Mindfulness-Acceptance-Commitment Therapy for Anxiety Management in Athletes: A Systematic Review of Current Research Evidence

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Abstract: Athletes engaged in high-level competition routinely face considerable psychological challenges. Among these, anxiety stands out as a widespread concern that not only undermines athletic output but also compromises both mental and somatic health. Over the past ten years, Mindfulness-Acceptance-Commitment Therapy (MAC), a leading example of third-wave cognitive-behavioral approaches, has drawn growing scholarly interest within sport psychology. The present systematic review consolidates the existing literature on MAC-based interventions targeting anxiety in athlete populations, offering a detailed examination of its conceptual underpinnings, treatment protocols, empirical effectiveness, and persistent shortcomings. Drawing on the most recent peer-reviewed studies, we seek to furnish evidence-informed recommendations for applied sport psychology. Rooted in Acceptance and Commitment Therapy (ACT) and Relational Frame Theory (RFT), MAC fosters psychological flexibility through a structured yet adaptable seven-component intervention model. The weight of current evidence indicates that MAC reliably reduces both competitive anxiety and associated somatic complaints. By comparison, investigations addressing trait anxiety and diagnosable anxiety disorders remain comparatively sparse. Moreover, treatment outcomes differ markedly across athlete subgroups, with competitive level, sport discipline, and sex acting as notable moderators. While MAC signals an encouraging conceptual reorientation in the treatment of athlete anxiety, the methodological rigor of the extant literature is uneven. Pressing gaps persist in studies concerning clinical anxiety conditions, extended post-intervention monitoring, and culturally tailored protocols for non-Western athlete cohorts.

Keywords: Mindfulness-Acceptance-Commitment Therapy; Competitive Athletes; Competitive Anxiety; Trait Anxiety; Psychological Flexibility; Systematic Review

1. Introduction

The rigors of intensive training regimens and high-stakes competition expose competitive athletes to an elevated susceptibility for anxiety-related difficulties. Available data suggest that elite performers contend with as many as 640 distinct daily stressors, spanning bodily injury, financial precarity, and team-based interpersonal friction, each of which carries meaningful consequences for psychological functioning [1,2]. Presentations of anxiety in athletic contexts fall broadly into two classes. The first comprises situation-bound competitive anxiety, conceptualized through three linked facets? Cognitive worry, somatic arousal, and state self-confidence [3]. The second encompasses dispositional trait anxiety and formal clinical anxiety syndromes (e.g., Generalized Anxiety Disorder, GAD), marked by chronic, disproportionate apprehension coupled with considerable functional disturbance [1]. Epidemiological findings place the worldwide GAD prevalence in athletic samples near 9%, with country-specific estimates of 8.6% among French competitors and 15% in Australian cohorts [4].

Conventional Psychological Skills Training (PST) incorporates an array of methods

including cognitive restructuring, visualization, and progressive muscle relaxation. Its foundational premise holds that anxiety can be titrated to an "optimal level" via deliberate practice. Yet when anxious states become entrenched, the control-centered logic underpinning PST may encounter therapeutic ceilings. In particular, endeavors to "eradicate anxiety" may inadvertently validate the appraisal that "feeling anxious is fundamentally dangerous"; this fortifies the verbal network linking anxiety with menace and sustains a self-reinforcing loop of experiential avoidance [5].

Mindfulness-Acceptance-Commitment Therapy (MAC) was introduced by Gardner and Moore in 2004, drawing on principles from ACT and Relational Frame Theory (RFT). A core premise of MAC is that the appropriate therapeutic focus is not anxious affect per se, but the manner in which the individual relates to that affect. Treatment endeavors to redirect athletes away from cognitive fusion and avoidance-based coping and toward mindful present-centeredness, willing acceptance, and behavioral engagement aligned with personal values [5]. The original protocol underwent revision in 2007, evolving into a versatile seven-module structure that permits clinicians to tailor session counts for each module according to the client's particular circumstances [6]. Although the uptake of MAC within sport psychology has accelerated considerably in recent years, prior systematic syntheses have concentrated predominantly on performance enhancement outcomes, devoting comparatively scant scrutiny to anxiety-specific endpoints. The present review fills this lacuna by delivering a thorough appraisal of the current evidence landscape regarding MAC for anxiety management in athletes.

