

# Choking Under Pressure in Competition and Psychological Intervention Approaches

**Jin Wang, PhD**  
Kennesaw State University  
Kennesaw, Georgia

**Douglas Callahan, PhD**  
Winona State University  
Winona, Minnesota

**Bernie Goldfine, PhD**  
Kennesaw State University  
Kennesaw, Georgia

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**CHOKING IS A COMMON RE-**sponse to competitive stress. According to Nideffer and Sagal (20), athletes choke when their performance seems to be progressively deteriorating and when they seem incapable of regaining control over their performance. In a practical setting, many athletes may have great talent with excellent skills, but they cannot achieve peak performance during competition due to choking. Inability to cope with competitive anxiety has become a critical issue that significantly affects athletes' performance and psychological well-being.

In the sports psychology literature, several theories explain the relationship between anxiety and athletic performance from different perspectives. For example, the reversal theory (14, 15) indicates that how arousal affects performance depends basically on an individual's interpretation of his or her arousal level, which may be very different from one minute to another. Hanin's

(6–8) optimal zone of function contends that, for top athletes, each has a zone of optimal state anxiety in which their best performance occurs. If athletes' arousal level goes below or beyond that optimal zone, poor performance occurs. Also, the catastrophe theory (9, 10) believes that optimal performance occurs in an inverted-U fashion, but how much cognitive anxiety an athlete has plays a significant role for performance. Once over-arousal and the catastrophe occurs, the athlete's performance will dramatically decrease. And the inverted-U theory (16, 18, 29) generally perceives that peak performance falls in an inverted-U fashion without considering individual differences. Each of these theories has its strengths and weaknesses. Despite clear anecdotal evidence that athletic performance is a reflection of an athlete's physical and psychological state, many athletes are readily physically trained but they routinely ignore psychologi-

cal training. As a consequence, many elite athletes fail during competition because of a lack of mental control. Also, according to Gould & Dieffenbach (5), one of the major psychological characteristics of Olympic Champions is their ability to cope with and control anxiety (5).

In reality, athletes do not lose their physical ability, technical skills, and strategic knowledge during a competition. Rather, they lose control of cognitive factors such as the ability to concentrate, to focus on relevant cues, to engage in positive self-talk, and so forth. The potential causes for athletes losing control could be negative internal thoughts such as fear of losing, low confidence regarding self-competence, thinking of failure experiences, feeling shame of losing, etc., or losing control caused by the external stimulus such as a large audience, new sports stadium, the high skill and performance levels of opponents, coaches' pressures, and many

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other factors. During competition, athletes do not only use their physical ability and skills; they also utilize their psychological and mental capacities. Consequently, elite athletes' physical abilities and skill levels are very similar to their opponents' during warm-up sessions before a match; the audience or experts even have a hard time predicting which athlete would be the winner. Ultimately, the success of the victor depends largely on his or her mental control before and during competition.

Even though some athletes recognize their lack of psychological control or mental preparation, many athletes are not cognizant of their lack of control or mental preparation. In either case, psychological barriers are significant detriments to these athletes' performance in competition. In a similar way, coaches also understand relatively little about the relationship between competitive anxiety and athletic performance (1). Thus, how to raise an athlete's self-awareness regarding their response to stressors is essential. Second, for those athletes who do recognize their inability of overcoming psychological barriers, how to help those athletes maintain an optimal psychological state to achieve peak performance should be one of the coaches' major concerns in competition. Many research studies have concluded that psychological well being and mental readiness for competition is a combination of the two and can be enhanced with various psychological training practices (13, 17, 19, 22, 23).

In order for coaches to help their athletes overcome psychological barriers such as choking, both the coaches and the athletes must understand the causes and

mechanics of choking. Once they understand these, they are better able to identify and implement proper mental training techniques.

### ■ Psychological Mechanics of Choking

Choking is a psychological phenomenon that negatively affects athletes' performance. The following 2 models reveal the psychological mechanics of choking. Model I: (a) improper internal stimulus—negative thoughts (What will happen if I don't win?), (b) feelings of fear, (c) changes in mental attention (narrowing of attention), (d) changes in physiological responses (increases in muscle tension, heart rate, and respiration), and (e) performance problems (disturbances in fine-muscle coordination and timing, rushing, inability to attend to task-relevant cues, fatigue, and muscle tightness). Model II: (a) external stimulus (noise, coach's reaction, referee's reaction, etc), (b) external stimulus affects internal thoughts, (c) attention shifts to irrelevant stimulus, (d) improper commands sent by brain, (e) muscular coordination disrupted, (f) performance deteriorates. These 2 models demonstrate that both internal stimuli (negative thoughts) and external stimuli (various environmental factors) can negatively impact an athlete's performance (1, 26, 27). Choking, then, is a result of the interaction between the improper focus of attention and negative somatic responses under highly stressful conditions in competition.

