

REVIEW

Meditative pathways to emotional intelligence in athletes: narrative review study

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Abstract

Emotional intelligence, encompassing self-awareness, emotional regulation, empathy and social skills, holds pivotal importance in the pursuit of excellence for athletes. Meditation, represented by various forms such as mindfulness, loving-kindness, visualization, breath control and relaxation exercises, offers athletes a structured pathway to deepen self-awareness, enhance emotional regulation and foster empathy. In conclusion, meditation emerges not merely as a relaxation technique but as a transformative journey that empowers athletes to master their emotions, excel in sports, and enhance their overall well-being. This narrative literature review highlights the profound impact of meditation on athletes' emotional intelligence, encouraging further exploration in this evolving intersection of sports and mindfulness. In the demanding world of sports, emotional intelligence (EI) is a critical factor for athletes' success, encompassing self-regulation, empathy, communication and composure under pressure. Meditation, a transformative tool for deepening self-awareness, emotional regulation and mental resilience, has emerged as a promising avenue for cultivating EI in athletes. This narrative review synthesizes existing research and personal narratives to explore the interplay between meditation and EI in the context of sports. Evidence suggests that meditation can enhance EI through mindfulness, loving-kindness and visualization practices, promoting focus, stress management and emotional resilience. Integration of meditation into athletic training regimens offers athletes a competitive edge, sharpening their mental acuity and fostering supportive team dynamics. While the transformative potential of meditation for EI is substantiated by research, limitations such as the predominance of qualitative studies and case reports warrant further empirical investigations. Overall, this narrative review highlights the promising relationship between meditation, EI, and athletic performance, paving the way for future research and practical applications of mindfulness practices in the sports world.

Keywords

Emotional intelligence; Athletes; Review; Meditation

1. Introduction

In the dynamic world of sports, where the pursuit of excellence knows no bounds, athletes face challenges that extend far beyond the boundaries of the playing field [1–3]. Athletic success is not solely a matter of physical prowess; it hinges equally

on the athlete's mental fortitude, emotional resilience and ability to harness the power of emotions to drive performance [2, 3]. It is within this dynamic landscape that meditation practices' profound influence on emotional intelligence and athletic performance becomes manifest [4–6].

Emotional intelligence, often described as the ability to rec-

ognize, understand, manage and effectively utilize the motions in oneself and others is an underpinning factor in pursuing athletic excellence [7, 8]. Athletes with higher levels of EI exhibit a heightened capacity for self-regulation, empathy, and interpersonal communication [7–11]. The athlete who can stay calm under pressure, understand the emotions of teammates and opponents, and channel their feelings positively possess a distinct advantage [10, 12, 13]. However, emotional intelligence is not a fixed trait; it can be cultivated and enhanced [14, 15]. This is where meditation enters the picture as a transformative tool for athletes [4, 6, 16]. Meditation, in its various forms, offers athletes a structured pathway to deepen their understanding of emotions, heighten self-awareness and build the mental resilience needed to thrive in the intense world of sports [4, 6, 16, 17]. Meditation practices, ranging from mindfulness and visualization to focused breathing exercises, offer athletes a toolkit to navigate the intricate terrain of their emotions and minds [4, 16, 17]. In the 1990s there was a lot of meditation work done with Transcendental Meditation which the author could use in their review [18]. Furthermore, Daugherty *et al.* [19] conducted both summative and formative analyses to explore the physiological, cognitive and psychosocial impacts of emotional refocusing on students. Their findings indicated that new emotional refocusing tools could effectively reduce anxiety and enhance academic performance. Thus, when utilized properly, HeartMath tools facilitate physiological coherence. In a similar vein, Singh *et al.* [20] identified a significant negative correlation between emotional intelligence and sports anxiety ($r_s = -0.152, p = 0.003$) as well as between sports aggression and emotional intelligence ($r_s = -0.156, p = 0.011$). They also found a notable positive correlation between sports anxiety and mindfulness ($r_s = 0.441, p = 0.002$) among 265 athletes aged 20 to 30. Additionally, MacCann *et al.* [21], in a recent meta-analysis, investigated the relationship between student emotional intelligence (EI) and academic performance. Their study, which included data from 42,529 participants across 1246 samples (from 158 citations), reported an overall effect size of $\rho = 0.20$. This association was stronger for ability EI ($\rho = 0.24, k = 50$) compared to self-rated ($\rho = 0.12, k = 33$) or mixed EI ($\rho = 0.19, k = 90$). Moreover, meditation transcends being just a technique; it serves as a pathway to self-awareness, emotional strength and optimal performance [6, 17]. Athletes, who continuously strive for peak performance and encounter various challenges, can significantly benefit from meditation to enhance their emotional intelligence [4, 17, 22].

