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# Do Elite Coaches from Disability Sport Use Psychological Techniques to Improve Their Athletes' Sports Performance?

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**Abstract**

Goal-setting, imagery, relaxation and self-talk are psychological strategies crucial for successful psychological preparation and consequently for the improvement of the athlete's sport performance. The coaches have an important role in the implementation of psychological skills training and may contribute to increase the use of psychological strategies by their athletes. Therefore, the purpose of this study was to examine the importance assigned to a group of psychological strategies (i.e., goal-setting, imagery, relaxation and self-talk) and its use in practice and competition setting by top elite coaches from disability sport. In-depth semi-structured interviews were conducted on ten elite Portuguese coaches. Content analysis was the qualitative methodology used for data analysis. Globally, the coaches acknowledge the importance of all four psychological strategies approached. However, the examination of the coaching routines on the application of psychological strategies suggested an undeveloped use of most of the strategies, specifically in the practice setting. Relaxation and self-talk were the most underused strategies. All the coaches reported the use of goal-setting in both the practice and competition setting. Overall, the present findings raise concerns about the effective contribution of Portuguese elite coaches for the development of successful psychological preparation among athletes with disabilities.

**Keywords:** coaches, goal-setting, imagery, relaxation, self-talk, qualitative methodology

## 1. Introduction

It is well known that psychological skills have a significant influence on athlete's performance achievements and personal development (Bonnar, 1997; Burton & Raedeke, 2008; Gould, Flett, & Bean, 2009). Highly successful athletes have great physical skills but also superior psychological skills that help them successfully deal with stress and pressure situations, to remain in control of emotions, to concentrate intensively and to set challenging but realistic goals. (Krane & Williams, 2006). In psychological training it is possible to distinguish between psychological skills and psychological techniques or strategies. Psychological skills training consists in a systematic use of psychological techniques (e.g., goal-setting, relaxation, imagery, and self-talk) in order to develop the psychological skills that coaches want their athletes to have (e.g., stress management and concentration) (Burton & Raedake, 2008). Therefore, psychological techniques are used to develop the athlete's psychological skills.

Goal-setting, relaxation, imagery and self-talk are the four psychological techniques referred to in the literature as powerful tools to enhance the development of psychological skills, and are usually developed in a combined process during psychological skills training programs. These four techniques are considered the workhorses in applied sport psychology once athletes can be taught how to control what they aim for and how they judge success (i.e., goal-setting), how to control their thoughts (i.e., imagery and self-talk) and how to control their activation levels, "pumping-up" or calming (i.e., relaxation) their mind and body (Lavalle, Williamns, & Jones, 2008).

In goal setting, athletes try to achieve a group of behavioural targets previously defined (Brewer, 2009). Goals help to focus attention and enhance an athlete's self-confidence and motivation (Burton & Raedeke, 2008). Although goal-setting is often used in the practice setting, focusing on goals is equally important in the competition setting. Goal-setting combined with self-talk will help the athletes to maintain focus on the goals during competition (Lavalle et al., 2008). Relaxation techniques require the ability to voluntarily decrease the amount of tension in muscles, calm the mind by keeping it productively occupied and decrease autonomic responses (e.g., heart rate, blood pressure) (Brewer, 2009). Relaxation strategies can be more physical in nature (e.g., deep breathing, progressive muscular relaxation) or more cognitive in nature (e.g., imagery of a quiet place).

Imagery is a powerful tool to help the athletes in the acquisition of new technical or psychological skills and consists in the creation of mental images associated to multiple senses and emotions (Brewer, 2009). Additionally, psychological benefits such as motivation, confidence and focus are related to the application of this technique (Hale, Seiser, Macguire, & Weinrich, 2005). Self-talk is typically described as the internal dialogue that athletes develop within themselves. The use of positive self-talk is very important in creating positive thoughts, feelings and behaviour in athletes, and consequently, in improving the sport outcomes (Brewer, 2009). Additionally, this strategy is useful to enhance the learning and execution of the correct skills (Lavalle et al., 2008).

Research has revealed that athletes with disabilities, just like any other, can benefit from the use of psychological techniques to improve their sport performance (Castagno, 2001; Hanrahan, 2007; Martin, 1999). Zoerink and Wilson (1995) found that athletes with intellectual disabilities are capable of setting goals in sports competition, understanding the meaning of winning and enjoying the challenge of competition. Harbalis, Hatzigeorgiadis, and Theodorakis (2008) suggested that the use of self-talk could be an effective tool for the improvement of performance in wheelchair basketball players. Eddy and Mellalieu (2003) emphasized the use of imagery by athletes with visual impairment when they studied a group of elite athletes. The authors found that goalball players use different forms of imagery (i.e., kinesthetic, tactile and spatial) in different moments (i.e., competition and practice).

Psychological skills training programs for athletes with disabilities are similar to those developed for athletes without disabilities (Harlick & McKenzie, 2000) and the challenge is to define the content of the preparation and the adaptation for each athlete individually (Page & Wayda, 2001). For instance, athletes with visual impairment can successfully use goal-setting, but they should have the opportunity to read and record information in Braille and tape record their goals (Hanharan, 1998). Athletes with physical disabilities such as amputations can develop the imagery technique but considerations have to be made regarding the use of prosthesis during sport performance in order to create the most suitable and realistic imagery sessions (Hanharan, 1995).

However, in order for athletes to successfully apply psychological techniques they need to learn the basic principles of each technique and be taught the most effective way to use them. In this context, the coach can have a crucial role in teaching their athletes how to use psychological techniques (Burton & Raedeke, 2008) in both training and competition settings. The coaches spend a great amount of time with their athletes and have the opportunity to enforce quality practice and to remind the athletes to use of psychological skills (Frey, Laguna, & Ravizza, 2003). Coaches must believe in the value of psychological training, understand their principles and apply them on a regular basis in the coaching plan.

