

MANAGING EMOTIONS IN COMPETITIVE SPORTS: INTEGRATED MODELS OF PSYCHOLOGICAL FLEXIBILITY

A GESTÃO DAS EMOÇÕES NO DESPORTO COMPETITIVO: OS MODELOS INTEGRADOS DE FLEXIBILIDADE PSICOLÓGICA

J. Vasconcelos-Raposo, C. M. Teixeira

ORIGINAL ARTICLE | ARTIGO ORIGINAL

ABSTRACT

High-performance sport has evolved into an arena where psychological excellence is as decisive as physical prowess. The ability to effectively regulate emotions, particularly pre-competitive anxiety/negativity (PCA), consistently distinguishes elite performance. This article presents a critical and in-depth analysis of the contemporary literature on emotional management in sport. Beginning with a deconstruction of the athlete's complex emotional landscape, it delves into the neurocognitive mechanisms and multifactorial antecedents of these states, identifying them as a central obstacle to optimal performance. The core of the work focuses on evaluating a spectrum of evidence-based psychological interventions, ranging from physiological regulation strategies and pre-competitive routines to third-wave approaches such as Acceptance and Commitment Therapy (ACT) and mindfulness training. The analysis reveals a paradigm shift from models aimed at eliminating anxiety/negativity to approaches that promote psychological flexibility and acceptance. It is concluded that the most effective intervention resides in an integrated, periodized, and personalized model—a “toolbox” of psychological skills—adapted to the athlete's individual needs and the phases of their training cycle. This work argues that the future of sport psychology lies in promoting the athlete's holistic well-being as the fundamental pillar for sustainable, high-level performance.

Keywords: sport psychology, emotional regulation, pre-competitive anxiety/negativity, psychological flexibility, acceptance and commitment therapy (ACT), elite performance, athlete mental health

RESUMO

O desporto de alta competição evoluiu para uma arena onde a excelência psicológica é tão determinante quanto a proeza física. A capacidade de regular eficazmente as emoções, particularmente os estados emocionados (a ansiedade/negatividade pré-competitiva - APC), distingue consistentemente a performance de elite. Este artigo apresenta uma análise crítica e aprofundada da literatura contemporânea sobre a gestão emocional no desporto. Começando por uma desconstrução do complexo panorama emocional do atleta, procura-se aprofundar os mecanismos neurocognitivos e os antecedentes multifatoriais, identificando-a como um obstáculo central ao rendimento ótimo. O núcleo do trabalho foca-se na avaliação de um espectro de intervenções psicológicas baseadas em evidências, desde estratégias de regulação fisiológica e rotinas pré-competitivas a abordagens de terceira vaga, como a Terapia de Aceitação e Compromisso (ACT) e o treino de mindfulness. A análise revela uma transição paradigmática de modelos que visam eliminar a ansiedade/negatividade para abordagens que promovem a flexibilidade psicológica e a aceitação. Conclui-se que a intervenção mais eficaz reside num modelo integrado, periodizado e personalizado — uma “caixa de ferramentas” de competências psicológicas — adaptado às necessidades individuais do atleta e às fases do seu ciclo de treino. Este trabalho defende que o futuro da psicologia do desporto reside na promoção do bem-estar holístico do atleta como o pilar fundamental para uma performance sustentável e de excelência.

Palavras-chave: psicologia do desporto, regulação emocional, ansiedade/negatividade pré-competitiva, flexibilidade psicológica, terapia de aceitação e compromisso (ACT), performance de elite, saúde mental do atleta

Submitted: 20/11/2024 | Accepted: 17/05/2025

José Jacinto Vasconcelos-Raposo. Sports and Exercise Psychology Academy, Portugal.

Carla M. Teixeira. Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal.

e-mail: jvr.psic@gmail.com

We currently live in a particularly competitive world, as well as in an era of exponential growth in sport and sport sciences, which have seen significant improvements in the fields of strength and conditioning, nutrition, and technology. At the forefront of the relentless pursuit of sporting success has been the development of the mental side, vital for performance.

It is very easy to describe the incredibly narrow margins that separate victory from defeat in physical terms, but they are truly related to how the physical abilities that an athlete possesses can be utilized at a particular moment and at an intensity not previously experienced and not previously demanded of them. The mental game of athletes has evolved: it is no longer “extra”; it is an essential part of an athlete’s training for competition.

Several recent studies have focused on the distinct and substantial stress-related burden that elite athletes must endure, and its potential impact on performance, mental health, and overall health (Rice et al., 2016). These pressures include the pursuit of victory at all costs, intense media and public focus, contract security, and the constant threat of injury; an incredibly strong mental state is necessary to thrive in this rat race. Resilience is not the absence of stress, but rather the ability to navigate the stressors and struggles that competitive contexts represent, competently utilizing available protective psychological resources (Sarkar & Fletcher, 2014; Bicalho et al., 2020).

Among the psychological barriers experienced by athletes, the inability to control negative affects and cognitions, such as pre-competitive anxiety/negativity (PCA), is perhaps the most widely recognized as being one of, if not the greatest, impediment to optimal athletic performance. PCA is not merely a feeling of nervousness but is a complex psychophysiological response that studies have found to have significant and measurable impact on sporting performance.