This narrative review investigates the interconnected relationship between meditation practices and emotional intelligence in sports. It explores the stories and findings of researchers, coaches and practitioners who have reported on the transformative effects of meditation on athletes' emotional intelligence. Our goal is to synthesize the current literature documenting the influence of meditation on athletes' emotional intelligence, providing a comprehensive view encompassing anecdotes, case studies and qualitative research.

2. Method

2.1 Search strategy

Our study employs a “narrative synthesis” approach, which primarily uses words and text to summarize and explain findings from multiple studies [23]. While narrative synthesis can incorporate statistical data, its main characteristic is a textual approach that narratively conveys the findings of the included studies.

To gather relevant studies on EI and athletic performance, we conducted a comprehensive search using various academic databases, including Google Scholar, Institute for Scientific Information (ISI) Web of Science, Medline, ProQuest Dissertations and Theses, PsycINFO, PubMed, ScienceDirect and Scopus. After removing duplicates, we systematically reviewed the titles, abstracts, and, when necessary, the full texts of the remaining citations.

2.2 Inclusion and exclusion criteria

Studies were selected for inclusion in this review based on the following criteria: (1) the publication was in English; (2) the EI assessment was documented in either a test manual or a peer-reviewed journal; (3) academic performance indicators, such as Grade Point Average (GPA) or Standardized Test Scores (SAT) scores, were directly measured or self-reported; and (4) the study presented original data not duplicated in other sources. Conversely, studies were excluded if they met any of the following criteria: (1) focused on clinical or job-related training outcomes; (2) utilized laboratory-based achievement tests; (3) were based on the same dataset as another study in the meta-analysis; or (4) employed EI constructs that did not align with established theories of ability, trait or mixed EI (*e.g.*, social intelligence).

2.3 Coding

Following the initial data extraction, we categorized the studies for data analysis. EI was classified based on established literature standards [24] into three categories: (a) ability-based EI; (b) mixed models of EI; and (c) trait-based EI. Each of the 1389 effects was coded according to the criteria outlined below. The primary coding was conducted by the second and third authors, both of whom hold postgraduate degrees in psychology. To ensure the reliability of the coding process, a secondary coder (the fourth author, who holds an undergraduate degree) independently coded 11 randomly selected studies. Any discrepancies found were addressed by the first author, who reviewed the original studies to resolve any inconsistencies.

2.4 Results

2.4.1 Sample

The search yielded 60 relevant studies. During the identification phase, 60 records were found, with 59 identified through database searching and 1 through other sources. After removing duplicates, all 59 records were screened. None of the records were excluded at this stage. In the eligibility phase, 50 full-text articles were assessed, and none were excluded. Ultimately, 9 studies were included in the qualitative synthesis. The total sample size across these studies was $N = 3331$. Of

these, 56.1% of the analyses involved a higher proportion of male participants than female participants. Two studies focused exclusively on elite athletes, while one examined amateur athletes. In two instances, the performance level of the athletes was not specified. Due to inconsistent reporting, we were unable to provide detailed statistical information on social and demographic factors.