Although the previously studies have demonstrated that athletes with disabilities can use psychological techniques to improve their performance, little is known about the routines of coaches from disability sport regarding the use of those same techniques. To our knowledge, no previous research has aimed to examine how elite coaches teach self-talk, imagery, goal-setting and relaxation to their athletes in both practice and competition settings. Knowing the importance that coaches assign to each specific psychological technique and its use in both competitive and practice settings can bring important insights about the relevance of psychological training in disability sport context. Therefore, the purpose of this study was to examine the importance assigned to self-talk, goal-setting, relaxation and imagery by Portuguese disability sport top elite coaches and how they use those techniques in the practice and competition settings.

## 2. Method

### *2.1 Participants*

The sample was composed of ten coaches (eight males and two females) ranging in age from 25 to 65 years (M=45.7yrs; SD=13.0yrs) and their experience as coaches of elite athletes with disabilities ranged from 2 to 22 years (M=10.3yrs; SD=7.2yrs). A purposive sampling was selected based upon two criteria: 1) elite status (i.e.,

all coaches were included in Paralympic Projects) and 2) sport representativeness (i.e., the sample represented four Paralympic sports, boccia n=3, swimming n=5, track and field n=5 and rowing n=1). Most of the coaches trained athletes with a physical disability and only one coached athletes with visual impairment.

All the participants coached athletes that had participated in major international competitions (i.e., Paralympic Games, World Cups, World and European Championships) and half of them were several times medaled in Paralympic Games. This research was reviewed and approved by the commission responsible for the ethical issues. All coaches gave their informed consent to participate in the study.

*2.2 Instrument*

The data were collected from a semi-structured interview with open-ended questions organized in accordance with the research questions of the study. Participants were informed about the goals of the study and structure of the interview. Before addressing questions related with the use of goal-setting, imagery, self-talk and relaxation (note: interview guide available from the first author), the coaches were briefly clarified about the meaning of each psychological technique. Globally, coaches were asked about the importance assigned to each psychological technique and its use in both competitive and practice settings. Lastly, opportunity was given to coaches to provide final comments regarding the interview topics.

The interview guide was pilot-tested with two goalball coaches, the national coach and his assistant coach (one male; one female) after which minor refinements were made to the guide. All interviews were transcribed verbatim and sent to each coach for validity check.

*2.3 Protocol and Data Analysis*

Interviews were analysed in a process of content analysis recommended by Patton (2002). The process involved three steps: 1) reading the material several times to deepen the main researcher's understanding of the content; 2) organizing raw data into meaningful themes and units that emerged from the participant's statements; and 3) finding common denominators and clustering the data into a content hierarchy induction of lower and higher themes (i.e., first and second order subthemes) until it is no longer possible to generate a new level of thematic representation (i.e., general dimension). To control individual bias and ensure verifiability of the findings, all the data were presented and discussed with another author to act as "devil's advocate" (Marshall & Rossman, 1995). Through critical questioning, methods, procedures and content analysis were analyzed by both researchers. All comments or queries raised were acknowledged, discussed and clarified to reach a suitable consensus. Finally, the first author reread the interview transcripts while comparing them and validating them against the first-order, second-order and general dimension, ensuring that research questions were being answered and no relevant data had been inadvertently excluded or irrelevant data included.

## 3. Results

The inductive-deductive analysis exposed four general dimensions (goal-setting, imagery, self-talk, and relaxation) emerging from seventy-nine raw data themes mentioned by the elite coaches. The dimensions were abstracted from eleven second-order subthemes and these from seventeen first-order subthemes. The general dimensions are represented in Figures 1-4.

*3.1 Goal-Setting*

When the subjects were asked about their routines regarding the definition of goals in the training and competition settings, twenty-five raw data themes were identified (Figure 1). This dimension emerged from four second-order subthemes: importance, operationalization, application in competition and application in competition.