The above models suggest that, for athletes to achieve peak performance, they must not only engage in physical and technical practice but also must effectively

control and cope with internal and external stimuli (4, 24). If athletes are physically fit and technically sound but lack the ability to cope with negative thoughts or environmental stimuli, they will be unable to achieve peak performance. Most people recognize that the development of physical skills requires time and hard work, but they fail to understand that a winning mental ability also requires time and commitment if an athlete is to gain and maintain control in competitive situations. The first step in a psychological training program is to convince athletes how psychological training will contribute to performance. Then, based on each athlete's psychological characteristics, an individual training approach must be devised for each athlete. With effort, persistence, and a strong commitment, any athlete can gain an advantage by using psychological training approaches. Not only can they help athletic performance in competition, but this mental training can also enhance motor skills during practice sessions.

Psychological training requires athletes to focus on certain elements of their psychological and physical execution, and to practice repeatedly without being disturbed by various irrelevant internal thoughts and external stimuli. At first, the athletes will struggle to control thoughts and ignore irrelevant information perceived by their sense organs. Over time, however, the brain will be trained such that athletes have mastered their thought processes and responses. Through proper training methods and persistent effort, mental training programs can be highly successful. The recommended psychological intervention ap-

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proaches are (a) self-talk and cognitive restructuring, (b) mental imagery, and (c) attention training.

## ■ Psychological Intervention Approaches

### *Self-Talk and Cognitive Restructuring*

Self-talk is a way of communicating to oneself. Because self-talk is an internal stimulus, it can significantly affect an athlete's performance during competition. For example, positive self-talk can increase an athlete's confidence and excitement about competition. It can also trigger positive physiological responses such as relaxed concentration, meaning that an athlete's muscles are relaxed, but the athlete is mentally focused (26). Consequently, appropriate self-talk will provide an athlete with the optimal arousal in order to achieve peak performance.

Conversely, negative self-talk, such as, "He is a much better player than I," and "I am going to lose today," can have a damaging effect on performance. Negative self-talk shifts an athlete's focus from enhancing his or her performance to the potential negative outcomes of a competition. Many times it is a matter of perception. When an athlete fears losing, fears being laughed at by audience, or fears for various other reasons, he/she can experience significant increases in blood pressure, heart rate, sweating, shallow breathing, and muscular tension. In addition, muscular coordination can be disrupted, negatively affecting the athlete's ability to execute motor skills. Therefore, negative self-talk can have a devastating effect on performance (2, 3).

Without psychological training, athletes have a very difficult time overcoming or controlling negative self-talk. Negative thoughts seem to occur more easily or more naturally to athletes than positive ones. Fortunately, through psychological intervention programs, an athlete can have better control over negative self-talk and move toward more positive self-talk.

The first step in self-talk training is to increase the athlete's self-awareness of the content of his or her self-talk before and during competition. Athletes should write down the types of self-talk in which they consistently engage. They should record when, where, and under what circumstances these thoughts occur. Once athletes have assessed their self-talk, they can then begin to replace negative thoughts with positive ones.

One method of replacing negative thoughts is cognitive restructuring, in which an athlete restructures his or her negative thoughts and rereasonizes the meaning of the thinking process (30). For example, negative self-talk such as, "He is a much better athlete than I am," should be countered with "I have improved significantly the last 3 months and I can compete well." Another instance in which cognitive restructuring is beneficial is when an athlete has trouble competing against a very strong team in front of a large audience. To deal with this problem, one effective strategy is to restructure the athlete's cognitive thinking such that he or she restructures those negative thoughts as positive ones, such as, "I believe the large audience is a great motivating factor that gives me the energy to compete against strong opponents." With this type of cognitively re-

structured thinking, the athlete's perceptions, emotions, and physiological responses would have a positive effect on his/her performance (30).

The key to modifying negative self-talk is for the athlete to quickly restructure cognitive thinking to meet the demands of the upcoming situation. This is a specialized skill that needs to be developed and can be mastered over time. Once athletes recognize the adverse consequences of negative thoughts, they will likely be motivated to intentionally engage in cognitive restructuring practice.

Finally, maintaining a log or journal of one's thought processes can be useful to the athlete in monitoring his or her progress in mastering self-talk skills. As in most skill development, progress and success need to be recognized by the athlete in order to motivate him or her to continue to improve. Also, it is vital for the athlete to realize that one never completely masters or "arrives" in this area. Controlling one's thoughts is a challenge, but taking steps to tackle this challenge can yield significant results (28).

### *Mental Imagery*

The human brain is a dynamic organ. Not only can humans mentally visualize their previous experience, but they can also picture themselves doing something they have never experienced before. This ability demonstrates that the human mind can create or re-create situations to mentally visualize scenes (25). This is an important function that can greatly benefit athletes when it is applied to their performance.