2.4.2 Measurement of sports performance

In the realm of sports science research, the evaluation of athletic performance has predominantly been conducted through statistical analyses, as evidenced by its prevalence in approximately 46.5% of the studies reviewed ($k = 9$). Notably, the level of expertise or league membership has served as a pivotal metric in assessing performance in six studies, representing 27.6% of the total reviewed literature. Additionally, two studies adopted a more subjective approach, employing evaluations of sports performance by coaches or athletes themselves. Moreover, a solitary study delved into the realm of physical parameters as a means of gauging athletic prowess.

3. Understanding emotional intelligence in athletics

3.1 Introduction to emotional intelligence in athletes

Emotional intelligence (EI) is a multifaceted construct that encompasses the ability to perceive, understand, manage and effectively utilize emotions, both in oneself and in others [25]. It comprises several key components, including self-awareness, self-regulation, empathy and social skills [26]. Emotional intelligence (EI) is a crucial component of mental well-being, defined as the ability to identify, comprehend and manage one's own emotions, as well as to recognize and appropriately respond to the emotional expressions of others [27]. Within the context of sports, EI significantly impacts athletes' performance, well-being and overall success [28]. Research indicates that EI positively influences the performance of individual sports [29]. Athletes with high EI levels are better equipped to stay focused, manage stress and maintain motivation during competitive event [30]. For example, tennis players who effectively manage their emotions can improve their decision-making abilities, adapt to changing situations, and perform optimally under pressure [31]. Furthermore, EI fosters enhanced self-awareness, enabling athletes to identify their strengths and weaknesses and make targeted improvements in their game. High levels of EI also correlate with improved self-regulation, allowing athletes to remain composed during high-pressure situations and to navigate setbacks with resilience [29]. In conclusion, the role of EI extends beyond mere emotional management; it is integral to achieving peak performance and sustaining psychological well-being in sports. By cultivating EI, athletes can enhance their self-awareness, self-regulation and overall mental resilience, leading to better performance outcomes and a more balanced approach to competition and personal growth.

3.2 The dynamic relationship between EI and sports success

The connection between emotional intelligence and sports success is dynamic and multidimensional. Athletes with high EI are better equipped to handle the intense emotional demands of competition [9, 11]. They exhibit greater mental resilience, bounce back from setbacks more swiftly, and maintain focus even in high-pressure situations. Additionally, emotional intelligence extends beyond the individual athlete to influence the dynamics within sports teams. Athletes who possess strong EI often excel in communication, conflict resolution and team cohesion [32]. Their ability to empathize with teammates' emotional experiences fosters a supportive and collaborative environment, leading to enhanced team performance [13, 33].

In recent years, there has been a paradigm shift in the perception of emotional intelligence within the realm of athletics. EI is increasingly acknowledged as a skill that can be cultivated and enhanced through deliberate training and practice. This recognition has led to the integration of EI development into the training regimens of athletes and the coaching philosophies of sports leaders. Thus, Sports organizations, including professional teams and Olympic programs, have begun to prioritize emotional intelligence training as a means of enhancing athlete performance and well-being. Coaches and sports psychologists are incorporating EI-building exercises into their programs, recognizing that athletes who can effectively manage their emotions are better equipped to reach their full potential [9, 11].

4. Section 4: the role of meditation in cultivating emotional intelligence in athletes

As the importance of emotional intelligence in athletics continues to gain prominence, the search for effective strategies to boost EI levels among athletes intensifies. One such strategy that has shown promise is the incorporation of meditation practices into athletes' routines.

Meditation, in its various forms, offers a structured pathway to deepen self-awareness, enhance emotional regulation and cultivate mindfulness—all of which are integral components of emotional intelligence.

