This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.

Author(s): Fink, Cristina; Ruiz, Montse C.

Title: Mindfulness and Emotions in Sport

Year: 2021

Version: Accepted version (Final draft)

Copyright: © 2021 Taylor & Francis

Rights: In Copyright

Rights url: http://rightsstatements.org/page/InC/1.0/?language=en

Please cite the original version:

Abstract

Mindfulness involves awareness and acceptance of the inner feelings, including thoughts, emotional responses, and bodily sensations. Several mindfulness-based programs have been developed and implemented also in the context of sports. This chapter outlines the main components of mindfulness as well as the relationship with emotion regulation strategies, provides an overview of scientific literature on the effectiveness of mindfulness-based interventions, and includes guidelines and practical examples for the use of mindfulness-based strategies in a high-performance setting. Research evidence has provided support for the use of mindfulness-based interventions to help athletes self-regulate and improve performance.
Introduction

The key, though, is being aware of how you are feeling and how you need to be feeling. It all starts with awareness…I never had a set routine, an ironclad formula that I practiced night after night. I listened to my body and let it inform my warmup, because there are always variables. If I felt the need to shoot extra jumpers, I’d shoot more. If I felt the need to meditate, I’d meditate.

Bryant (2018)

An athlete’s present moment awareness as well as sustained task-relevant attention are pre-requisites for an optimal performance. In competitive sport, however, many factors such as the crowd noise, opponents’ actions, fear of failure, or thoughts about anticipated success constitute obstacles for athletes’ sustained attention. For the past three decades, mindfulness training has received growing interest for its potential to reduce psychological distress and promote self-regulated behaviours (Brown, Creswell, & Ryan, 2015). Mindfulness training has been applied to sports with the purpose of helping athletes develop non-judgmental awareness and improve performance (Corbally, Wilkinson, & Fothergill, 2020; Noetel, Ciarrochi, Van Zanden, & Lonsdale, 2019). In this chapter, we (a) consider the conceptualization of mindfulness and related relevant theoretical approaches for the regulation of feeling states, (b) overview mindfulness-based theoretical frameworks and the main components of these approaches, (c) present existing empirical evidence on the effectiveness of mindfulness-based interventions as they relate to emotion regulation and sport performance, and (d) conclude with specific examples of mindfulness-based interventions conducted with an Olympic level athlete.
Theoretical Considerations

Conceptualization of Mindfulness and Emotional Regulation


Mindfulness has been defined as paying attention in a particular way: on purpose, nonjudgmentally, and in the present moment (Kabat-Zinn, 1990); “a process of regulating attention in order to bring a quality of nonelaborative awareness to current experience within an orientation of curiosity, experiential openness, and acceptance” (Bishop et al., 2004, p. 232). Mindfulness involves present-moment awareness or paying attention to the inner feelings, including thoughts, emotional responses, and bodily sensations, as well as an accepting, open, and non-judgmental attitude, with the purpose of reducing cognitive vulnerability to reactivity, which may result in emotional distress (Bishop et al., 2004; Farb, Anderson, Irving, & Segal, 2014). In sport settings, mindfulness, “as a specific way of paying attention (in the present, on purpose, and with acceptance), offers a map, a guide, and a compass to approach this territory of performance” (Haberl, 2016, p. 212).

This conceptualization of mindfulness provides an alternative view of emotion regulation, which involves the individuals’ efforts to initiate, maintain, or modify the type, intensity, and duration of emotions experienced and how they express these emotions (Gross, 2014; Peña-Sarrionandia, Mikolajczak, & Gross, 2015). Mindfulness promotes awareness
and acceptance of internal states, which are critical aspects for self-regulation (see Ruiz, Bortoli, & Robazza, 2020). However, mindfulness does not imply any effort to control over emotion experience or expression. Unlike emotion regulation, which includes strategies such as withdrawal from aversive emotional experiences or expressive suppression, mindfulness promotes the experience and expression of emotions regardless of their content, intensity, or perceived valence (Moore, 2016). The purpose of mindfulness-based practice is to help athletes change the way they view cognitive content as something natural and temporary, rather than statements of fact (Gardner & Moore, 2007). By observing their inner experiences with a non-judgemental attitude, athletes may be able see thoughts as thoughts and feelings as feelings separating themselves from them, a concept called cognitive defusion, and engaging in non-reactivity to inner experiences (Hayes, Strosahl, & Wilson, 2012). Mindfulness promotes awareness of regulatory habits, which may enhance regulation by increasing flexibility in strategy selection. In addition, mindful attention and acceptance may lead to the reduction of dysfunctional emotional patterns, for instance, by helping athletes acknowledge and limit rumination or rehearsal of negative emotional triggers, thereby freeing cognitive capacity (Farb et al., 2014).