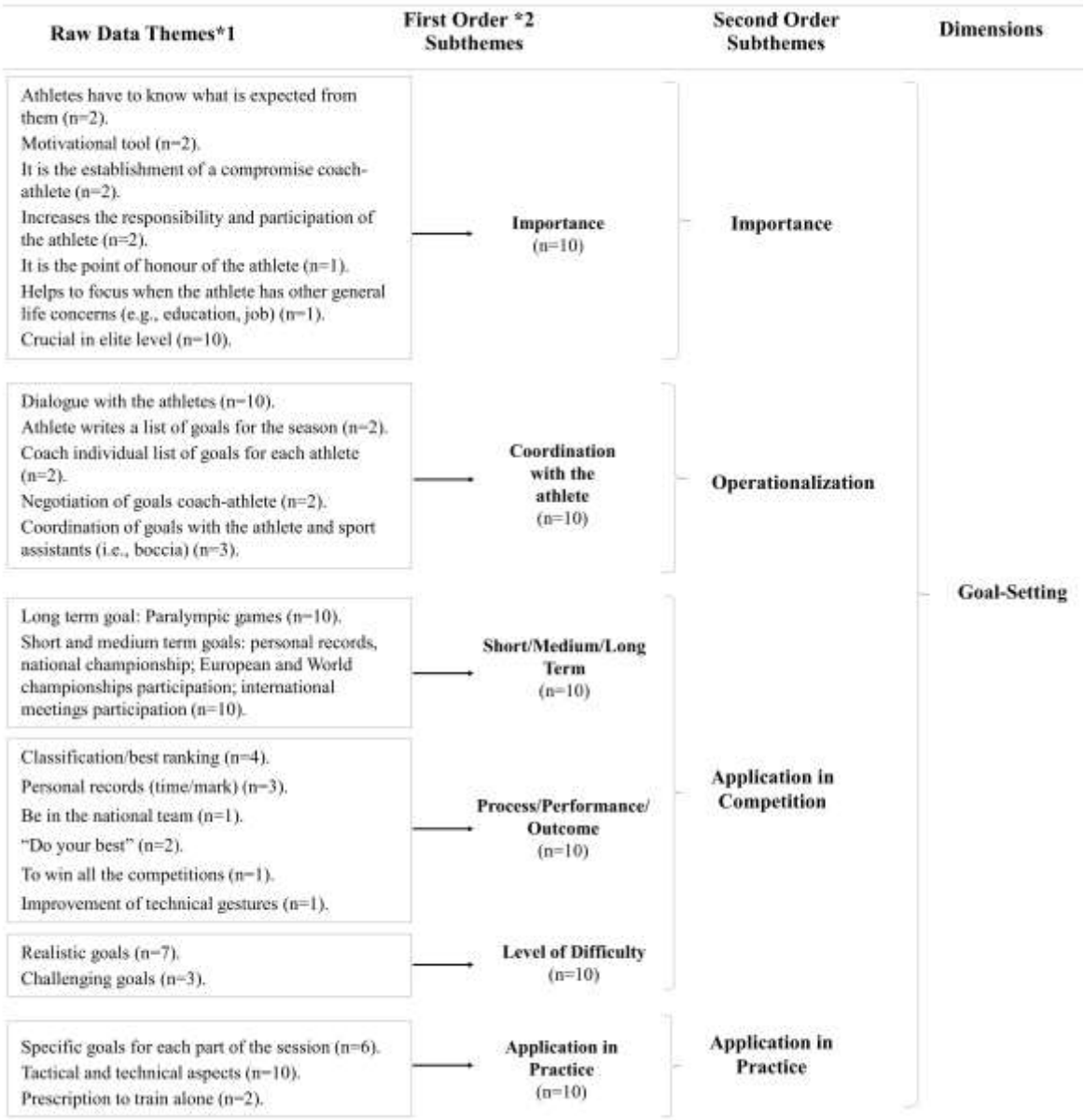


Figure 1. Perspectives on the training of goal-setting technique

Regarding the first second-order subtheme, the importance of goal-setting, all the participants considered the definition of goals as crucial in the elite level. One coach confirms this thought as she shares:

> "High competition is cruel, only the strongest survive and we need to have goals…without goals a swimmer does not wake up at 6am to go to the swimming pool."

Different perspectives were pointed out by the coaches to explain the importance of goal-setting. Two coaches considered goals a motivational tool, and another argued about the increase of responsibility and participation since the definition of goals implies a commitment between athlete and coach. A swimming coach explained that goals were very important to keep the athlete's focus in the sport task when, simultaneously, the athlete has to deal with other demands (e.g., general life concerns).

An emergent theme in all the interviews was the importance of coordinating with the athlete the establishment of goals. One coach even mentioned:

> "It's crucial to have a balanced process between coach and athletes."

All the coaches have the routine to dialogue with the athletes informing them about the tasks to perform and the expected outcomes. However, only two coaches made this process in a formal way, asking the athletes to write their individual goals and then connect it with the coaches' goals. Two coaches also highlighted the negotiation of goals between coach and

athlete. The three boccia coaches also mentioned that in this specific sport the coordination of goals has to be done with the athletes but also with the sport assistant, respectively, as stated in the following quotes:

> "We cannot dissociate the athlete from his/her sport assistant, otherwise we forget one of the key parts; if the sport assistant doesn't share the same goals we have a problem."

> "In BC1 and BC3*[3] class, the pairs, athlete and sport assistant, define their goals for the season."

When coaches were asked about the application of goal-setting, competition setting provided three first order sub-themes: 1) short/medium/long term goals; 2) quantitative/qualitative goals; and 3) level of difficulty. All the participants settled goals according to the different moments of the sport season and according to the Paralympic cycle. The coaches also explored the different nature of the goals (quantitative/qualitative). Lastly, most of the coaches considered that goals have to be defined in a realistic way, according to the level of the athlete's abilities. The next sentence expresses this idea:

> "Have to be realistic. The worst thing that can happen is an unrealistic goal that is not accomplished, it's a trauma."

In the practice setting, six coaches explained that in all training sessions the goals of each part of the session were clearly established. All the participants mentioned goals related with technical and tactical aspects of the sport. One boccia coach even mentioned goals regarding the choice of the material to play (e.g., type of balls). The rowing coach and a track and field coach explained that during specific periods of time their athletes trained by themselves following the training plans with the tasks and goals previously set by the coach.

*3.2 Imagery*

This dimension contained eighteen raw data themes abstracted into two second-order subthemes: 1) importance and 2) application (Figure 2).

