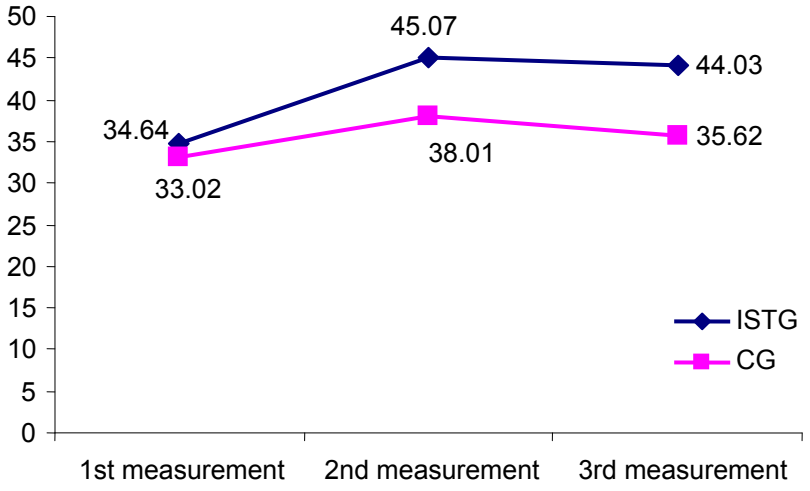

Figure 1. *Performance of the group in service skill in three measurements (p<0.01).*

Self-talk effect in self-efficacy improvement

ANOVA Repeated Measures (2 group X 3 measures) analysis revealed significant interaction ($F(2,110)=55.48$, $\eta 2=0.502$, $p<0.01$), between the factors "group" and "Measurement" (protest, posttest, retention test) in self-efficacy scores. There was also significant "measurement" effect ($F(2,110)= 82.97$, $\eta 2=0.601$, $p<0.01$), and also "group" effect ($F(1,55)= 52$, $\eta 2=0.486$, $p<0.01$). Analyzing the interaction paired t-test analysis for self efficacy measurements were used. The results indicated that participants of the ISTG (Instructional self-talk group) improved self-efficacy performance score from first (pre-test) ($M=4.57$, $SD=1.59$) to second measurement (post-test) ($M=7.91$, $SD=1.46$, $t(27) =-11,03$, $p<0.01$) and from first to the third measurement ($M=7.76$, $SD=1.32$, $t(27) =-10,05$, $p<0.01$).

For the participants of the CG (control group) results indicated that they had not improve self-efficacy performance score from the first (pre-test) ($M=4.15$, $SD=1.32$) to the second measurement ($M=4.36$, $SD=1.401$, $t(28) =-1,10$, $p>0.01$). The final mean score also didn't have any significant difference from the retention test ($M=4.62$, $SD=1.43$ $t(28) =-2,29$, $p<0.01$),) (Figure 2). The results indicated that participants of the ISTG (instructional self-talk group) improved self efficacy after the intervention.

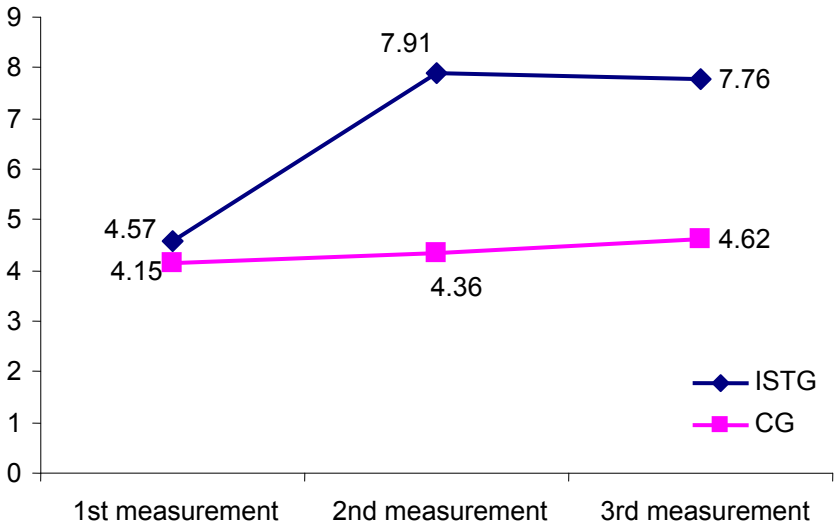

Figure 2. *Group scores on self-efficacy improvement in three measurements ($p<0.01$).*