**Mindfulness and Sport Performance**

Theoretically, mindfulness and acceptance may be associated with reduced ironic rebound effects resulting from the desire to suppress dysfunctional thoughts and feelings (Wegner, 1994) and reinvestment occurring when athletes shift their attention to skill execution (Baumeister, 1984), both of which are detrimental for performance. In addition, previous research in rowers has demonstrated an association between dispositional mindfulness (i.e., tendency to be mindful) and experiences of flow (Pineau et al., 2014), which are intrinsically enjoyable experiences characterized by complete focus on the task and
merging of action and awareness among other characteristics (Csikszentmihalyi, 1990).

Another concept related to mindfulness is association or the strategy in which athletes, especially long distance-runners, pay close attention to their bodily sensations in order to optimize performance (Salmon, Hanneman, & Harwood, 2010; see also Raglin, Hettinga, & Shei, 2020). Röthlin et al. (2016) conducted a cross sectional study with 133 competitive athletes and found a negative relationship between mindfulness and competitive anxiety, and a positive association with perceived ability to perform in demanding situations. In addition, Josefsson et al. (2017) conducted cross sectional and longitudinal studies involving 242 young elite athletes and 65 elite athletes, respectively, and found a negative association between dispositional mindfulness and the athletes’ reported difficulties to regulate unpleasant emotions.

Several mindfulness-based programmes have been developed to help athletes increase mindfulness disposition or other characteristics related to athletic performance. For instance, the mindfulness-based stress reduction program includes mindfulness meditation (i.e., systematic cultivation of present-moment awareness of inner experiences; Kabat-Zinn, 1990); the mindfulness-acceptance-commitment approach (Gardner & Moore, 2007) adopts the principles from acceptance and commitment therapy; the mindful sport performance enhancement program (Kaufman, Glass, & Pineau, 2016) includes elements of mindfulness meditation to help athletes increase flow-like experiences; and the mindful meditation training for sport 2.0 (Baltzell & Summers, 2018), which integrates the concept of self-compassion (i.e., the desire to free oneself from suffering) to help athletes deal with competitive anxiety and self-criticism. Preliminary empirical evidence exists on the effectiveness of mindfulness-based interventions to enhance flow in archers and golfers (Kaufman, Glass, & Arnkoff, 2009), and university athletes (Aherne, Moran, & Lonsdale, 2011).
There are several reviews of literature on the benefits of enhanced awareness and attentional capacity associated with mindfulness practice in athletic populations. Sappington and Longshore (2015) conducted a systematic review of 19 empirical studies using mindfulness, including single-case studies, qualitative studies, nonrandomized trials, and randomized trials of athletes from different sports. Taken together, their review provided preliminary support for mindfulness-based interventions in improving performance. In a review of nine trials including 290 athletes from various sports, Bühlmayer, Birrer, Rothlin, Faude, and Donath (2017) showed mindfulness-related interventions having positive effects on mindfulness, physiological and psychological variables (e.g., salivary cortisol level, flow, and anxiety), as well as performance in precision sports (e.g., shooting, darts). In a review of 66 studies including 3908 athletes, Noetel, Ciarrochi, Van Zanden, and Lonsdale (2019) found some support for the effectiveness of mindfulness and acceptance-based interventions on dispositional flow, competitive anxiety, and performance enhancement. They also found preliminary support for the use of mindfulness and acceptance-based interventions to prevent injuries, reduce burnout, and increase confidence. Finally, in a systematic review of seven studies including 266 long-distance runners, Corbally et al. (2020) found small to moderate effects of mindfulness-based interventions for reducing competitive anxiety and effort perception.

Overall, there is empirical evidence demonstrating that mindfulness-based interventions can influence relevant factors that have an impact on athletic performance. Findings also highlight possible avenues for future research, including potential health benefits such as the reduction of burnout, prevention and management of injuries, and management of dysfunctional emotional eating (see also Devonport, Nicholls, & Chen-Wilson, 2020). The existing body of literature, however, reflects the need for more rigorous research designs such as randomized control trials.
Applied Recommendations

In the following section, we provide applied recommendations for the use of mindfulness-based strategies in the optimization of performance. The process may involve the following steps: (1) initial evaluation and awareness, (2) promoting acceptance of pleasant and unpleasant performance related experiences, and (3) commitment to remain focused on task-relevant aspects. We illustrate this procedure with examples from actual interventions implemented by the first author in the optimization of performance of a 28-year-old male athlete competing at Olympic Games (to protect the athlete’s anonymity we do not indicate the type of sport). Based on her 25 years of experience working with athletes competing at the highest level (i.e., Olympics, World Championships), she has observed that athletes who usually achieve the best results are those who are not afraid of dealing with their emotions, are able to be mindful, experience self-doubt and can live with it.