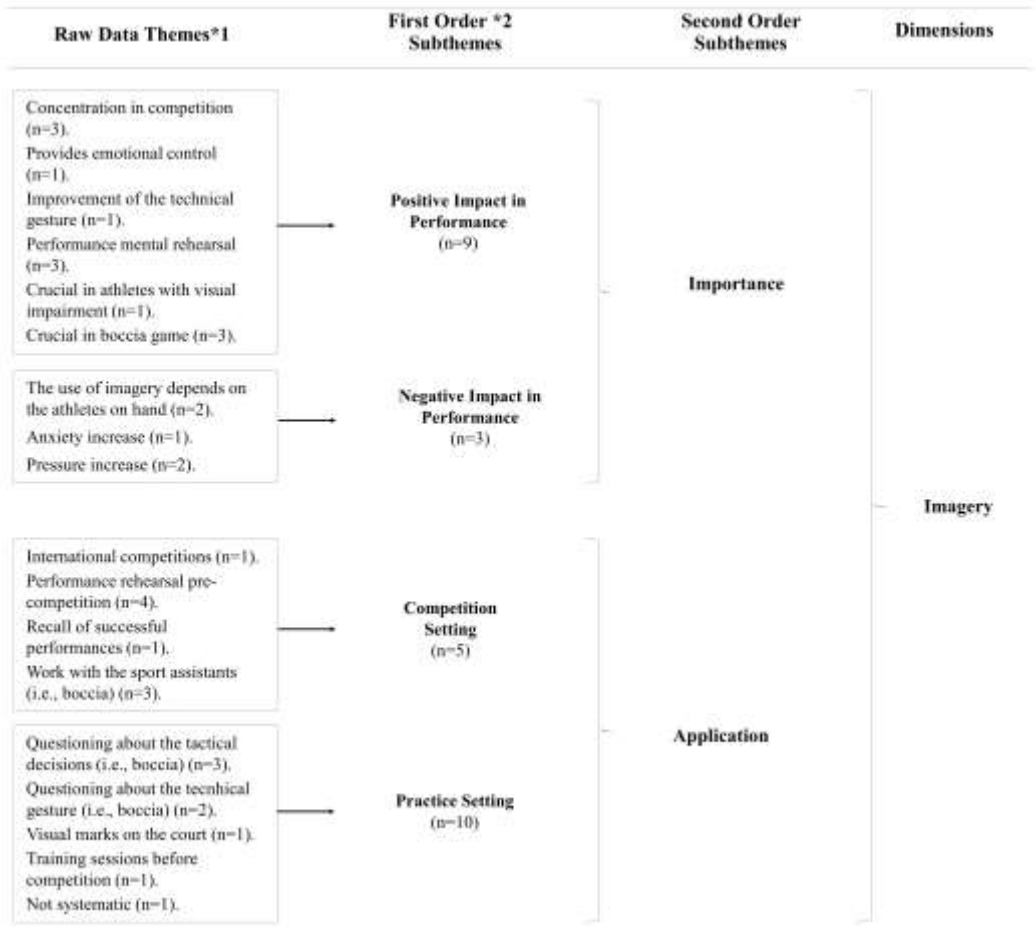


Figure 2. Perspectives on the training of imagery technique

Regarding the first second-order subtheme, importance of imagery, nine coaches focused on the positive impact that imagery has in athletic performance. The positive impact of imagery techniques in concentration (n=3) was highlighted. Three coaches pointed the importance of imagery for performance rehearsal and one even mentioned improvements in the technical due to imagery use. Two specific disability issues were raised concerning athletes with visual impairment and the boccia game. The track and field coach that works with elite athletes with visual impairment considered imagery to be particularly important in cases of lack of accuracy to see. The coach said:

> "Since they [the athletes with visual impairment] don't have the visual references to control the running speed, I have to help them to build the mental images giving other references … The images have to be created according to proprioceptive components."

The boccia coaches considered imagery crucial due to the accentuated tactical characteristics of this specific sport. The following quotation is quite representative of that:

> "Boccia is like chess, it requires a strong mental representation of what the athlete has to do technically and tactically …For the athlete to be able to anticipate the opponent game, imagery has to work…"

However, three coaches revealed that not all the athletes seem to benefit from the use of imagery. Imagery implies a focusing in the performance that may increase anxiety (n=1) and pressure (n=2) within the athlete.

Applied imagery training was predominant in the competition setting (n=6), although four coaches also mentioned its use in the training setting. In the competition setting, coaches from different sports (i.e., boccia, swimming and track & field) used imagery to promote performance rehearsal of the athletes in pre-competitive moments (e.g., the night before competition, moments before leaving the hotel for the competition venues, or during warm up). One boccia coach also stated to encourage the athletes to focus on success by recalling past games when the athlete was successful. All the boccia coaches were unanimous to refer to the participation of sport assistants in the training of imagery. Since sport assistants spend more time with a specific athlete than the coach, the coaches explained that it is necessary to give instructions to the sport assistants to work on this technique with the athletes in several moments during the competition events.

In the training setting, the work of the boccia coaches was again noticed. The three coaches explained that they had a systematic intervention during training sessions, constantly asking athletes about their tactical and technical decisions. One coach even mentioned the use of visual marks in the court to help athletes to visualize the expected route of the balls before throwing. However, the coach also alerted that despite the effort of the coaches to promote the use of imagery by the athletes, she has serious doubts about the systematic use of this technique by the players. One track and field coach also mentioned the use of imagery in the training sessions prior to competing. For that reason he did not consider it a systematic intervention.

*3.3 Self-Talk*

The self-talk dimension shows the coaches' perspectives on the use of self-talk with their athletes, and included eighteen raw data themes that merged into three second-order subthemes: 1) importance, 2) operationalization and 3) application (Figure 3).

Only six coaches clearly pointed out the importance of self-talk, specifically as a motivational strategy (n=4) and to maintain concentration over time (n=1). One boccia coach explained that during the game the players have to be constantly talking with themselves about the tactical decisions and the corrections of the technical gestures. Two coaches put in evidence the benefits/disadvantages of positive and negative self-talk.

Only three coaches mentioned the operationalization of the self-talk technique. Two of the coaches explained that their intervention was based on intuition and not scientifically supported. Dialogue was conducted with the athletes with two different aims: 1) to highlight abilities and capacities and 2) to spur.

When coaches were asked about the application of specific strategies to promote positive self-talk in athletes four mentioned the use of trigger words (note that three of them were boccia coaches), and three argued about the use of specific gestures with the athletes.