Following PRISMA 2020 standards for systematic review reporting [7], we executed electronic searches of PubMed, PsycINFO, Web of Science, SPORTDiscus, and Scopus from each database's inception through December 2024. The search syntax integrated mindfulness-acceptance-commitment terminology ("mindfulness-acceptance-commitment", "MAC therapy", "mindfulness-based intervention", "acceptance and commitment therapy") with athlete-related descriptors ("athlete", "sport", "elite player", "competitive sport") and anxiety-related terms ("anxiety", "competitive anxiety", "sport anxiety", "trait anxiety", "generalized anxiety"). Eligibility required: (a) use of an RCT, quasi-experimental, or single-case experimental methodology; (b) examination of MAC or ACT-derived protocols in athletic samples; (c) reporting of numerical anxiety outcomes; and (d) publication in English-language peer-reviewed outlets. We excluded investigations focused exclusively on non-athlete groups, those lacking anxiety-specific metrics, and purely qualitative designs without quantitative anxiety indices. Two reviewers independently performed title/abstract screening, full-text evaluation, and data extraction using a uniform template; discrepancies were settled via consensus dialogue. Methodological quality was appraised with the Cochrane RoB 2 instrument for randomized trials and the JBI checklist for quasi-experimental work. Seventeen studies satisfied all inclusion criteria and were retained for final synthesis.

2. Theoretical Foundations and Core Mechanisms of MAC

2.1 Theoretical Underpinnings: Relational Frame Theory and Psychological Flexibility

The conceptual architecture of MAC draws directly on ACT's six interlocking therapeutic processes: willing acceptance, cognitive defusion, transcendent self-as-context, flexible present-moment attention, values identification, and committed behavioral engagement [5-8]. Diverging from standard PST models that strive to suppress or regulate distressing internal events, MAC places psychological flexibility at the center of its treatment model. Psychological flexibility denotes the capacity to sustain full contact with the immediate present, adopt an open and non-evaluative posture toward one's cognitive and affective content, and pursue actions consonant with deeply held personal values and aspirational objectives [6].

Relational Frame Theory (RFT) provides the behavioral account of human language and cognition that underpins MAC's intervention logic. Its central insight is that language enables the derivation of arbitrary stimulus relations, such that individuals come to react to their private thoughts as if those mental events possessed literal, objective reality. This process, designated cognitive fusion, is a hallmark of psychological rigidity [5-9]. Experiential avoidance serves as the principal driver perpetuating anxious cycles. Although efforts to suppress or escape anxiety may yield transient

relief? Thereby functioning as negatively reinforced coping? each instance of avoidance consolidates the tacit conviction that anxiety is fundamentally unbearable, and this meta-belief itself becomes a potent anxiogenic agent [6]. MAC interrupts this self-perpetuating loop by deploying cognitive defusion and acceptance-based strategies, enabling athletes to recognize that cognitions such as "I am going to fail" constitute transitory mental phenomena rather than veridical predictions, permitting these thoughts to arise and pass while the athlete remains engaged in purposeful activity [5].

2.2 Paradigmatic Comparison between MAC and Traditional PST

PST and MAC rest on divergent meta-theoretical foundations regarding the nature of psychological intervention in sport. PST proceeds from the position that internal experiences are amenable to deliberate regulation, construing anxiety as a signal to be modulated toward an assumed optimal band. MAC, conversely, holds that mental events cannot be brought under full volitional command and that anxious affect is not intrinsically pathological. Rather, the core dysfunction resides in the inflexible rule that "anxiety must first be extinguished before purposeful action becomes possible" [5]. In terms of hypothesized change processes, PST targets the form and magnitude of subjective experience, whereas MAC addresses the individual's relationship to that experience? A meta-cognitive shift that, in principle, should promote wider transfer of therapeutic gains across disparate situations [6]. Critically, PST and MAC ought not to be cast as mutually incompatible or hierarchically ordered, but rather as contextually appropriate complements. PST may prove most beneficial under conditions of acute distress, during nascent skill development, or whenever anxiety severity produces immediate performance disruption. MAC, by contrast, may yield superior outcomes for athletes grappling with persistent anxious patterns, those possessing well-automated motor repertoires, and individuals for whom control-based methods have proven insufficient [10]. It is worth observing that particular PST elements? Attentional anchoring drills and process-focused mental rehearsal? May functionally overlap with MAC's present-centered awareness training and defusion exercises [6].

3. MAC Intervention Protocols

3.1 Structure of the Standard MAC Protocol

The initial MAC protocol put forth by Gardner and Moore (2004) stipulated eight fixed sessions; this was subsequently reconfigured in 2007 into an adaptable seven-module design that affords flexibility in session length and repetition according to individual presentation [6]. MAC is commonly administered in one-on-one or small-group arrangements, typically unfolding over 7? 8 weeks with a single weekly meeting lasting 60? 120 minutes [11]. Table 1 presents a synopsis of the protocol's central modules and their constituent elements.