Initial Evaluation and Awareness

The first step involves an initial evaluation and the identification of experiences associated with performance. Recalling past performances and associated experiences helps athletes increase awareness about their own experiences and the influence these have on performance. Practitioners may use instruments (e.g., individualized profiling procedures, see Ruiz et al., 2020) to help athletes accurately describe such experiences. In the case here described, the practitioner asked David (pseudonym) to think back to training sessions and competitions when he performed really well. He was asked to recall how he felt prior to such performances including bodily sensations such as heart rate or breathing (e.g., was the pattern quicker or slower than usual?), and energy level. David identified several labels that provided
information about activation (i.e., high vs. low) and hedonic tone (i.e., pleasant vs. unpleasant). Figure 1 displays the words David identified.

[INSERT FIGURE 1 HERE]

Promoting Acceptance of Inner Experiences

The second step involves the normalization of unpleasant experiences and promotion of an accepting attitude. Some athletes assume that only pleasant states such as confidence are associated with excellent performance. In contrast, athletes may experience a combination of pleasant and unpleasant experiences. For instance, David pointed out an existing struggle when dealing with his emotions arousing from his confrontation with the coach while receiving feedback during training. Thus, the goal of the first sessions was to discuss the importance of becoming aware of his feelings during training and competitions, accepting the experience of unpleasant emotions rather than avoiding or trying to control them, recognising the own useless reactions to coach feedback and let go of the emotions he experienced at the moment.

After a couple of sessions, David was open to discussing his emotions and bodily sensations, and he revealed that he felt really anxious in preliminary rounds. Once he made it to the final, he would feel more confident and in control, however, the preliminary rounds where incredibly stressful for him. He opened up about having self-doubts and sometimes experiencing nausea because of pre-competition anxiety. Then, the goal was to make him understand that Olympic Games can be a roller coaster of emotions and to highlight the need to mindfully “accept the ride” as opposed to falling into the trap of trying to avoid or deny the own feelings (Fink-Sisniega & Haberl, 2005). He was asked to remember how he felt prior to his good performances in the previous Olympics, and to identify how he would like to feel and what actually worked for him in competition.

Regaining Focus
To help David prepare for what he would experience, he was involved in self-awareness activities and then presented with different scenarios. The focus was on anticipating and dealing with the own possible reactions, and regaining attention or choosing where to direct attention. At first, he was instructed to direct his attention to different parts of his body and monitor the level of activation or relaxation (“body scan”). He was also asked to notice his inner thoughts and emotional reactions. The goal was to help him understand the importance of being aware of his feelings and making the decision on whether to act or not upon those feelings and thoughts. Once David opened up to explore these situations, he became aware of the different sensations he had and the thoughts and feelings that would come up. David was very descriptive with how he felt:

Before the competition, you are trained, prepared, strong...your mind goes to fear of making mistakes, and starts reviewing all the possible things that could go wrong...
your body tightens, your attention narrows, your breathing gets faster and superficial and that causes your heart to beat faster. You react as if the bad outcome is already happening and that makes you more likely to mess up.

David improved his awareness of different physiological responses, including increased heart and breathing rate, sweaty palms, muscle tension, stomach issues, as well as cognitive responses, such as rumination, jumping from thought to thought, ineffective attention pattern. He also became aware of sources of distraction, such as thoughts about the past (e.g., mistakes or celebrating anticipated success too soon) or the future (e.g., “if I do this” or “if I miss this”), lack of clarity (e.g., mechanical analysis or trying to focus on too many things at once), or negative bodily sensations (e.g., muscle fatigue, pain, heat or cold).

Table 1 presents an exercise that helped David identify his experiences, thoughts, behaviours, and the consequences of these, before, during, and after past competitions. The
goal was to help David recognize possible automatic thoughts and responses, and to develop
a plan of action to redirect the focus of attention on the task at hand. David was trained in
making the distinction between *a time to think* and *a time to act*. Once ready to perform, he
developed specific cue words or short sentences to regain focus on main action he needed to
take (e.g., push, explode, stay low…) or an area to pay attention to (e.g., hips, eyes). He was
reminded of the relationship between inner experiences and performance, the importance of
letting go of unpleasant emotions, and to focus on aspects of his performance he could
control.