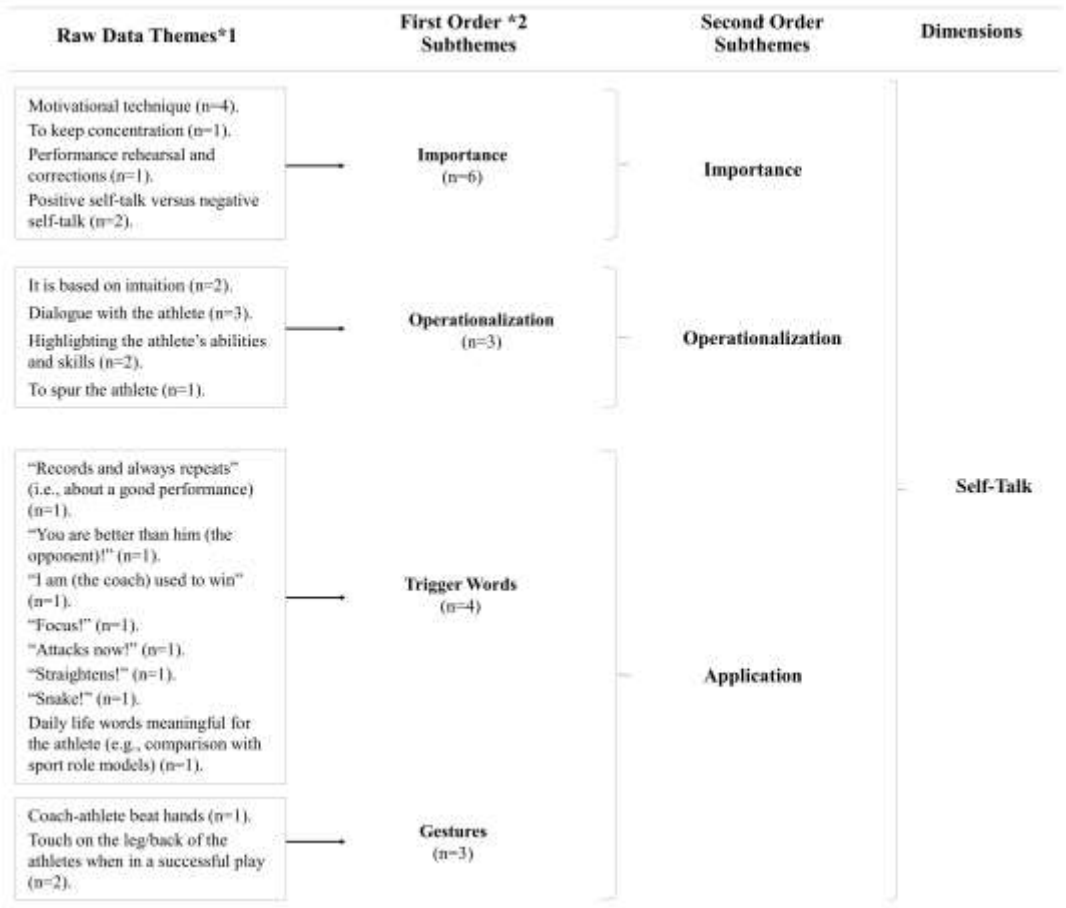


Figure 3. Perspectives on the training of self-talk technique

*3.4 Relaxation*

The relaxation dimension included eighteen raw data themes that were merged into two second-order subthemes: 1) importance and 2) application (Figure 4).

Most of the coaches acknowledge the importance of the relaxation technique and considered it a useful technique to improve psychological skills as stress and anxiety management (n=2), self-confidence (n=1), emotions control (n=1) and concentration (n=1). Both practice and competition settings were mentioned as important in the application of relaxation techniques.

All the boccia coaches mentioned the specific impact that the relaxation technique has in the performance of boccia players due to the physical consequences of cerebral palsy. The following quote depict this perspective:

> "This is [relaxation] indispensable to improve the quality of the technical gesture, especially in athletes with more spasticity. If the athlete is too stressed he won't be able to achieve the maximal range of movements. Physical relaxation allows the achievement of that range of movements and athletes feel more confident."

Although most of the coaches showed awareness about the benefits of relaxation, only half of the sample applied this technique. Moreover, from those five coaches only two assumed that relaxation was promoted by themselves but in a non-systematic way. The other three coaches explained that physiotherapists that supported the national team of boccia in international competitions developed relaxation techniques. Muscular relaxation was the most referred technique used in the competition setting.

Half of the sample mentioned several barriers to justify the lack of applied training of relaxation, namely lack of knowledge (n=4), lack of time (n=2) and lack of proper training conditions (n=2), as stated in the next sentence:

> "To correctly apply relaxation techniques I need specific training condition (i.e., calm and relax venue). I need time to develop the techniques and quite often I don't have those conditions in my training

setting …Besides, in my opinion, it's a very technical procedure that requires learning and should be applied by a specialist."