DISCUSSION

The aim of the present study was to identify the effect of instructional self-talk in learning the service skill and self-efficacy improvement of novice female volleyball players. The results of this study supported the predictions. According to the first hypothesis, experimental group improved performance in service skill in relation to the control group, thus providing support for the effectiveness of instructional self-talk as a performance enhancing strategy. Furthermore, in line with the second hypothesis, the instructional self-talk group showed a higher improvement than the control group in self-efficacy scores, suggesting that instructional self-talk should be more appropriate for self-efficacy improvement.

Results indicated that participants of both groups improved the service skill, but the participants of the ISTG (self-talk group) were much better than participants of the CG (control group). When coaches deal with novice athletes it is recommended to teach them to use the instructional self-talk strategy, so as to perform quickly and correctly the skills. In the present study, participants of the experimental group claimed that self-talk possible helped them to focus their attention to the key points of the skill so as to manage to improve it.

According to the literature, self-talk is defined as internal dialogue that influences actions and emotional states. In several studies reviewed in the introduction section, positive self-talk was found to be associated with enhanced performance and optimal emotional states. In Perkos, Theodorakis and Chroni (2002) research revealed that self-talk helped basketball athletes to improve dribble and pass. Same results were found in Johnson, Hrycaiko, Johnson and Halas (2004), Hatzigeorgiadis, Theodorakis, and Zourbanos (2004), and Theodorakis, Weinberg, Natsis, Douma, and Kazakas (2000) studies, in which an intervention using self talk was used.

«Self-efficacy expresses the individual expectation of someone, who can manage perform successfully a particular activity. Self-efficacy is the self-confidence which someone feels in particular situations» (Theodorakis, Goudas, & Papaioannou, 2000, p. 87). As far as the improvement of self-efficacy concerns, the results showed that the participants of instructional self-talk group had better scores in self-efficacy compared to the control group. Instructional self-talk probably helps athletes to increase their self-efficacy. Johnson et al. (2004), Hatzigeorgiadis et al., (2007) and Morris and Andersen (2007) studies reached the same results.

More studies should be conducted, concerning self-talk either instructional or motivational in various sports and different ages of the athletes. It is suggested that instructional self talk could combine with other psychological skills (ex. goal setting) for better results in athletes' performance. Also it is possible to examine the way the self-talk works in the athletes, the moment that he/she performs, probably by using interviews or a questionnaire right after the execution.

CONCLUSIONS

What interests coaches and others who are involved in the sport training procedure, is to improve the coaching methods and the content of training, so as to produce expert athletes for the sport. Therefore, it is important for every coach to decide which practice should be used not only for improving the physical fitness, the technique, and the tactic, but also the developing of psychological skills. These psychological skills should support the procedure of learning and improvement of physical, technical and tactical skills.

Self-talk has been shown to be helpful for the compliment of novice and/or adult athletes by facilitating the improvement of their performance and also, for using it in sport and in everyday life activities. Athletes develop their self-confidence in general using self-talk, which leads to the improvement of the quality of life.

Finally, interventions including self-talk practice were more effective than those not including self-talk practice. The results of this study support the effectiveness of self-talk in team sports and encourage the use of self-talk as a strategy to facilitate learning, to enhance athletes' performance and to improve their self-efficacy, which is very important factor for novice athletes. Therefore, during the coaching procedure and if the goal is the improvement of technique, he/she should use the instructional self-talk.