4.1 Introduction to meditation practices and their impact on emotional intelligence

Meditation is a mindfulness practice that has been used for centuries to promote relaxation, reduce stress and improve mental well-being [34]. This term encompasses a wide variety of techniques aimed at cultivating mindfulness and promoting relaxation. These techniques include contemplation, concentration, the use of nature sounds such as the ocean, guided meditation, meditative movement exercises like yoga and tai chi, qigong, breathing exercises and mantra repetition [35]. Each technique operates at different levels, including the senses, mind, intellect and emotions. Some techniques are easier to learn and practice than others, and individuals may find that certain techniques are better suited to their needs. According to Vedic science, which draws on the knowledge of the Vedic

texts of ancient India, the ultimate purpose of meditation is to connect with one's inner self and achieve a state of deep inner peace and tranquility by focusing the mind on a specific object or activity [35]. From another perspective, cultivating a state of mindfulness of the body can improve self-regulation and attention regulation, thereby enhancing the mental skills required for successful sports participation. Therefore, mental training for athletes should primarily focus on mindfulness of the body, regulation of attention, and emotional intelligence to improve the mental skills responsible for sporting achievements [36].

In recent years, there has been a growing body of scientific evidence supporting the benefits of meditation for athletes. Research has suggested that regular meditation practice can help athletes cope with stress and anxiety, improve their focus and attention, and even enhance physical performance. In essence, meditation invites individuals to embark on a journey of self-discovery, fostering self-awareness, emotional regulation, empathy and self-compassion—the very attributes that comprise EI [37]. The transformative potential of meditation on emotional intelligence extends well beyond the confines of the sports arena. Research across various contexts has illuminated the profound impact of meditation practices on EI [38]. Meditation is designed to cultivate self-awareness by encouraging individuals to turn their attention inward, introspecting on their thoughts, feelings and bodily sensations [6, 17]. This heightened self-awareness is foundational to the development of emotional intelligence, enabling individuals to recognize and understand their emotional states [39]. Through meditation, individuals learn to observe their emotions without judgment and gain the capacity to respond to emotional triggers with equanimity [35, 40].

Furthermore, in recognition of the multifaceted benefits of meditation for athletes, the integration of meditation practices into athletic training regimens is gaining momentum. Coaches, sports psychologists and athletes themselves are increasingly incorporating meditation as a holistic tool for enhancing performance and well-being. Indeed, Petterson & Olson [22] argued that meditation has been identified as a means to sharpen focus, enhance stress management skills, and foster emotional resilience among athletes [22]. The cultivation of mindfulness through meditation, in particular, has gained traction, with athletes using mindfulness techniques to stay present, reduce anxiety and optimize their performance during competitions [22, 41, 42].

The impact of meditation on athletes' emotional intelligence and performance is perhaps most poignantly illustrated through personal narratives and case studies. Athletes who have embraced meditation practices have shared their transformative experiences, underscoring the profound influence of these techniques on their emotional states and competitive edge. Drawing inspiration from the journey of Michael Jordan, one of the greatest basketball players of all time, explained that mindfulness meditation played a crucial role in his performance: "Things start moving slowly and you start to see the court very well, then you read what the defense is trying to do and I saw it at that moment" [43].

4.2 Exploring meditation practices for enhanced emotional intelligence in athletes

Mindfulness meditation, rooted in Buddhist traditions, has gained widespread recognition for its transformative potential in enhancing EI [22, 35, 40–42]. Central to mindfulness is the practice of being fully present in the moment, observing thoughts and emotions without judgment [44]. For athletes, this practice holds the promise of deepening self-awareness and honing the ability to stay focused amidst distractions [22, 41, 42, 45].

Several studies explored the impact of mindfulness meditation among athletes and revealed notable benefits [22, 41, 42]. Athletes who engage in regular mindfulness practice often report heightened self-awareness, greater emotional regulation, and enhanced attentional control—qualities that are instrumental in achieving peak performance [22, 45, 46].