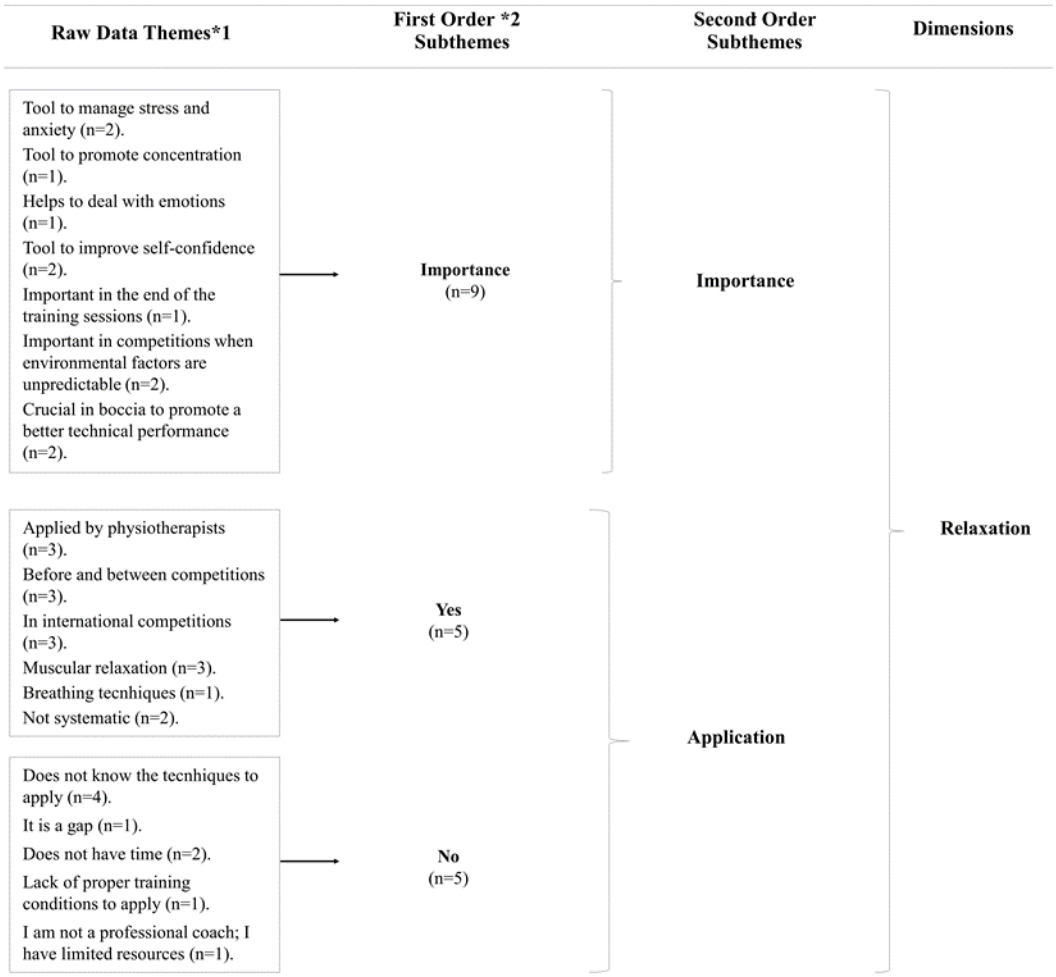


Figure 4. Perspectives on the training of relaxation technique

## 4. Discussion

The purpose of this research was to conduct an in-depth examination about the importance of psychological techniques (i.e., goal-setting, imagery, self-talk, and relaxation) by top elite coaches from disability sport. Moreover, the use of those techniques was analysed in both training and competition settings. Globally, the majority of the coaches acknowledged the importance of psychological techniques to enhance the psychological preparation of their athletes. However, the coaches do not develop a systematic training of those techniques in the competition and practice setting. In some cases coaches simply do not apply some techniques such as relaxation and self-talk. The coaches are aware of the importance of the psychological training but do not apply psychological strategies on daily-basis. The lack of knowledge on how to apply these strategies and the lack of time to include these contents in the training session (Gould, Medbery, Damarjian, & Lauer, 1999) may undermine the coaches' willing to develop a regular psychological training.

Goal-setting is considered one of the most effective means to promote motivation and direct athletic behaviour (Burton, Naylor, & Holliday, 2001; Gould, 2001). Several benefits result from this technique such as enhancement of focus and concentration, self-confidence, intrinsic motivation and improvement of overall performance (Burton and Raedeke, 2008). That is why setting goals is the basis of any psychological training (Porter, 2003). The importance of goal-setting was also clearly demonstrated by the participants of this study. All

coaches acknowledge the importance of goal setting in elite sport. Enhancements of motivation and of attentional control were some of the advantages pointed out.

An interesting idea was presented by two coaches that highlighted the role of goals as a way to establish a compromise between athletes and coach, and consequently increase the responsibility of the athlete in the achievement of the established goals. All the coaches considered that goals have to be settled in coordination with the athlete. Allowing athletes to participate in setting their own goal and encouraging them to write down their goals are some strategies that increase the athlete's commitment to achieve the goals (Burton & Raedeke, 2008). In addition, asking athletes to record goals in written form and return them in to the coach is a good strategy to monitor the progress toward goal achievement and make adjustments overtime (Caruso, 2004; Gould et al., 2009). However, only two coaches mentioned doing it on regular basis. It is necessary to invest in the educational background of coaches giving them practical tools to fully explore goal-setting technique. This could be achieved by including more hours to approach the psychological contents in the training and education of the coaches (Bastos, Corredeira, Probst, & Fonseca, 2012).

A specific disability issue was raised by the three boccia coaches regarding the importance of setting goals in coordination of the athlete and his/her sport assistance. It is known that in some specific sport events athletes with disabilities need the assistance of another practitioner without disability to assist in their performance. For example, in track and field events, runners with visual impairment (i.e., B1 and B2 class) depend on a guide athlete to perform while in boccia, some athletes with cerebral palsy (i.e., BC1 and BC3 class) play in straight collaboration with a sport assistant. In this regard, Bawden (2006) argued that there is no interest to work the psychological skills of the athlete if their guide or assistant does not share the same psychological approach. For example, it is necessary to understand if the sports assistants are able to perform in highly stressful environments and to ensure that they are mentally prepared to adequately respond to those demands. For this reason the boccia coaches from the present study considered fundamental to include the boccia assistant in the process of goal-setting making it a combined process between the athlete and sport assistant.