REFERENCES

1. BANDURA A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychol. Rev.* 1977; 84:191-215. doi:10.1037/0033-295X.84.2.191 [Back to text]
2. BANDURA A. *Social foundation of thought and action: a social cognitive theory.* Englewood Cliffs, N.J.: Prentice-Hall; 1986. [Back to text]
3. BIGLAN A. A behavior-analytic critique of Bandura's self-efficacy theory. *Behavior Analyst.* 1987 10:1-15. [Back to text]
4. BOTTERILL C. Sport psychology and professional hockey. *The Sport Psychologist.* 1990; 4:358-368. [Back to text]
5. DEFRANCESCO C, BURKE KL. Performance enhancement strategies used in a tennis tournament. *International Journal of Sport Psychology*. 1997; 28:185-195. [Back to text]
6. FELTZ DL, MUGNO DA. A replication of the path analysis of the causal elements in Bandura's theory of self-efficacy and the influence of autonomic perception. *J. Sport Psychology.* 1983; 5:263-277. [Back to text]
7. FELTZ DL. Gender differences in the causal elements of self-efficacy on a high avoidance motor task. *J. Sport Psychology.* 1988; 10:151-166. [Back to text]
8. FELTZ DL. Path analysis of the causal elements in Bandura's theory of self-efficacy and an anxiety-based model of avoidance behavior. 1. *Pers. Soc. Psychology.* 1982; 42:764-781. doi:10.1037/0022-3514.42.4.764 [Back to text]
9. GOULD D, FINCH LMP, JACKSON SA. Coping strategies used by national champion figure skaters. *Research Quarterly for Exercise and Sport.* 1993; 64:453-468. [PubMed] [Back to text]
10. GREEN BS, SALKIND JN. *Using SPSS for Windows and Macintosh (3rd Ed.).* New Jersey: Pearson Education; 2003. [Back to text]
11. HACKFORT D, SCHWENKMEZGER P. Anxiety. In: R. N. Singer, M. Murphy, and L. K. Tennant (Eds.). *Handbook of research on sport psychology*. New York: Macmillan; 1993, 328-364. [Back to text]
12. HALLIWELL W. Providing sport psychology consulting services in professional hockey. *The Sport Psychologist.* 1990; 4:369-377. [Back to text]
13. HAMILTON RA, SCOTT D, MACDOUGALL MP. Assessing the effectiveness of self-talk interventions on endurance performance. *Journal of Applied Sport Psychology.* 2007; 19(2):226-239. doi:10.1080/10413200701230613 [Back to text]
14. HANTON S, MELLALIEU SD, HALL R. Self-confidence and anxiety interpretation: Aqualitative investigation. *Psychology of sport and exercise.* 2004; 5:477-495. doi:10.1016/S1469-0292(03)00040-2 [Back to text]
15. HARDY J, GAMMAGE K, HALL CR. A descriptive study of athletes self-talk. *The Sport Psychologist.* 2001; 15:306-318. [Back to text]
16. HARDY J, HALL CR, ALEXANDER MR. Exploring self- talk and affective states in sport. *Journal of Sports Sciences*. 2001; 19(7):469-475. doi:10.1080/026404101750238926 [Back to text]
17. HARDY J, HALL CR, HARDY. Quantifying athlete self-talk. *Journal of Sports Sciences.* 2005; 23:905-917. doi:10.1080/02640410500130706 [Back to text]
18. HARVEY DT, VAN RAALTE JL, BREWER BW. Relationship between self-talk and golf performance. *International Sports Journal.* 2002; 6:84-91. [Back to text]
19. HATZIGEORGIADIS A, THEODORAKIS Y, ZOURBANOS N. Self-talk in the swimming pool: The effects of ST on thought content and performance on water-polo tasks. *Journal of Applied Sport Psychology.* 2004; 16:138-150. doi:10.1080/10413200490437886 [Back to text]