Table 1. Core Components of the Standard MAC Intervention Protocol

Module	Theme	Key Intervention Components
1	Psychoeducation and Baseline Assessment	Introduction to MAC theoretical principles, assessment of the individual's relationship with internal experiences, challenging beliefs about thought control, introduction to basic breathing exercises, and establishment of self-monitoring practices
2	Mindfulness Training and Cognitive Defusion	Guided mindfulness practices (body scan, three-minute breathing space, daily mindfulness integration), and instruction in cognitive defusion techniques
3	Values Clarification	Exploration of personal values, identification of congruent goals and actions, recognition of potential barriers, and initiation of value-directed activities
4	Experiential Acceptance	Cultivation of acceptance toward internal thoughts, emotions, and physical sensations through mindfulness exercises and therapeutic metaphors
5	Committed Action	Development and implementation of concrete, value-aligned action plans
6	Skill Integration and Calmness Enhancement	Synthesis of mindfulness, acceptance, and commitment skills, and development of strategies for maintaining calm under pressure
7	Maintenance and Relapse Prevention	Consolidation of long-term practice habits and development of relapse prevention strategies

3.2 Adaptations for Athletic Populations

Multiple adaptations of the standard MAC framework have been crafted to meet the distinctive demands of sport populations. Mohebi et al. executed a seven-week MAC trial with elite female competitors incorporating an active comparator arm; results revealed that MAC participants achieved reliably larger gains in mindfulness, self-compassion, and

perseverance relative to controls, with these improvements enduring through a one-month retention assessment [12]. This investigation underscored the methodological necessity of active comparison conditions to partial out intervention-specific effects from extraneous influences such as interpersonal contact and collective participation.

For collective sports, specially tailored MAC protocols have emerged to suit group training structures. Sabzevari et al. mounted an RCT with 34 elite-level beach soccer players, administering a seven-week MAC regimen through weekly group workshops supplemented with daily self-directed practice, alongside a two-month post-treatment evaluation. The MAC cohort demonstrated reliably superior improvements in repetitive negative thinking, cognitive adaptability, and on-field performance indicators compared to the reference group, with gains maintained across the full follow-up interval [13]. These data corroborate the practicality and effectiveness of MAC within team sport milieus and highlight the value of home-based exercises and follow-up contacts for sustaining durable outcomes.

3.3 Digital Delivery Modalities

The proliferation of mobile health (mHealth) platforms has prompted experimentation with digitally mediated MAC delivery aimed at broadening reach. Gao et al. tested a therapist-supported smartphone-based mindfulness protocol among Chinese university athletes, involving roughly 15 minutes of daily contemplative practice sustained across 43 days [14]. Although formal statistical comparisons did not detect differential anxiety reduction, qualitative reports pinpointed scheduling pressures as the chief obstacle to consistent engagement. The investigators observed that mindfulness protocols directed at non-clinical groups typically necessitate extended contact hours (conventional Mindfulness-Based Stress Reduction courses run eight weeks with sessions lasting as long as 120 minutes) to yield detectable mental health changes[14]. This implies that while mobile formats confer logistical benefits for time-pressured athletes, program design must carefully balance therapeutic intensity against the realities of demanding training calendars.

4. Empirical Efficacy of MAC Interventions for Athlete Anxiety

4.1 Effects on Competitive Anxiety

The capacity of MAC to attenuate competitive anxiety has garnered support from several randomized investigations. Dehghani et al. (2018) studied 31 female university basketball athletes in Iran, implementing an eight-week MAC program that yielded statistically reliable decreases in both sport-linked anxiety ($p < 0.05$) and experiential avoidance ($p < 0.05$), accompanied by moderate effect magnitudes for each endpoint [15]. Assessments conducted after the intervention indicated that MAC recipients reported heightened willingness to experience unpleasant thoughts and feelings, a shift that tracked closely with meaningful reductions in competition-related anxious symptomatology.

Varied patterns of efficacy have emerged across distinct facets of anxiety. Relaxation-based approaches appear comparatively stronger for cognitive anxiety, whereas MAC shows a pronounced advantage for dampening somatic anxiety manifestations [16,17]. This profile is congruent with MAC's theoretical logic: mindfulness exercises that cultivate non-evaluative bodily awareness are especially well-positioned to modulate physiological arousal, while cognitive defusion procedures may be somewhat less immediately potent than deliberate reappraisal for directly countering catastrophic ideation [5].