It is clear that all coaches use goal-setting in the training and competition setting. In this sense, it is important to understand if they do it properly exploring all principles of goal-setting. Regarding the type of goals that coaches set for competition, all participants mentioned short-medium and long term goals, being the participation in the Paralympic Games the "dream" goal of all the coaches. This is a very important procedure since having specific goals throughout the sports season is one of the most powerful to increase performance (Porter, 2003). Coaches use intermediate goals to constantly offer encouragement and positive reinforcement toward reaching high levels of performance (Caruso, 2004). Most of the coaches set outcome and performance goals for competition; however, literature has shown that the best way to achieve outcome goals is to focus on process and performance goals. Process and performance goals require the development of skills and strategies necessary to achieve outcome measures (Weinberg, Harmison, Rosenkranz, & Hookom, 2005). In the practice setting the emphasis was given to process goals related with the improvement of technical and tactical aspects of the sport.

Literature is unanimous in describing effective goals as realistic yet challenging (Burton & Raedake, 2008; Caruso, 2004; Weinberg et al., 2005). Most of the coaches chose to set realistic goals according to the individual characteristic of the athletes and their level of ability and three highlighted the need to have challenging goals to push athletes to the limit. Moderately difficult goals promote the best gains in performance (Burton et al., 2001) since they are difficult enough to demand effort and persistence but easy enough to allow realist success (Burton & Raedeke, 2008).

Overall, coaches use goal-setting in both the practice and training setting and considered a technique of higher importance in elite sport. However, further applied research should introduce coaches to a formal goal-setting program in order to explore all the strategies that can be implemented in order to set the most effective and right king of goals. The majority of the coaches acknowledge the positive impact of imagery in sports performance. Three main ideas were focused: 1) the improvement of psychological skills (i.e., concentration and emotions management); 2) the improvement of technical performance; and 3) sport-specific (i.e., boccia) and disability-specific (i.e., athletes with visual impairment) issues.

The benefits of imagery use regarding the development of physical and psychological skills are reported in general literature (Burton & Raedeke, 2008; Hale et al., 2005). All the boccia coaches highlighted the greater importance of imagery for the boccia game. Since boccia is mainly a tactical game supported in cognitive processes (Marta, 1998), one of the psychological requirements is the ability to constantly visualize the game strategy and anticipate the game of the opponent. To instill the use of this strategy the coaches constantly question the athletes about their tactical and technical decisions. Therefore, athletes will have to think and

visualize their moves before they play. In this context, the boccia coaches also highlighted the important role of the athletes' sport assistants. The sport assistant spends more time with the athlete than the coach, so a collaborative work between the coach and sport assistant is needed in order to instill the use of imagery techniques. The need to share the psychological training with the practioners that support the performance of athletes with disabilities (i.e., athletes-guide of athletes with visual impairment and sport assistants of boccia players) was also highlighted by Bawden (2006) as we have previously mentioned.

Imagery was also considered of great importance for athletes with visual impairment. Athletes with visual impairment are able to create vivid visual images and movement images (Hanharan, 2007). The coach showed awareness about the need to help athletes to create their mental images. This is a positive contribution since athletes may create their images based on what sighted people describe to them.

Although most of the coaches mentioned the benefits of imagery in performance, some participants also highlight the negative impact of this skill. The main reason was related with the increasing anxiety and pressure feelings that athletes may feel when using imagery. It was suggested that not all the athletes were able to successfully use imagery techniques. Likewise, Murphy and Martin (2002) mentioned several situations when imagery can be detrimental for performance: 1) creates too much anxiety; 2) directs attention to irrelevant stimulus; 3) creates negative images of failure or mistakes; and 4) makes the athletes overconfident. The fact that different athletes may have antagonistic outcomes of imagery use is very important information for coaches. Coaches have to be aware of the individual psychological characteristics of their athletes in order to understand which psychological techniques will suite them better. Nevertheless, the coach can provide useful help in teaching athletes to create clear and controllable images. This is crucial for the athletes who have low imagery ability but also for those with higher imagery ability who want to get the most of the imagery training (Burton & Raedeke, 2008).

Regarding the use of imagery techniques in both training and competition settings, there was a clear prevalence of its application in competition for performance rehearsal and recall of successful performances. Since the participants of this study are coaches of elite athletes that have accomplished major results in international events, the recall of successful performance can be a very important imagery strategy to apply. Athletes can recall experiences with great vividness and detail helping to focus on positive images and increase motivation (Burton & Raedeke, 2008). Only one coach reported the use of this technique for a similar purpose. With the exception of boccia coaches, almost none of the remaining reported the use of imagery during training sessions. This is a concerning fact since imagery, just like any other skill, has to be consistently practiced in order to strengthen the ability to use imagery in competition (Hale, 1982).

When coaches were asked about the importance of self-talk only six participants pointed out the benefits of this technique. Most of them saw self-talk as a powerful tool to increase motivation in their athletes. The use of positive self-talk is important to instill a sense of optimism and directs the athlete's focus to the task in hand (Gould et al., 2009). Two coaches highlighted the need to increase positive self-talk against negative self-talk. According to Porter (2003), the negative thoughts results from outside influences that lead the athlete to think that he or she is not good enough and are detrimental for sports performance. Therefore, coaches need to understand positive thought patterns that facilitate performance (Burton & Raedake, 2008), which in the case of the coaches participating in this study.

When asked about specific strategies to increase positive self-talk only a reduced number of coaches mentioned the use of trigger words and gestures in competition setting. Trigger words are cues that can be used to instill confidence (Caruso, 2004), to combat negative thoughts and short-circuit negative talk (Porter, 2003). The trigger words described by the coaches of the sample represent some of those roles. Some coaches use cues that usually are not true at the time but supports what they want to be true (Porter, 2003), and the word "snake" mentioned by one the coaches is a good example of it. It is a word that is meaningful for the athlete and the coach and represents the way that the athlete wants to view him/herself and his/her abilities. Some coaches also mentioned the use of meaningful gestures between the athlete and coach as a way to promote a positive reaction of the athlete, motivating and keeping thoughts controlled.