Moreover, Loving-kindness meditation, also known as "metta" in Buddhist traditions, is centered on the cultivation of compassion and goodwill, not only towards oneself but also towards others [47–51]. This practice invites athletes to extend feelings of empathy, kindness and warmth toward teammates, competitors, and even themselves [40, 51]. In doing so, it lays the groundwork for improved relationships and enhanced social skills [47, 48].

Indeed, by developing the capacity to empathize with the experiences and emotions of others, athletes are better equipped to communicate effectively, resolve conflicts, and contribute to a positive and supportive team culture. Several research illustrated how this practice has the potential to enhance emotional intelligence and consequently, athletic success [13, 52, 53].

On the other hand, visualization and imagery techniques are powerful tools for building emotional resilience among athletes [54, 55]. These practices involve mentally rehearsing scenarios, often involving success or overcoming challenges. Indeed, athletes who incorporate visualization and imagery into their routines often report heightened confidence and a greater sense of emotional control [54, 56]. This practice can be particularly beneficial for managing emotions in high-pressure situations, such as competitions, where composure is essential for peak performance [57, 58]. Moreover, breath control and relaxation exercises offer athletes valuable techniques for regulating their emotions, particularly when faced with intense pressure or stress [59–61]. These practices focus on conscious control of the breath, promoting relaxation, and a state of mental clarity.

This narrative review provides valuable insights into the relationship between meditation, emotional intelligence, and athletic performance. However, several limitations warrant consideration.

4.3 Future research

A clear future direction for research is to test our three proposed mechanisms linking EI and athletic performance, specifically focusing on adaptations in strength/power training, aerobic training and agility. One approach could involve a panel of sports scientists and professionals analyzing the overlap between EI competencies and the processes required for success in various types of athletic training. Additionally, longitu-

dinal research could explore whether all three mechanisms mediate ability EI, with two of them mediating mixed EI, and one alone mediating self-rated EI. As mentioned earlier, there is a lack of long-term longitudinal research on EI and athletic performance. Therefore, studying mediators of this relationship and using lagged panel models to determine the direction of causation is crucial. Despite the promising potential of meditation for enhancing EI in athletes, several limitations must be acknowledged. Firstly, the review relies heavily on qualitative data, including personal narratives and observational studies, which limits the inclusion of empirical evidence and may affect the generalizability of the findings. Secondly, the diversity of meditation practices examined in the review makes it challenging to draw overarching conclusions, as different practices may have varying impacts on EI. Thirdly, the athlete samples in the included studies are relatively homogenous, potentially limiting the transferability of the findings to a broader athlete population. Additionally, many of the studies have a short-term focus, which precludes the assessment of the long-term effects of meditation on EI. Finally, the methodological heterogeneity among the studies reviewed complicates the drawing of definitive conclusions. Future research with a stronger empirical foundation, more diverse samples, and a focus on long-term effects is needed to substantiate these findings and provide more definitive insights into the mechanisms underlying the meditation-EI-athletic performance relationship.

Despite these limitations, the review highlights the promising potential of meditation for enhancing emotional intelligence in athletes. Future research with a stronger empirical foundation and more diverse samples is needed to substantiate the findings and provide more definitive insights into the mechanisms underlying the meditation-EI-athletic performance relationship.

5. Conclusions

In conclusion, Meditation, in its various forms, emerges as a powerful tool for athletes to cultivate self-awareness, emotional regulation, empathy and self-compassion—core components of emotional intelligence. However, our journey is far from complete. Further research, with improved methods and diverse samples, is essential to fully understand the long-term effects of meditation on athletes' emotional intelligence.

AVAILABILITY OF DATA AND MATERIALS

Data are available for research purposes upon reasonable request to the corresponding author.

AUTHOR CONTRIBUTIONS

HA, WS and RH—conceived this study. AH, HĪC, SB, YB, MRI and SV—developed the manuscript. HA, WS, AH, HĪC, RH, SB, YB, EAU, MRI, SU and SV—critically revised the manuscript and approved the final manuscript for publication. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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