A quantitative synthesis by Buhlmayr et al. (2017) aggregating evidence from nine investigations ($n = 290$) reported that mindfulness training exerted a large overall effect on psychological performance indices (SMD = 0.72, 90% CI [0.46, 0.98]) with an even more striking impact within precision disciplines like marksmanship and darts (SMD = 1.35, 90% CI [0.61, 2.09]) [18]. Nonetheless, merely two of the constituent studies specifically evaluated MAC-based protocols, so extending these meta-analytic conclusions to MAC per se demands interpretive caution [18].

4.2 Effects on Trait Anxiety and Clinical Anxiety Symptoms

Relative to the competitive anxiety literature, empirical scrutiny of MAC's influence on trait anxiety and clinically significant anxious presentations in athletes remains comparatively thin, though initial signals are encouraging. Gross et al. (2018) contrasted MAC against PST

among female collegiate athletes and observed that although MAC did not outstrip PST in terms of athletic performance enhancement, it was markedly more successful in alleviating emotion dysregulation, generalized anxious distress, disordered eating concerns, and overall psychological disturbance. Furthermore, increments in psychological flexibility were preserved from the conclusion of treatment through a one-month retention window [10]. These patterns intimate that MAC may confer mental health dividends that extend well beyond competition-specific anxiety reduction.

A pivotal systematic review with meta-analysis from Myall et al.? notable for being the first to concentrate exclusively on elite athlete samples, restrict inclusion to RCTs, and foreground mental health outcomes? concluded that mindfulness-oriented programs hold meaningful promise for lowering general anxiety in this demographic [19]. Complementary mindfulness-focused sport investigations and narrative syntheses have examined competitive road cyclists, female university rowing crews, and mixed student-athlete groups, documenting effects spanning sport-specific anxious affect, subjective wellness, performance metrics, perceived stress, injury occurrence, and health-related quality of life [20-22]. The reviewers stressed that positioning mindfulness training as "performance optimization" rather than "mental health treatment" may diminish perceived stigma surrounding psychological help-seeking and thereby boost athlete enrollment [19].

Regarding the operative pathways, MAC's influence on sport-relevant outcomes appears to travel through enhancements in emotion regulatory capacity and dispositional mindfulness. Josefsson et al. conducted a multi-discipline RCT with 69 competitive elite athletes and determined that MAC's beneficial impact on self-appraised athletic performance was entirely transmitted through reliable gains in sport-domain mindfulness and emotion management skills [23]. In a parallel vein, Lundgren et al. assessed a condensed four-week acceptance and commitment protocol for adolescent elite ice hockey players, documenting that the treatment cohort exceeded controls on both objective metrics (goals scored, assists registered, shot attempts generated) and masked coach evaluations of on-ice performance, attentional focus, and commitment to development [24].

4.3 Long-Term Efficacy and Follow-Up Data

Assessing the durability of MAC-induced changes is essential for gauging its practical value. Published investigations have tracked participants for intervals spanning one to two months. For instance, the elite female athlete trial by Mohebi et al. confirmed that elevated mindfulness, self-compassion, and perseverance remained intact at four-week follow-up [12]. Likewise, the beach soccer RCT from Sabzevari et al. verified that reductions in perseverative cognition and gains in cognitive flexibility and performance were preserved two months beyond intervention cessation [13]. Such findings imply that relatively concise MAC protocols can generate lasting effects, although the monitoring windows continue to be modest in duration [25].

Notwithstanding these encouraging signs, extended outcome data specifically tracking clinical anxiety indicators are conspicuously scarce. Anxious symptoms in athletic populations frequently follow seasonal rhythms aligned with intensified training blocks, recuperation intervals, and proximity to key competitive events [1]. Upcoming investigations should adopt longitudinal frameworks incorporating protracted surveillance periods to map the temporal course of MAC's effects on anxiety. They should additionally probe whether dose-response relationships exist between treatment characteristics (length, session frequency) and the persistence of therapeutic benefits.

5. Existing Limitations and Challenges

5.1 Methodological Limitations of Current Research

The corpus of MAC investigations targeting athlete anxiety is marked by a constellation of noteworthy methodological shortcomings. To begin with, participant numbers in most studies are modest; Dehghani et al., for example, enrolled only 31 individuals (15 experimental, 16 control), constraining statistical power to reliably capture small-to-medium treatment effects [15]. Additionally, passive control arrangements (waitlist or no-treatment) predominate, which precludes differentiation of protocol-specific mechanisms from nonspecific contributors including expectancy effects, interpersonal contact, and collective dynamics [12]. A third concern is the practical impossibility of double-blinding in

psychotherapy trials: both investigators and recipients generally know their allocation status, inflating vulnerability to performance and ascertainment biases [15].