The effects of PCA can be reflected in: disruptions in attentional processes involved in task performance regulation; decreases in fine and gross motor skills necessary for executing highly complex actions; and increased rigidity, as an indicator of injury risk during competition. These interconnected effects highlight the need to manage and control PCA to achieve maximum performance and for athletes to reach their potential in the competitive arena.

The objectives of this manuscript are to offer a systematic and updated review, analysis, and synthesis of what is known from sports-based research on emotional regulation and evidence-based interventions in sports that are rooted in scientific literature and empirical knowledge. The objectives of this article are indeed ambitious and multifaceted, dealing with the achievement of three specific but interrelated goals:

First, to examine from a cognitive-emotional perspective the complex and multifaceted construct encompassed by the concept of pre-competitive anxiety/negativity (PCA), dissecting its cognitive and somatic components, interpreting its different theoretical approaches, framing the contribution of other mediators (i.e., personality and context), and considering other concomitant states (e.g., personality, context).

Second, to explore the substantial evidence base that has accumulated for the heterogeneous psychological interventions available to athletes and systematically review the mechanisms through which these interventions work and their effectiveness in different sports.

Finally, to offer a clear and practice-based model for professionals working in the field, serving individualized, periodized, and holistic emotional regulation, focusing on the centrality of psychological flexibility and athletic well-being, beyond competitive sporting performance, as key antecedents for long-term success in competitive sports.

METHODS

The present investigation is structured as a narrative review of the most recent scientific literature on emotion management in competitive sports, with special attention to intervention techniques regarding pre-competitive anxiety/negativity. A systematic method was used to identify, select, and critically evaluate sources identified as most relevant and related to sport psychology.

The bibliographic search was conducted in the main scientific databases: PubMed/MEDLINE, PsycINFO, SPORTDiscus, Scopus, Web of Science. The research period covered the last 15 years (2009-2024) to ensure retrieval of the most recent developments in the field (namely third-wave approaches to psychology).

The terms used, in English and Portuguese, were as follows: “sport psychology” OR “psicologia do desporto”; “pre-competitive anxiety” OR “ansiedade pré-competitiva”; “emotional regulation” OR “regulação emocional”; “mindfulness”; “Acceptance and Commitment Therapy” OR “ACT”; “psychological flexibility” OR “flexibilidade psicológica”; “elite athletes” OR “atletas de elite”; “performance anxiety” OR “ansiedade de desempenho”; “mental training” OR “treino mental”.

Inclusion criteria were defined as: 1- Articles in peer-reviewed scientific journals; 2- Case studies with experimental, quasi-experimental, longitudinal designs, and systematic reviews; 3- Competitive athletes (high-level amateurs/professionals); 4- Psychosocial treatment for behavior management and anxiety/negativity reduction; 5- When relevant, studies published in any of the following languages were included: English, Portuguese, Spanish, or French.

Regarding exclusion criteria, those that were considered: 1- Addressed non-athlete and/or recreational populations; 2- Opinion articles without empirical basis; 3- Unpublished dissertations and theses; 4- Studies that only addressed the physiological component: physiological aspects without psychological

aspects; 5- Reported pharmacological interventions.

The selection procedure consisted of a two-stage process. During the initial screening phase, titles and abstracts were processed to find potentially related studies. In the second stage, full texts were accessed to determine their eligibility. We also manually checked the reference lists of included articles for other potentially related research.

For data analysis and synthesis, a thematic analysis of studies included in the review was performed, which identified the following main categories: 1. Theoretical foundations of pre-competitive anxiety/negativity; 2. Physiological regulation strategies and pre-competitive routines; 3. Third-wave approaches (mindfulness and ACT); 4. Moderating factors (personality, context); and 5. Integrated intervention models. Synthesis occurred through narrative description of shared, disparate, and unaddressed themes in the evidence.

Data Analysis and Synthesis

In today's competitive sports world, which has made spectacular advances in physical training science, sports nutrition, sporting apparel, and equipment technology, there are no greater enemies than the anxiety faced when competing. The very thin lines between success and failure are difficult to define, beyond the fact that they are not entirely physical in nature: they involve an athlete or team applying their talents under the most intense pressure imaginable.

Thus, an athlete's mental resilience has gone from being a complement to an essential part of their preparation. Elite athletes are under tribal influences. Athletes grow up surrounded by pressure for acceptance. Even though high-competition athletes are under a stress test above the usual way of life, development depends on genetic factors and can lead to abnormal health development (Rice et al., 2016).

There is much pressure involved, not only from the need to win all the time, but also from media and fans, never having a long-term contract, and always worrying about injury risk; mental strength is a very important part of keeping everything together and succeeding. This resilience is not seen as an absence of challenges, but as the ability to make optimal use of existing protective psychological resources to deal with the inevitable stress factors and adversities associated with competitive environments (Sarkar & Fletcher, 2014; Bicalho et al., 2020).

The inadequate management of negative emotional states and prolonged PCA in athletes has been one of the most crucial and widely recognized barriers to optimizing athlete potential. It is this experience of PCA, as opposed to a simple subjective feeling of nervousness or discomfort, that is considered a complex psychophysiological response with real and measurable effects on athletic performance.