Mental imagery can have numerous positive effects on sports training or competition, including skill development, practicing

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strategies, attention and anxiety control, and recovery from injury. Mental imagery is one of the most important techniques of mental preparation before and during competition (5, 25).

Because an athlete's mental state prior to competition can significantly affect his or her performance, most Olympic athletes devote some attention to mentally preparing for competition (21). While their methods of mental preparation may vary tremendously, Jackson (11) has found that Olympic champions around the world all have very similar mental states. Jackson discovered that relaxed concentration is an ideal mental state before competition; i.e., the muscles should be relaxed, but the mind should be concentrated on particular elements of the upcoming performance. To attain this state of mind, mental imagery can be used to gain control of precompetitive anxiety in order to improve concentration.

Practicing mental imagery can control precompetitive anxiety and thereby enhance athletes' imagery ability, an imperative component of ensuring a positive effect of using mental imagery to benefit performance. Mental imagery ability can be enhanced through 3 different areas: vividness, controllability, and self-perception (25). Athletes first need to enhance their ability to visualize. This process requires athletes to visualize different objects and human motions by using their senses, consists of observing and visualizing object(s) or human motions in the following sequence: (a) from simple object to complex object, (b) from a stationary situation to a moving situation, (c) from 1 object to 2 objects then to 3 objects, (d) from an easy skill to a more difficult skill,

(e) from a skill to a strategy, (f) from an imagery without emotion to an imagery with emotion, (g) from an isolated situation to a simulated competitive situation, and so on.

After enhancing their mental imagery ability, athletes must engage in simulation training to rehearse mental imagery. The simulated conditions include a similar competition field, correct dimensions of the formal sports field, audience, referees, coaches, opponents, noise, parents, friends, pressures, and so on. These stimuli should be simulated according to actual competition conditions. During simulation training of mental imagery, the athletes are required to repeatedly visualize competition scenarios.

One of the crucial principles of exercising simulation is to emphasize the importance of visualizing in 'real time' the particular skill or event. For example, if an event lasts 20 seconds, the athlete should visualize 20 seconds of the skill or event for a real-time mental stimulation. Initially, the athletes may overly increase the level of physiological and psychological arousal because of the competitive stimuli. With repeated stimulation, the athletes' brains will become more accustomed to the competition-related stimuli. Consequently, when engaged in actual competitions, the athletes' internal and external competition-related stimuli will no longer produce debilitating competitive anxiety. Athletes can use a variety of simulation training methods to gain psychological control, such as using video tapes, observing real competitions, playing scrimmage games, watching films, viewing Olympic clips, and the like.

Mental imagery training can take place before, during, or after practice, depending on an athlete's preference and experience. The period of mental imagery training can be modified based on an athlete's age, athletic experience, mental imagery ability, and other factors. The younger an athlete is, the shorter the practice time he or she is capable of because of a limited attention span. In contrast, a more mature and experienced athlete can engage in mental imagery training for longer periods of time in a structured or unstructured setting. Athletes can practice psychological skills in a variety of settings with or without involvement in physical activities. Mental training, just like physical training, takes time and commitment. With a carefully designed training program, athletes can significantly decrease their competitive anxiety.

### **Attentional Training**

Proper attention prior to or during competition is a critical factor in determining athletic performance because executing a particular pattern of movements requires that the brain send precise signals to the muscles. During this complex process, properly focused attention plays a key role in executing required skills during competition. Unfortunately, many athletes with great physical talent and technical skills are unable to focus their attention on relevant stimuli. For example, before a competition, a gymnast may be worried about the result of the competition instead of focusing on how to execute the required performance routines. Attention to inappropriate stimuli can significantly elevate competitive anxiety that, in turn, affects the athlete's performance. There are various in-

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appropriate stimuli prior to competition, such as focusing on a previous failure experience, thinking of the consequence of losing, outcome expectancies, etc. In fact, athletes in different situations and at different times need varied attentional focuses in order to perform successfully. Thus, attentional training becomes a necessary process that can contribute to the athletes reaching their performance potentials.

To design an effective attentional training program, athletes must understand various attention styles as well as when and how to use a particular attentional training approach. Nideffer and Sagal (20) identify 4 types of attention styles: internal attention, external attention, narrow attention, and broad attention. The attention style used in a particular situation is determined by individual preference and the requirements of the sport. For example, prior to competition, a diver may use a narrow internal attention to visualize a standard diving routine in order to reinforce the blueprint for executing this particular movement pattern on the neurological trace of his or her brain. In contrast, a soccer player may utilize broad internal concentration to analyze the opponent formation and develop a plan for executing a strategy with his or her teammates. In addition, the athlete may attempt to be in tune with long-term and short-term internal cues, such as past experience, self-confidence, and current muscle tension, depending on the situation and sports competition.