20. HATZIGEORGIADIS A, ZOURBANOS N, THEODORAKIS Y. The moderating effects of self-talk content on self-talk functions. *Journal of Applied Sport Psychology.* 2007; 19:240-251. doi:10.1080/10413200701230621 [Back to text]
21. HIGHLEN PS, BENNETT BB. Elite divers and wrestlers: A comparison between open and closed skilled athletes. *Journal of sport psychology.* 1983; 5:390-409. [Back to text]
22. HOLT NL. Coping in professional sport: A case study of an experienced cricket player. *The Online Journal of Sport Psychology.* 2003; 5:10. [Back to text]
23. JOHNSON JJM, HRYCAIKO DW, JOHNSON GV, HALLAS JM. Self-talk and female youth soccer performance. *The Sport Psychologist.* 2004; 18:44-59. [Back to text]
24. KAZDIN AE. Conceptual and assessment issues raised by self-efficacy theory. In: S. Rachman (Ed.). *Advances in Behavior Research and Therapy,* Vol. 1. Oxford: Pergamon Press; 1978, 177-185. [Back to text]
25. KENDALL G, HRYCAIKO D, MARTIN GL, KENDALL T. The effects of an imagery rehearsal, relaxation, and self-talk package on basketball game performance. *Journal of Sport and Exercise Psychology.* 1990; 12(2):157-166. [Back to text]
26. KIRSCH I, WICKLESS CV. Concordance rates between self-efficacy and approach behavior are redundant. *Cog. Ther. Res.* 1983; 7:179-188. doi:10.1007/BF01190071 [Back to text]
27. KIRSCH I. "Microanalytic" analyses of efficacy expectations as predictors of performance. *Cog. Ther. Res.* 1980; 4:259-262. doi:10.1007/BF01173658 [Back to text]
28. KIRSCHENBAUM DS, OWENS D, O'CONNOR A. Smart golf: Preliminary evaluation of a simple, yet comprehensive, approach to improving and scoring the mental game. *The Sport Psychologist.* 1998; 12:271-282. [Back to text]
29. LANDIN D, HEBERT EP. The influence of ST on the performance of skilled female tennis players. *Journal of Applied Sport Psychology.* 1999; 11:263-282. doi:10.1080/10413209908404204 [Back to text]
30. LANDIN D. The role of verbal cues in skill learning. *Quest.* 1994; 46:299-313. doi:10.1080/00336297.1994.10484128 [Back to text]
31. LODGE J, HARTE D, TRIPP G. Children's self-talk under conditions of mild anxiety. *Journal of Anxiety Disorders.* 1998; 12:153-176. doi:10.1016/S0887-6185(98)00006-1 [Back to text]
32. MADIGAN R, FREY RD, MATLOCK TS. Cognitive strategies of university athletes. *Canadian Journal of Sport Science.* 1992; 17:135-140. [PubMed] [Back to text]
33. MALLETT CJ, HANRAHAN SJ. Race modeling: An effective strategy for the 100m sprinter? *The Sport Psychologist.* 1997; 11:72-85. [Back to text]
34. MARTENS R. *Coaches guide to sport psychology.* Champaign IL: Human Kinetics, 1987. [Back to text]
35. MCAULEY E. Modeling and self-efficacy: A test of Bandura's model. 1. *Sport Psychologist.* 1985; 7:283-295. [Back to text]
36. MCPHERSON SL. Expert-novice differences in planning strategies during collegiate singles tennis competition. *Journal of Sport and Exercise Psychology.* 2002; 22(1):39-62. [Back to text]
37. MING S, MARTIN GL. Single-subject evaluation of a self-talk package for improving figure skating performance. *The Sport Psychologist.* 1996; 10(3):227-238. [Back to text]
38. MORRIS T, ANDERSEN MB. Psychological intervention programs for reduction of injury in ballet dancers. *Research in sports medicine.* 2007; 15:13-32. doi:10.1080/15438620600987064 [Back to text]
39. ORLICK T. *Psyched for sport: Mental training for athletes.* Champaign, IL Leisure Press; 1986. [Back to text]