PCA can manifest as a disruption of attentional processes necessary to perform at the highest level, a deterioration in fine and gross motor coordination (necessary to perform complex movement patterns), and elevated muscle rigidity, which may predispose to increased injury risk during competition. Such interrelated effects show how essential it is to address and improve pre-competitive anxiety/negativity and mitigate them to enhance performance, allowing athletes to compete at their maximum capacity.

The objective of this article is to present a reflection on one of the multiple strategies that can be applied in reducing the harmful effects of emotional states in sport, focusing on interventions strongly grounded in scientific and/or empirical evidence. The general objective of this article is therefore not only ambitious but also multifaceted in scope, consisting of three separate yet intimately connected objectives. First, to systematically deconstruct the complex

and multifaceted nature of what is popularly referred to as pre-competitive anxiety/negativity (PCA), including its cognitive and somatic constituents, as well as the potential theoretical foundations that inform our understanding of it, and the contextual variables/personality traits that may shape it. Second, to critically evaluate the various existing psychological interventions, including a wide range of modalities, from traditional to more recent ones, such as mindfulness-based approaches and acceptance and commitment therapy (ACT), examining each through the lens of their mechanisms of action and collective effectiveness in different sporting contexts. And third, to introduce a comprehensive yet flexible model designed for practical application, advocating an individualized, periodized, and holistic approach to emotion regulation that highlights psychological flexibility and athlete mental well-being as fundamental prerequisites for sustainable and long-term success in elite sport.

Athlete's Emotional Perspective of Competition

Undoubtedly, the question of whether emotions are innate or acquired in sport is difficult to answer, due to the complexity of human activity. But at the core of the emotional landscape is what we commonly describe as emotional intelligence. It is an easily applicable idea that can be used in any sport.

Systematic reviews on emotional intelligence also indicate a statistical correlation between EI and athletes' performance, as well as its incorporation in the ability to identify, understand, and manage one's own emotions and those of others. This can result in two distinct and detectable effects: 1) greater discernment in the minds of competitive athletes; and 2) greater communication and information capacity on the part of sports journalists.

The athlete's emotional quotient is the determining factor when it comes to competing at the highest level. We should not only focus on the fact that "negative emotions" are

present frustration over missing a play or irritation over an unfavorable referee decision. The emotions themselves are not the problem. On the contrary, they are useful data: the body is communicating with the athlete, telling them they need to do something different, that is, to change their approach, effort, or expectations.

An athlete's competitiveness does not depend on avoiding emotions like frustration or anger, but rather on their ability to manage them. These so-called "negative" emotions are not the problem; they are, in fact, important signals. They function as a conversation between the body and the athlete, indicating that a tactic needs to be adjusted, concentration needs to be recovered, or expectations need to be managed. The real problem arises when the athlete does not "listen" to this conversation and reacts in an uncontrolled manner, instead of responding intelligently and productively.

To provide a more complete explanation of the complex association between anxiety/negativity and the consequent decrease in performance, Attentional Control Theory, a well-formulated theory developed by Eysenck and his research team, stands out as a particularly relevant theoretical model. This theory hypothesizes that anxiety/negativity, and worry specifically (its cognitive component), consume the limited cognitive resources occupied by working memory, leading to the depletion of these critical resources.

This latter depletion ultimately translates into interference in the operation of the executive attention system. Executive attention is a key cognitive mechanism that governs two basic operations necessary for high-level performance: a) inhibition function (the ability to inhibit a prepotent response to irrelevant stimuli), and b) shifting function (the ability to shift attention focus in a flexible and adaptive manner from one aspect of a task or set of tasks to another).

Thus, whenever an athlete suffers from anxiety/negativity, their cognitive resources

are metaphorically "hijacked" by a multitude of stimuli perceived as threatening, such as fear of failure or the presence of an audience, causing their attentional focus on factors that are truly important for the task to diminish. This tends to result in a considerable breakdown in overall performance levels, as argued by Eysenck et al. (2007).

Not everyone has the tendency to suffer a decline in skill performance due to anxiety/negativity, and this is moderated by numerous individual differences in other traits and characteristics among athletes. Among these factors, perfectionism is by far one of the most widely investigated and cited causes of vulnerability to performance deterioration in sport. According to recent studies, perfectionism has been divided into two formats: 1- Adaptive perfectionism, which involves high, positive, and self-referenced personal standards; and 2- Maladaptive perfectionism, which is an individual's tendency to constantly worry about making mistakes, to quickly become insecure about how to act or perform, and to show high susceptibility to sometimes severe criticism and demands from others.

Indeed, it is this maladaptive or pathological potential of perfectionism that has been repeatedly associated with a series of harmful consequences for performance among athletes. It is still relevant to highlight its pertinence in discussions about the relationship between performance and mental health. An abundance of research findings currently supports a reinforced relationship between maladaptive aspects of perfectionism and burnout in sporting environments, as mentioned in Hill and Curran's (2016) review and demonstrated in the present study. Finally, and within the sporting context, perfectionism is found to be associated with the occurrence and worsening of burnout symptoms among athletes as evidenced in the work of Kanf and Gong (2024).