The key to preventing an athlete from choking under pressure in competitive situations is to productively use the time prior to

skill execution. Left to their own devices, many athletes will become overwhelmed and succumb to the pressure. During competition, the athlete must focus his or her attention only on the most important and useful information. Irrelevant and distracting stimuli must be replaced, discarded, or ignored prior to performance. Many times, an athlete is bombarded with multiple stimuli that are perceived by several sense organs, thus requiring intersensory integration. Nideffer and Sagal (20) indicated that athletes would always face unanticipated situations for which they could not prepare. If athletes tried to think of every contingency, they would overload themselves and never gain control of attention. Nideffer and Sagal further suggested that athletes must learn how to recover quickly from the unexpected. Through proper training, an athlete can learn to filter and select appropriate information, then attend to the skill at hand. Some of this ability is innate, but much can be learned.

Athletes also need to be aware of their internal physiological responses in order to make adjustments in their arousal level. Arousal is a blend of physiological and psychological activity in a person, and it refers to the intensity dimensions of motivation at a particular moment (26). If an athlete's heart rate is too high, he or she can slow it down through controlled breathing. The slowing of the heart rate will, in turn, affect muscle tension, so they can be in control and meet the demands of the skill. Besides manipulation of heart rate by regulating breathing, other physiological responses should also be regulated in order to control proper

arousal level. For example, an athlete with high arousal manifests this psychologically with tensed muscles, which, in turn, greatly affect coordination of executing the required movement skills. Thus, a progressive relaxation with proper attention focus should be practiced prior to competition (12). Progressive relaxation is a relaxation technique, which tenses and relaxes muscles from a progressive sequence until all muscles are completely relaxed. Every athlete is unique and will respond to pressure differently, so it is up to the coach to work with him or her to find the attention plan that works.

A practical and useful method of teaching attention is to follow a 4-step process. The first step involves self-awareness training; i.e., becoming aware of the type of attention focus the athlete has in a particular competitive situation. For example, an ice skater may want to know what types of thoughts or attention focus he or she typically experiences prior to certain types of competition. The second step is to develop a strategy to replace irrelevant attention with a required attention focus. The athlete can focus on a technical routine prior to the execution of the skill instead of worrying about losing the competition. The third step is to repeatedly rehearse mental imagery to enhance the athlete's attention during non-competitive situations so that athletes can voluntarily control their attention focus when they need to. Finally, the fourth step is to check for proper arousal level for performing the skill during simulated training conditions. This can be monitored through heart rate, breathing, muscle tension, and sense of

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confidence. Overall, this 4-step strategy will focus an athlete's attention on information relevant to performing the skill as opposed to distracting information that many times involves worries about outcomes.

Whether the skills required are simple or complex, proper attention focus is required. Relaxed concentration has been shown to be the mental state of elite Olympic champions before and/or during competition (26). It is the responsibility of the coach to prepare his or her athletes to meet the many demands of the sports such as psychological, physiological, emotional, technical, and tactical dimensions. There are no guarantees that attentional training will prevent choking; however, it endeavors to put the athletes in a frame of mind to be successful.

### ■ Conclusion

Choking under pressure is a concern that needs to be addressed through increased awareness and training. Educating athletes about the nature of choking is the first step. Next, intervention approaches can be explored. Athletes will respond differently to the various intervention techniques, so it is critical for the coach to know his or her players well. It is also possible to combine the approaches depending on the sport and the needs of the athlete. Some may respond well to mental imagery while others may need to improve their self-talk. When an athlete is struggling with concentration lapses or focusing on the task at hand, attention training may be the best approach. Because there are various factors that could cause athletes to choke, determining the causes of attentional lapses

leading to choking is very important. Once athletes recognize the particular cause of choking, they can restructure their thinking process to counter the particular negative thoughts in order to prevent choking. Coaching is a dynamic profession; not only coaches require the technical knowledge of the sport, but also they need to know how to help athletes reach an optimal mental state prior to competition in order to achieve peak performance. If athletes' lack training in the areas of physical, skill, and psychological dimensions, it is obvious that they have great difficulty in achieving their peak performance in today's competitive sports arena. ▲

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**Wang**

**Jin Wang** is professor at Kennesaw State University, Georgia, and his expertise is in the areas of sport psychology and biomechanics.



**Callahan**

**Douglas Callahan** is an assistant professor at the Winona State University, Minnesota, and his expertise is in the area of sport psychology.



**Goldfine**

**Bernie Goldfine** is professor at Kennesaw State University, Georgia, and his expertise is in the areas of sport management and administration and social psychology.