40. PALMER SLA. Comparison of mental practice techniques as applied to the developing competitive figure skater. *The Sport Psychologist.* 1992; 6(2):148-155. [Back to text]
41. PAPAIOANNOU A, BALLON F, THEODORAKIS Y, AUWELLE YV. Combined effect of goal setting and self-talk in performance of a soccer-shooting task. *Perceptual and Motor Skills*. 2004; 98:89-99. doi:10.2466/pms.98.1.89-99 [Back to text]
42. PAPAIOANNOU A, THEODORAKIS Y, GOUDAS M. *For better teaching in physical education lessons.* Thessaloniki: Salto press; 1999. [Back to text]
43. PARK JK. Coping strategies used by Korean national athletes. *The Sport Psychologist.* 2000; 14:63-80. [Back to text]
44. PERKOS S, THEODORAKIS Y, CHRONI S. Enhancing performance and skill acquisition in novice basketball players with instructional self-talk. *The Sport Psychologist.* 2002; 16:368-383. [Back to text]
45. RUSHALL BS. The content of competition thinking. In: W. F. Straub, and J. M. Williams (Eds.). *Cognitive sport psychology.* Lansing, NY: Sport Science Associates, 1984; 51-62. [Back to text]
46. SLOGROVE L, POTGIETER JR, FOXCROFT CD. Thought sampling of cricketers during batting. S. A. *Journal for Research in Sport, Physical Education and Recreation.* 2003; 25:97-113. [Back to text]
47. THEODORAKIS Y, GOUDAS M, PAPAIOANNOU A. *Sport performance for excellence*. Thessaloniki: Christodoulidis press; 2000, 87. [Back to text]
48. THEODORAKIS Y, WEINBERG R, NATSIS P, DOUMA I, KAZAKAS P. The effects of Motivational versus instructional self-talk on improving motor performance. *The Sport Psychologist.* 2000; 14: 253-272. [Back to text]
49. THEODORAKIS Y. The influence of goals, commitment, self-efficacy and self satisfaction on motor performance. *Journal of Applied Sport Psychology.* 1996; 8:171-182. doi:10.1080/10413209608406475 [Back to text]
50. THOMAS TR, FOGARTY GJ. Psychological skills in training in golf: The role of individual differences in cognitive preferences. *The Sport Psychologist.* 1997; 11:86-106. [Back to text]
51. TSIGGILIS N, DAROGLOU T, ARDAMERINOS N, PARTEMIAN S, IOAKIMIDIS P. The influence of self-talk in self-confidence and in performance of handball test. *Inquiries in sport and physical education.* 2003; 1(2):189-196. [Back to text]
52. VAN RAALTE JL, BREWER BW, RIVERA PM, PETITPAS AJ. The relationship between observable self-talk and competitive junior players' match performances. *Journal of Sport and Exercise Psychology.* 1994; 16:400-415. [Back to text]
53. WANG L, HUDDLESTON S, PENG L. Psychological skill use by Chinese swimmers. *International Sports Journal.* 2003; 7:48-55. [Back to text]
54. WANLIN CM, HRYCAIKO DW, MARTIN G L, MAHON M. The effects of a goal-setting package on the performance of speed skaters. *Journal of Applied Sport Psychology.* 1997; 9:212-228. doi:10.1080/10413209708406483 [Back to text]
55. WEINBERG R, JACKSON A. Building self-efficacy in tennis players: A coach's perspective. *Journal of Applied Sport Psychology.* 1990; 2(2):164-174. doi:10.1080/10413209008406427 [Back to text]
56. WEINBERG RS, GROVE R, JACKSON A. Strategies for building self-efficacy in tennis players: A comparative analysis of Australian and American coaches. *The Sport Psychologist.* 1992; 6:3-13. [Back to text]
57. WEINBERG RS, SMITH J, JACKSON A, GOULD D. Effect of association, dissociation, and positive self-talk on endurance performance. *Canadian Journal of Applied Sport Sciences.* 1984; 9:25-32. [PubMed] [Back to text]

58. WILKES RL, SUMMERS JJ. Cognitions, mediating variables, and strength performance. *J. Sport Psychology.* 1984; 6:351-359. [Back to text]
59. ZIEGLER SG. Effects of stimulus cueing on the acquisition of ground strokes by beginning tennis players. *Journal of Applied Behavior Analysis.* 1987; 20:405-411. doi:10.1901/jaba.1987.20-405 [Back to text]
60. ZINSSER N, BUNKER L, WILLIAMS JM. Cognitive techniques for building confidence and enhancing performance. In: J.M. Williams (Ed.). *Applied sport psychology: Personal growth to peak performance* (4th Ed.). Mountain View, CA: Mayfield, 2001; 284-311. [Back to text]