Regarding the relationship between perfectionism and anxiety/negativity, such a rela-

tionship has already been empirically proven in previous studies with young athletes, where perfectionist dimensions with a maladaptive profile were found to be positively associated with pre-competitive levels of anxiety/negativity (Freire et al., 2020). Furthermore, longitudinal research has supported this finding, showing that perfectionism predicts higher levels of burnout throughout a sporting season, as exemplified by Madigan et al. in 2019.

Collectively, these robust results underscore the urgent need to assess athletes' perfectionist traits while simultaneously seeking to prevent performance problems associated with maladaptive anxiety/negativity, improving competitors' mental well-being.

Psychological Interventions for Anxiety/Negativity Regulation

The domain of sport psychology has also advanced at a remarkable pace and has continuously matured to create a wide range of interventions designed to implement, among athletes, the necessary skills and competencies through which they can effectively manage their anxiety/negativity, as related to results associated with performance challenges.

Physiological Regulation and Pre-Competitive Routines

These methods target the somatic aspects of anxiety/negativity and seek to prepare an ideal mental state for competitive success. A cutting-edge training technique that has gained recent prominence in the coaching and athlete community is heart rate variability (HRV) biofeedback, a training mode that teaches athletes to self-regulate their physiology in response to stress and anxiety/negativity. With the aid of a monitor, athletes can visualize their heart rate variability and learn to increase the coherence of their heart rhythms, using different breathing and relaxation techniques that help improve autonomic nervous system balance. A literature review shows that HRV biofeedback training

is a promising method for improving sporting performance, but more quality research is needed to consolidate and confirm these initial results (Pagaduan et al., 2020).

Pre-competitive routines are among the best-known strategies that athletes use in preparing for performance. Such routines are defined by a structured sequence of physical and cognitive behaviors previously prepared for athletes to perform in the moments preceding competitive performance. The relevance of these routines is more than mere superstition; a systematic review identified several key psychological purposes for these routines, which include directing the individual's attention to the task, managing physiological activation, and increasing sporting confidence (Wergin et al., 2020). The positive impact of these pre-competitive routines was also confirmed by a meta-analysis, which concluded that they have a positive, moderate, and statistically significant effect on sporting performance (Rupprecht et al., 2021). The most recent research efforts actively seek ways to further refine and adapt these routines, particularly within the scope of emotional regulation strategies (Blumenstein & Orbach, 2022).

Mindfulness e Terapia de Aceitação e Compromisso (ACT): A Tradição da Terceira Vaga

The methods addressed here became known as the "third wave" (others call it the third generation) of cognitive-behavioral therapies and represented a complete reconceptualization of therapy. The goal is not to extinguish anxious thinking or negative downward regulation, but rather to enable the athlete to respond more effectively to their internal world, as advocated by RFT. A similar intervention is the Mindfulness-Acceptance-Commitment (MAC) intervention, which has been employed in the context of sporting performance (Gardner & Moore, 2007).

At the center is what is universally known as "mindfulness," that is, our ability to learn to

shift our attention from the past, future, and our imagination to the physically embodied reality of the exact moment we are living... and allow ourselves to pay attention deliberately to this or that event in the context of our days and nights with an open attitude and mind, as well as with curiosity and openness to the new.

The purpose of the interventions is not to make the individual get rid of difficult thoughts/feelings or exercise negative control over internal state, but rather to teach the athlete to relate to their thoughts, feelings, and bodily experiences in a more flexible and functional way. Instead of trying to fight these internal experiences, the athlete is taught to respond to them in a healthier and more adaptive manner. The most widely used intervention in this area is the Mindfulness-Acceptance-Commitment (MAC) protocol, which has been adapted to the sporting context with the goal of enhancing athletic performance (Gardner & Moore, 2007).

Mindfulness constitutes a practice that aims to cultivate the individual's ability to intentionally focus their attention on the immediate moment. This ability allows the athlete to avoid the past (what I did wrong) or the future (what might go wrong) and be totally in the 'present' and in the now. The application of mindfulness activates a state of openness, curiosity, and acceptance toward internal experience, which allows the athlete to be aware rather than overwhelmed with thoughts and feelings, maintaining their attentional focus on what matters for performance, as it happens in the here and now.

A literature review, based on statistical effect values regarding the impact of mindfulness, reported positive effects on performance, evidencing these effects in different subcomponents such as attention and emotional control, as reflected in athletes' actual performance (Bühlmayer et al., 2017). Furthermore, previous data suggest that MBTs could modulate basic processes, such as skill acquisition

during the first training load in untrained athletes (Zhang et al., 2016). In sport psychology, MAC (Mindfulness-Acceptance-Commitment) has gained great importance and acceptance as a new form of mental training for control-based psychology.

How and Why Athletes Should Practice ACT:

Reasons for Use in Sport for Athletes' Mental Agility

This theory is based on Relational Frame Theory (RFT), which is a fundamental concept that serves as the theoretical foundation for Acceptance and Commitment Therapy (ACT).