The results of the present study showed that a small number of coaches have concerns about the implementation of positive thought patterns in their athletes and, once more, the competition is the moment when coaches invest in this specific psychological strategy. This situation clearly limits the benefits of self-talk since rehearsing the cues or trigger words in practice allows the simple word or phrase to take on powerful meaning (Caruso, 2004) and an immediate effect on the athlete.

Most of the coaches considered the relaxation technique as an important tool, but only half of them develop some kind of training for it. The present findings need to be carefully analysed since most athletes have never been taught the basic requisites of this technique or simply do not know how to relax on command (Burton & Raedeke, 2008). In these cases, the coach assumes an important role to teach and raise awareness of the athletes for the importance of relaxation techniques and how to develop them.

Stress management, concentration, self-confidence and emotions management were mentioned by the coaches as psychological skills that would benefit from relaxation training. The literature also highlights the several benefits from relaxation such as the ability to cope with the pressure of competition, particularly in the highest levels (Hanton, Thomas, & Mellalieu, 2009). This is considered crucial for the success in sport since it helps athletes to feel better and free their minds to be successful in the performance of other psychological skills. One of the coaches highlighted the importance of relaxation in the competition setting due to the unpredictable nature of the competitive context. However, it is necessary to keep in mind that the ability to quickly attain a relaxed physical and mental state, according to the athletes' will, have to be progressively trained in different situations (i.e., stress-free environments, non-threating situation, non-sporting stressful environments, sports practice and fully competitive events) (Hanton, et al., 2009). Coaches cannot expect athletes to apply relaxation techniques in competition environments if those techniques were not systematic approach previously. To be effective, coaches have to teach athletes to develop relaxation skills that work quickly during practice and competition (Burton & Raedeke, 2008).

A specific-disability issue was raised by two boccia coaches in relation to the greater importance of relaxation in athletes with cerebral palsy. It is known that athletes with cerebral palsy suffer abnormal reflex activity during competition (Sherrill, 2004) and the increment of anxiety in stressful environments accents the condition consequences such as spasticity and involuntary movements. Consequently, the use of relaxation can help athletes to properly cope with specific disability uncontrollable factors (e.g., spasms) and reduce its influence on sports performance (e.g., concentration). That is one of the reasons why Marta (1998) considered emotional control as one of the most decisive psychological requirements to play boccia.

Half of the coaches recognized that they do not include relaxation techniques in their training routines due to lack of knowledge, lack of time and lack of proper conditions. Although we could not find any previous study examining the use of relaxation techniques by elite coaches of disability sport, the reasons mentioned are in accordance with general literature about the reasons for lack of psychological skills training in sport context (Burton & Raedeke, 2008; Johnson, Anderson, & Falby, 2011). It is important to note that in the group of coaches who mentioned relaxation training only two applied the techniques by themselves. In the other situations relaxation was a physiotherapist's responsibility.

Although there are a variety of strategies to help athletes to relax (e.g., diaphragmic breathing, imagery relaxation, progressive muscular relaxation and self-directed relaxation) (Burton & Raedake, 2008), muscular relaxation was the most used method referred in the present study. For instance, controlled breathing for relaxation is the most popular technique used because it is partially a natural innate technique (Caruso, 2004), but only one coach mentioned its use. Learning how to breathe more rhythmically and deeper increases the amount of oxygen in the brain and muscles favour a calming relaxing response by the athlete (Caruso, 2004), and therefore coaches should take advantage of this simple technique. Our findings showed a clear underuse of relaxation techniques by coaches who trained elite athletes with disabilities. It is crucial to provide coaches with more opportunities to learn the basics of this technique and how to organize the training sessions to include relaxation skills in a productive way.

## 5. Conclusion

The Portuguese elite coaches from disability sport interviewed in the present study seem to be aware of the importance of psychological training for sports performance. Globally, the participants acknowledged the importance of goal-setting, self-talk, imagery and relaxation for the improvement of the psychological preparation of their athletes to compete. However, when asked about their coaching routines in order to develop the abovementioned psychological strategies our findings were of concern. Not all the coaches use psychological techniques with their athletes. For example, a reduced number of coaches mentioned the use of relaxation and self-talk techniques. On the contrary, goal-setting was the psychological strategy that all the participants used in a systematic way. Another important finding was the considerable lack of use of psychological strategies in the practice setting. Only goal-setting was reported to be a psychological technique consistently applied by all the coaches during practice.

Several sport-specific and disability-specific issues emerged in the present study. The boccia coaches considered imagery and relaxation as very valuable techniques in their sport. Moreover, the boccia coaches highlighted the importance of including the sport assistants in the psychological training (e.g., goal-setting and imagery). Finally, one coach working with athletes with visual impairment considered imagery techniques of greater importance for the athletes.

Although we have presented and discussed separately the four psychological techniques (i.e., goal-setting, relaxation, imagery and self-talk), it would be advantageous to integrate them within a single psychological skills training program. The lack of use of psychological techniques exhibited by the coaches in this study, specifically when the practice setting is considered, is a concern fact since it compromises the implementation of an effective psychological skills training program. Coaches must be aware of the relationship between psychological skills in practice and success in competition in order to positively influence their athletes to give equal importance to both competition and practice settings for psychological training (Frey et al., 2003).

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**Notes**

Note 1. The number following each raw data theme indicates the number of times that it was reported.

Note 2. The number below the first order subthemes indicates the number of coaches who reported them.

Note 3. Depending on their physical and functional abilities, boccia athletes are assigned to one of the five sports classes: BC1, BC2, BC3, BC4 or BC5. BC1, BC2 and BC3 classes include players with cerebral palsy and BC4 class is only for athletes who are diagnosed with conditions of non-cerebral origin. BC5 class include athletes with less severe impairments and both groups (i.e., with cerebral palsy and with non-cerebral origin) are eligible (Boccia International Sports Federation, 2017).