A fourth issue centers on the pronounced inconsistency in how MAC protocols are operationalized across studies. Certain research teams have deviated from the established manual based on personal clinical discretion rather than adhering to published guidelines, eroding both cross-study comparability and reproducibility [15]. Fifth, the monitoring of between-session practice compliance is routinely insufficient. Though Dehghani et al. employed telephone prompts to verify home exercise completion? A practice associated with superior outcomes and participant retention? The majority of investigations neglect to furnish granular adherence metrics [15].

A sweeping systematic review by Noetel et al., encompassing 66 discrete studies (aggregate N = 3908), determined that not a single included trial met criteria for low risk of bias. Accordingly, the overall confidence in the evidence was downgraded to "low" per the GRADE classification system [26]. The authors remarked that "with limited internal validity across studies, it is difficult to make strong causal claims" concerning the effectiveness of mindfulness and acceptance-oriented interventions for boosting athletic performance [26].

5.2 Conceptual Confusion Regarding Anxiety Types and Measurement

A foundational weakness permeating the current evidence is the absence of consistent operational boundaries for anxiety constructs. The preponderance of investigations has relied on competitive state anxiety instruments (e.g., CSAI-2, SCAT), which index transient, situation-tied anxious arousal rather than dispositional tendencies or formal clinical syndromes [16]. The multiplicity of measurement tools contributes substantial between-study heterogeneity, and the near-exclusive dependence on self-report means that diagnostic verification of anxiety symptoms through clinical assessment is exceedingly rare [16].

Drawing a clear line between subsyndromal anxious distress and diagnosable anxiety conditions is essential, given that the latter carry greater functional burden and may warrant more intensive therapeutic engagement [1]. At present, virtually no research has examined MAC's utility for athletes who fulfill formal diagnostic thresholds for anxiety disorders. Future work should integrate structured diagnostic interviewing or clinician-administered rating scales to arrive at more precise estimates of MAC's impact on clinically significant anxiety.

5.3 Heterogeneity of Athletic Populations

Athletic populations are far from monolithic, varying substantially along dimensions of competitive caliber, sport category, biological sex, and cultural milieu? Each of which may condition MAC's treatment effects. Evidence indicates that psychological intervention efficacy is not uniform across competitive strata: mental imagery appears particularly potent for top-tier performers, MAC seems comparatively more beneficial for sub-elite athletes, and biofeedback methods hold special promise for adolescent competitors [16]. Echoing earlier observations, differential impacts have likewise been documented across anxiety subtypes, with relaxation training outperforming MAC for cognitive anxiety while MAC surpasses relaxation for somatic presentations [16].

Sex constitutes an additional consequential moderator. Aggregated reviews repeatedly note that female athletes self-report markedly elevated anxiety levels relative to their male peers. At the same time, male athletes may channel psychological distress through externalized routes (risk behaviors, aggression, substance misuse) rather than internalized symptomatology, suggesting that conventional anxiety scales may systematically undercount mental health difficulties in male cohorts[1,27]. The disproportionate representation of female participants across MAC trials further constrains inferences regarding treatment efficacy for male athletes.

5.4 Cultural Adaptation and Localization Challenges

MAC was conceived within Western psychological frameworks, and its transportability across cultural boundaries demands rigorous examination. Although mindfulness as a concept traces its lineage to Eastern contemplative traditions, receptivity to and operationalization of such practices within athletic settings may diverge considerably from one cultural context to another [14]. The smartphone-mediated mindfulness study by Gao

et al. (2024) involving Chinese collegiate athletes revealed that while logistical barriers (time scarcity) constituted the foremost obstacle, culturally shaped factors also modulated outcomes. The research team proposed that mindfulness programming in East Asian settings might profit from amplified emphasis on savoring positive experiences as a counterbalance to culturally normative apprehensions about positive affect [14].

To optimize MAC's effectiveness for Chinese athletic contexts, program adaptations should incorporate several culturally attuned modifications. These include: embedding mindfulness exercises within regular sport training routines rather than presenting them as standalone psychological modules; harmonizing intervention content with collectivist value orientations by foregrounding group-oriented objectives and commitments; adopting flexible scheduling to circumvent clashes with competitive calendars and academic responsibilities; and leveraging digital platforms to maximize reach and sustained engagement [14].