What is Relational Frame Theory (RFT)? RFT is a psychological theory about how the human mind learns and uses language. Its central idea is that we don't just learn to associate a word with an object (like a dog learns to sit when it hears "sit"). We learn to relate concepts to each other in complex and arbitrary ways.

These relationships are the "frames." For example: 1- Opposition Frame: If you learn that "hot" is the opposite of "cold," you automatically know that "cold" is the opposite of "hot," without anyone teaching you; 2- Comparison Frame: If you're told that A is bigger than B, and B is bigger than C, you conclude that A is bigger than C, even if you've never seen A and C together; 3- Causal Frame ("If... then..."): "If I fail, then I am a failure."

RFT is the theory that explains how our mind creates webs of meaning between thoughts and emotions. ACT is the therapy that shows us how to use this ability to weave healthier networks that support us, networks instead of traps that can actually help us live a full life. Logic is what allows us to see what's at stake in cases like when we state that A is bigger than B and B is bigger than C, in which case, completely forgetting A and B, we already know that A is bigger than C.

ACT Foundations: Pain is part of life; struggle is optional

The central principle of ACT contrasts sharply with the premises of most other therapeutic approaches. According to ACT, experiencing pain, discomfort, and negative thoughts is not only normal but is an inherent part of human experience. It's also important to understand that psychological suffering doesn't come from pain itself, but from our futile attempts to escape, avoid, or annihilate these experiences—what ACT calls Experiential Avoidance.

In the context of sporting excellence, this means that feelings of tension or apprehension before a big competition, feelings of disappointment after making a mistake, and pain during strenuous training are all perfectly natural and expected. The real struggle occurs when the athlete goes to war with these feelings within their own mind (and body), fighting a battle not to feel anxious. Unfortunately, such a battle tends to perpetuate anxiety/negativity and divert the athlete's attention from their performance goals. The goal of ACT is not so much to suppress so-called “negative” emotions, but rather to build Psychological Flexibility, a key meta-competency essential for well-being.

Psychological Flexibility is defined as the individual's ability to engage fully and consciously with the present moment and, in alignment with the situational context, to persist or adjust behavior according to personal values and goals. An athlete who possesses psychological flexibility is capable of experiencing a phase of anxiety/negativity but still executing their pre-established routine with precision. The athlete may have the thought: “I might fail,” while simultaneously maintaining their concentration on the target they intend to hit. They may feel physical pain and fatigue but continue to advance because such actions resonate with their fundamental values of growth and personal achievement. ACT enhances

this crucial flexibility through a framework of six interconnected processes, collectively called the Hexaflex. This framework supports the MAC model, which further advances the development of psychological flexibility through the integration of these six interrelated processes, as will be elaborated in the following sections.

Acceptance and Commitment Therapy (ACT) is a contemporary and innovative psychotherapeutic methodology, categorized within the innovative scope of what is referred to as “third-wave therapies.” This transformative approach was pioneered by the esteemed psychologist Steven C. Hayes along with his dedicated team of colleagues. Its implementation in the field of sport psychology, often represented by the acronym MAC, which stands for Mindfulness-Acceptance-Commitment, has been increasingly recognized and adopted for providing a compelling and effective alternative to traditional methods that focus primarily on mind control.

To fully understand the complexities of ACT, we must delve into its fundamental principles, giving particular emphasis to its practical application in training athletes' mental resilience. The general objective of ACT is not to eradicate what are often perceived as “negative” emotions, but rather to foster a state of Psychological Flexibility, essential for optimal functioning.

Acceptance and Commitment Therapy (ACT) teaches the athlete to develop psychological flexibility. This means that, instead of fighting against difficult thoughts and feelings, the athlete changes their relationship with them. Concepts such as “failure doesn't define me” or cultivating “resilient confidence” function as mental tools. With these, the athlete becomes capable of: 1- Feeling pre-competitive anxiety but maintaining composure to execute their performance; 2- Recognizing thoughts about failing without letting these dictate their actions; 3- Tolerating physical pain when

it serves a greater purpose, aligned with their aspirations.

The major difference from traditional approaches is that the latter advocate that negative emotions should be suppressed or eradicated. ACT considers this struggle not only ineffective but potentially harmful, as it diverts focus and energy from what really matters: performance aligned with the athlete's values. Terms like those used above, including “failures are never final,” “definition is not inherent,” and “fierce confidence,” become perfect mental examples of RFT (Relational Frame Theory—which serves as the foundation for ACT) psychology within competitive athletes; being able to remain true to natural and competitive psychological flexibility so they experience pre-competitive anxiety/negativity but can still execute their technical skills with composure, have negative thoughts about potential failures but not let these thoughts regulate their behaviors, and physical discomfort when enduring pain aligns with aspirations and goals. This contrasts sharply with more conventional interventions according to which disturbing internal experiences must be controlled or completely eradicated measures that are restrictive and potentially harmful.

The ACT model describes the development of psychological flexibility in terms of six interdependent processes, which have been adapted for sporting use, distilled in the MAC (Mindfulness-Acceptance-Commitment) model. Next, we summarize each of these processes and their implications for practice in the sporting context:

a) Willingness: Another Dimension of Experiential Avoidance

Acceptance is postulated as an active and deliberate response, defined by an attitude of openness to internal experience (in contrast to control strategies, more emphasized in conventional mental training approaches). It's important to note that acceptance is not the same

as giving up or surrendering to discomfort; it is, on the contrary, the intention to tolerate discomfort when fighting against it would be more harmful.

Practical implications: Take as an example the decisive shot that a basketball player must make under a high level of physiological activation. The common approach in classical mental training would be to use relaxation techniques so the athlete can “calm down” (for example, the thought “I need to calm down”), which, by itself, can consume attentional resources. In contrast, the ACT approach promotes acceptance of the present experience (“This excitement tells me that my body is giving what I need to be successful”), which means cognitive resources are no longer occupied and can be invested in task execution. In the case of the described formulation, it also reinforces self-confidence. Empirical evidence suggests that this acceptance-based model reduces the negative impact of anxiety/negativity on performance, regardless of whether this mood state is eliminated or not.

b) Changing the Function of Thoughts: Cognitive Defusion

Cognitive defusion helps develop a relationship with thoughts that allows athletes to see them for what they are (transient mental phenomena), so their impact on behavior is reduced. Nowhere is this more evident than in the world of sport, where athletes have numerous automatic negative thoughts crossing their minds in moments of high stress.

Intervention implications: For example, a golf player can be trained to experience the thought “I'm going to miss this putt” as just another transient cognitive fragment, generated by a mind under stress, and not as an accurate omen of future failure. Methods like labeling (“my mind is generating failure thoughts”) and contextualization (“but my body and the rest of me says I'm going to be successful”) allow the athlete to focus on the technical aspects of execution (releasing muscle

tension, for example) and maximize their performance potential.

c) Focusing on the Present: The Key to Maximum Performance

The ability to dynamically and adaptively redirect attention back to the present moment has been identified as one of the strongest and most robust predictors of success in sporting performance. ACT promotes this key competency not just as a goal in itself, but as a fundamental skill that enables effective and decisive behavior in competitive contexts.

In clinical practice: A player at the free-throw line can benefit much more from well-designed protocols to increase direct sensory contact with the task, such as feeling the texture of the ball, aligning visual intention with the hoop, and being perfectly aware of postural sensations, than from forms of meditation that advocate only mental emptiness. This approach is not only easier to apply but also effective, as results can translate into sustainable and consistent performance, even under high competitive pressure.

In practice, the question that frequently arises: What should be prioritized, cognitive fusion or defusion? Although encouraging, the relative contributions of cognitive fusion and defusion have not been well studied. While cognitive defusion is quite central in theory for increasing psychological flexibility and decreasing maladaptive cognitive fusion, few studies compare the impact of fusion and defusion on performance indices.

There are still measurement issues that make reliable operationalization of these constructs difficult, as they are hard to measure, which has hindered a clearer definition of each one's contribution. Furthermore, heterogeneity between applied methods—that is, differences in intervention protocol, sample size, outcome measurement, and follow-up duration—complicate the determination of strong conclusions and, consequently, study synthesis. However, there is sufficient evidence confir-

ming the effectiveness of ACT and mindfulness as promoters or facilitators of flow states.

d) Self-as-Context: Strengthening Identity Resilience

This more complex intervention provides a powerful means to help athletes when setbacks occur (for example, injury, defeat, or career transition). The ability to develop a sense of “self” that transcends these roles and outcomes is central to facilitating sustainable psychological adaptation in the face of challenges.

At a practical level: After a poor performance, a swimmer can be guided to differentiate between the statement “I had a poor performance” (Self-as-context) and a more distressing thought like “I am a failure” (which implies fusion with a negative self-concept). This subtle distinction has important implications for preserving motivation and avoiding mood disturbances that can arise when athletes face difficult circumstances.

e) Values Clarification: A Path to Sustained Intrinsic Motivation

Values are deliberately chosen action guides that energize behavior beyond what is possible to achieve based solely on goals and outcomes. This principle is particularly powerful in difficult times (such as injuries, defeats, or performance stagnation).

For example, a marathoner who deeply values “personal improvement” will likely stay motivated to train with the same intensity, regardless of winning or breaking records. Professionals can use values clarification tasks to help develop sources of motivation that are inherently more robust and lasting than mere achievement of results.

f) Committed Action: Acting According to Values

This critical process connects values clarification to real behavioral change, despite potential psychological resistance. It captures the active aspect of ACT: the importance of “living a valued life.”

In the literature on injury recovery, commitment to values such as “professionalism” or

“resilience” underlies the willingness to follow the guidance of, for example, a physiotherapist, regardless of any transient feelings of “motivation” or negative beliefs the athlete may have about that phase of the recovery process.