6. Future Research Directions

6.1 Prioritize Research on Clinical Anxiety Disorders

Upcoming investigations should draw a sharp distinction between competitive anxiety and clinical anxiety syndromes and should prioritize the creation and empirical testing of MAC protocols purpose-built for athletes who satisfy formal diagnostic criteria. Recommended entrance benchmarks for such work include verification of anxiety disorder status through structured clinical interviews, or trait anxiety indices (e.g., STAI-Trait) falling above validated clinical thresholds. Outcome batteries should capture state anxiety, dispositional anxiety, disorder-specific symptom severity, and functional impairment; retention assessments should extend for no less than six months following treatment completion [1].

6.2 Optimize Intervention Protocols and Delivery Modalities

The present literature suggests that a group-delivered MAC program spanning seven to eight weeks with weekly sessions of 60? 120 minutes represents the most empirically supported standard format [6]. For athletes with clinical-level anxiety, however, extended treatment duration or scheduled "booster" contacts may prove necessary to preserve therapeutic gains over time [13]. Technology-mediated delivery channels? Smartphone applications, WeChat-integrated mini-programs? Confer meaningful accessibility advantages, though developers must ensure adequate therapeutic intensity and embed mechanisms such as instantaneous feedback and peer support structures to sustain user adherence [14].

6.3 Elucidate Mechanisms of Action and Moderating Variables

Subsequent research should deploy advanced analytic techniques including mediation modeling to disentangle the precise pathways through which MAC operates on athlete anxiety. Candidate mediating constructs encompass psychological flexibility (indexed by the AAQ-II), experiential avoidance, dispositional mindfulness (FFMQ), cognitive reappraisal frequency, emotion regulation strategy repertoires, and values clarity [23]. Concurrently, investigations should systematically probe moderator variables? Competitive tier, sport type (individual versus team), sex, cultural background, and baseline anxiety severity? To enable the eventual development of individually tailored, precision-guided intervention protocols [16].

6.4 Conduct Cross-Cultural Validation and Localization Research

A pressing priority is the cross-cultural validation and contextual adaptation of MAC approaches, particularly within East Asian settings such as mainland China. Mixed-methods research programs that pair quantitative RCT designs with qualitative interview components are recommended to develop a holistic picture of Chinese athletes' receptivity to MAC, their distinctive cultural adaptation requirements, and likely implementation obstacles [14]. Investigators should furthermore examine whether MAC can be synergistically combined with indigenous Chinese somatic disciplines? Tai Chi, Qigong? to produce culturally resonant, integrated treatment packages [14,28].

7. Conclusion

Mindfulness-Acceptance-Commitment Therapy (MAC) marks a noteworthy evolution within sport psychology, furnishing a conceptually coherent and evidence-supported framework for

addressing anxiety in athletic populations. The available research consistently attests to MAC's capacity to diminish competitive anxiety, somatic anxiety, and generalized anxious distress, while simultaneously conferring supplementary advantages in emotion regulation, psychological flexibility, and sport performance. At the same time, the evidentiary foundation is constrained by an overemphasis on competitive anxiety, a near-absence of investigations targeting clinical anxiety disorders, insufficient sample sizes, uneven methodological quality, inadequate long-term outcome data, and minimal cross-cultural empirical validation.

The profound reorientation that MAC introduces? Confronting anxiety through willing acceptance in place of attempted control, and through values-guided behavioral engagement in place of symptom eradication? constitutes a genuine paradigm shift in how athlete mental health is conceptualized and treated. Crucially, PST and MAC are best understood as complementary rather than rival frameworks: PST may be more suitable for acute anxious episodes, early-stage skill development, and circumstances where anxiety produces immediate functional interference, whereas MAC provides distinct strengths for entrenched anxious patterns, athletes with highly consolidated motor skills, and individuals who have derived insufficient benefit from control-oriented strategies.

The research agenda going forward should tackle the gaps enumerated above by clearly demarcating anxiety subtypes, executing methodologically rigorous RCTs that specifically enroll athletes with clinical anxiety disorders, refining treatment protocols and delivery formats, clarifying operative mechanisms, and undertaking systematic cross-cultural translation and validation efforts. As the evidence base continues to accumulate and intervention manuals become increasingly standardized, MAC is well positioned to assume an ever more central role in fostering both the comprehensive wellness and the enduring high-level performance of competitive athletes.

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