Implications of Acceptance Commitment Therapy for Sport Professionals

Resource economy is also an important one: rather than providing a range of strategies to manage different internal states, the process-based ACT-based approach facilitates the emergence of a transversal skill, psychological flexibility. Yet another benefit is that investigator defusion skills are sustainable — unlike control strategies which may not work under more dire circumstances, low willingness to ACT carries with it skills that are operable regardless of the intensity of one’s emotional arousal cost to the same as it would have been anyway (i.e., gratuitous mental effort). Moreover, ACT logic appears to integrate well with technical/tactical training, without resorting to specific requirements or extensive work beyond sports practice. There is strong evidence that ACT is effective in sports populations, with recent meta-analyses reporting effect sizes for ACT equivalent to or better than traditional interventions. The active preparation aimed at promoting psychological flexibility may have a protective function against anxiety/negativity and mood disturbances that are frequent in performance settings when pressure and responsibility are elevated, as in elite sport. ACT is one approach that has been empirically validated, has a clear structure, is evidence-based, and consistently distinguishes itself from the way in which mental skills training is commonly implemented within a competitive environment. When athletes say they want to “get rid” of their unpleasant inner experiences, they can be taught that they don’t have to actually control or get rid of what they want to not feel (a task impossible, however, to win at) but to

learn to perform well in both the presence and face of the takeaway of an unwanted feeling. This contrasts with a dominant paradigm that places psychological training as a support to the physical and technical aspects for high performance and competition. In the end, this is a re-orientation which leads a coach or a psychologist to re-think the procedures he or she uses when working with athletes in the context of practical mental training.

DISCUSSION

Toward an Integrated, Personalized, and Periodized Model

A review of the literature, both theoretical and empirical, in the field reveals that the never-ending search for the ‘silver bullet’ or a universally certified ‘best technique’ is a process that should be abandoned as futile and counterproductive. The best current evidence plus good ethical standards in sport psychology are grounded in a blended and deeply individualized model for each athlete.

In the current setting, the contemporary sport psychologist takes on the role of a “skills architect” who works tirelessly with the athlete to develop and maximize the use of a mental “toolbox” that is both strong and flexible and is carefully tailored to the athlete’s unique circumstances. Now, the pendulum on critical research has swung away from a stupid binary “what is it, CBT or ACT?” to a subtler question: “how should we mix and match the best tools from both to enhance this particular athlete’s performance in this specific situation?” The integration of PST and ACT is only now starting to be systematically researched and specific models for integrative training developed that combine elements of traditional PST with those of ACT, along with the understanding that different tools work better for different jobs (Wood & Turner, 2023).

Descriptors of Effective Intervention Models

Although the ideal form of evidence-based

practices, the effective intervention model is not well-practiced, nor has there yet been a good synonym describing it. For an intervention model to be considered effective, it should include the following elements:

1. **Integrated:** This condition refers to the integration of different components of a wide range of practices synergistically such that overall effectiveness is maximized. For instance, an athlete may use breathing control methods together with a carefully crafted pre-competitive sequence in order to regulate their level of physiological arousal in important advance of competition. And then during the game, of course, because any error made during a competition game can undermine cognitive control, so in the heat of the moment, the athlete could use cognitive defusion and acceptance skills (advocated in ACT) to rapidly let go of frustration and regain their attention on the present, and hence breaking the cycle of self-critical thought.

2. **Personalized:** One “size” definitely has not fitted all in this domain. The selection and prioritization of the different techniques should be part of an in-depth assessment of the athlete and should include several dimensions such as athletes’ personality characteristics (e.g., levels and types of perfectionism), the sport and injury history, the specific psychological demands on their sport and position, as well as preferences and beliefs of the athlete about their ideal methods to develop (Parikh & Radin, 2003).

3. **Periodized:** Similar to physical training principles, the process of psychological skills training should also be periodized for effective outcomes. In contrast, psychological periodization refers to the planned integration of different mental skill trainings across different periods of an annual training cycle, such as pre-season, competitive phase, and transition period. For instance, the pre-season stage could be an appropriate moment to allow context of values clarification, increase self-

-awareness, and initiate basic mindfulness training. Conversely, during competition, greater focus would be placed on applying and sharpening real-time regulation efforts that may include routines and functional self-talk tailored to the competition context.

Last, the potential impact of the training setting being an important factor to take into consideration regarding the effectiveness of any single intervention. The validity of any mental technique is greatly influenced by the culture of the team as it is coached and the singular leadership style of the coach. A coach who intentionally fosters psychological safety, who appreciates effort and process rather than emphasizing outcomes, and who encourages open dialogue around struggles and mental health creates an environment in which these psychological skills can not only take root but also significantly improve. A punitive, negative, or high-stakes environment, however, can completely counteract any potential advantages that may be gained from a psychological intervention, thereby stifling the development and progression of the athlete.

CONCLUSION

The control of emotions is no longer seen as a marvelous “optional extra” in sporting performance but as an indispensable, non-negotiable cornerstone supporting triumph in the competitive 21st-century cauldron. Pre-competitive anxiety/negativity is a universal human phenomenon that is shared by most people and continues to be a significant challenge that needs to be addressed, however, can be effectively treated and well managed by the use of structured, multisystemic-based, and evidence-informed psychological interventions that are designed to meet the needs of the athlete. Where the field has evolved (fortunately) from a paradigm whose primary focus was all about totally “killing” (pun intended!) the pain, it now has come to be more about promoting psychological flexibility and acceptance—reflecting a more

sophisticated, holistic, and functional map of the athletic mind and psyche.

Looking to the future, the model for the future of emotional management in sport is that which is integrated, personalized, periodized, and attuned to the consensual context which the athlete is situated within. The goal isn't to produce robots that are immune to anxiety/negativity but rather, sentient beings that are psychologically supple, strong, and self-aware. We want to create an athlete who, when confronted with the demands of competition, knows how to walk the tightrope of their personal experience; who knows how to relate in a skillful way to their internal experience; and who knows how to reliably express their values and goals. By positioning the well-being and mental health of athletes at the heart of performance strategy and becoming "well-being and mental health-focused" (sic) (Rice et al., 2016, p. 107), a career path based on not just achievement, but also sustained and substantial health and happiness is laid. They must be made to understand that the mentally strongest is not a boy who is never nervous, has no tremors, is not a bundle of nerves, but is the one who has found tools to control, manage, integrate, and gracefully confront adversarial challenges.

Acknowledgments:

Nothing declared.

Conflict of Interests:

Nothing declared.

Financing:

Nothing declared.

REFERENCES

- Bicalho, C. C. F., Melo, G. F., & Noce, F. (2020). Resilience of athletes: A systematic review based on a citation network analysis. *Cuadernos de Psicología del Deporte*, 20(3), 26–40. <https://doi.org/10.6018/cpd.404831>
- Blumenstein, B., & Orbach, I. (2022). Preparatory routines for emotional regulation in performance enhancement. *Frontiers in Psychology*, 13, 920588. <https://doi.org/10.3389/fpsyg.2022.920588>
- Bühlmayer, L., Birrer, D., Röthlin, P., Faude, O., & Donath, L. (2017). Effects of mindfulness practice on performance-relevant parameters and performance outcomes in sports: A meta-analytical review. *Sports Medicine*, 47(11), 2309–2321. <https://doi.org/10.1007/s40279-017-0752-9>
- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353. <https://doi.org/10.1037/1528-3542.7.2.336>
- Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise*, 13(5), 669–678. <https://doi.org/10.1016/j.psychsport.2012.04.007>
- Freire, G. L. M., Sousa, V. C., Moraes, J. F. V. N., Alves, J. F. N., Oliveira, D. V., & Nascimento, J. R. A. (2020). Are the traits of perfectionism associated with pre-competitive anxiety in young athletes? *Cuadernos de Psicología del Deporte*, 20(2), 37–46. <https://doi.org/10.6018/cpd.399991>
- Gardner, F. L., & Moore, Z. E. (2007). The psychology of enhancing human performance: The Mindfulness-Acceptance-Commitment (MAC) approach. Springer Publishing Company.
- Kang, W., & Gong, C. (2024). Exploring potential mediating mechanisms between maladaptive perfectionism and athlete burnout based on multi-theory perspectives. *Frontiers in Psychology*, 15, 1416281. <https://doi.org/10.3389/fpsyg.2024.1416281>
- Hill, A. P., & Curran, T. (2016). Multidimensional perfectionism and burnout: A meta-

- analysis. *Personality and Social Psychology Review*, 20(3), 269–288. <https://doi.org/10.1177/1088868315596286>
- Madigan, D. J., Stoeber, J., & Passfield, L. (2019). Perfectionism and burnout in junior athletes: A three-month longitudinal study. *Journal of Sport & Exercise Psychology*, 41(2), 86-91. <https://doi.org/10.1123/jsep.2018-0268>
- Pagaduan, J. C., Chen, Y. S., Fell, J. W., & Wu, S. S. X. (2020). Can Heart Rate Variability Biofeedback Improve Athletic Performance? A Systematic Review. *Journal of Human Kinetics*, 73, 103–114. <https://doi.org/10.2478/hukin-2020-0004>
- Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The mental health of elite athletes: A narrative systematic review. *Sports Medicine*, 46(9), 1333–1353. <https://doi.org/10.1007/s40279-016-0492-2>
- Rupprecht, A. G., Gropel, P., & Beckmann, J. (2021). The effectiveness of pre-performance routines in sports: A meta-analysis. *International Review of Sport and Exercise Psychology*, 16(1), 225-246. <https://doi.org/10.1080/1750984X.2021.1944271>
- Sarkar, M., & Fletcher, D. (2014). Psychological resilience in sport performers: A review of stressors and protective factors. *Journal of Sports Sciences*, 32(15), 1419-1434. <https://doi.org/10.1080/02640414.2014.901551>
- Wergin, V. V., Beckmann, J., Gröpel, P., & Mesagno, C. (2020). Investigating cumulative effects of pre-performance routine interventions in beach volleyball serving. *PLoS ONE*, 15(1), e0228012. <https://doi.org/10.1371/journal.pone.0228012>
- Wood, S., & Turner, M. J. (2025). Integrating Acceptance and Commitment Therapy (ACT) with Psychological Skills Training (PST): A case study. *Frontiers in Psychology*, 16, 1617548. <https://doi.org/10.3389/fpsyg.2025.1617548>
- Zhang, C., Si, G., Duan, Y., Lyu, Y., Keatley, D. A., & Chan, D. K. (2016). The effects of mindfulness training on beginners' skill acquisition in dart throwing: A randomized controlled trial. *Psychology of Sport and Exercise*, 22, 279-285. <https://doi.org/10.1016/j.psychsport.2015.09.005>