[INSERT TABLE 1 HERE]

In the next step we analysed and developed a plan to deal with stressful situations. A
series of potentially stressful situations were identified together with David’s responses,
thoughts, typical behaviours, and ways to respond more effectively (see Table 2). The initial
list included 50 situations. David developed personal strategies to be incorporated into
flexible routines for adaptation to specific situations (as Kobe Bryant’s quote highlights in the
chapter introduction). Most of the anticipated stressful events were then perceived as part of
the process and therefore no longer stressful. This work went on for several months before
the Olympics and continued for several years, which led David to participate in the next two
Olympic Games.

[INSERT TABLE 2 HERE]

Discussing the experience of other athletes involved in similar potentially stressful
events was helpful to David. The example of the soccer player Brandi Chastain was
particularly useful. In her account of the World Cup final she provided an example of the
thoughts that can creep up on athletes when they least expect it:
We walked through the shadowy tunnel at Giant’s Stadium in New Jersey for the opening game and stepped out into the bright sunlight. A huge roar burst from the capacity crowd. The flashing of thousands of cameras exploded before our eyes, and the smell of fresh-cut grass was heavy in the air. It was all finally happening. As I stood there, arm in arm with Kristine Lilly, I was flooded by a rush of anxiety. Oh my God, I have to perform, I realized. I was paralyzed with thoughts I had never had before on a soccer field. What if I can’t hold up my end? What if I don’t live up to the expectations of my teammates, or myself? I was overwhelmed by the enormity of the game, the culmination of all the planning, training, and waiting. There was even talk that if the U.S. Team didn’t win the tournament, the event would be a failure and not live up to its promise to prove women’s soccer was worthy of attention. I actually began to shake. (Chastain, 2004, p. 175)

Brandi goes on to explain how they had worked as a team on what they would focus on and how to filter what they could not control. Examples like this may be used to help increase athletes’ perceived self-efficacy.

In summary, at the beginning of the consultancy work, David was unsatisfied with the way he was responding to the feedback of his coach and how he was feeling in certain competitions. The intervention helped him increase awareness of the own thoughts, feelings, and behaviours, deal with the experience of unpleasant emotions, and focus attention to the present moment.

Conclusion

Mindfulness-based interventions aim to develop present moment awareness and acceptance, with the goal of helping individuals deal with their inner experiences. For the past thirty years, there has been a growing interest in the application of mindfulness as well
as researching the effectiveness of such interventions for the optimization of athletes’ performance and well-being. Several mindfulness-based approaches have been developed in the context of sports. Preliminary empirical evidence provides support for the use of mindfulness-based interventions, although further research is warranted. The chapter provides practical guidelines for the use of mindfulness-based interventions and an actual case to exemplify the process. The main aspects of the mindfulness-based intervention presented involve awareness of inner experiences, understanding of the impact of experienced emotions, normalizing the experience of unpleasant emotions, learning to perform despite experiencing unpleasant emotions, being accountable for own feelings, actions, and performance in training and competition.
References


Table 1

Analysis of actual David’s experiences, behaviours, and consequences

<table>
<thead>
<tr>
<th>Situation</th>
<th>I feel</th>
<th>I think</th>
<th>I do</th>
<th>Consequences are</th>
</tr>
</thead>
<tbody>
<tr>
<td>The day before competition, in training</td>
<td>Very relaxed</td>
<td>Everything will go as planned I could mess up</td>
<td>Focus on what I can control and manage Since I am a little anxious, I do my breathing exercise and let the thoughts go by</td>
<td>I feel good and confident</td>
</tr>
<tr>
<td>The night before</td>
<td>A little restless</td>
<td>I should not worry about it</td>
<td>Do a relaxation exercise and focus on my breathing</td>
<td>I fall asleep</td>
</tr>
<tr>
<td>When I wake up</td>
<td>Excited, nervous, ready</td>
<td>Finally!! I want to get to the competition I feel butterflies</td>
<td>Do a mental check of what I need to do to get ready</td>
<td>I feel like I got this</td>
</tr>
<tr>
<td>When I get to the competition</td>
<td>Anxious</td>
<td>I want everything to go as planned and start focusing my attention on what I want to do</td>
<td>Get myself situated</td>
<td>I feel ready even though I am a little stressed</td>
</tr>
<tr>
<td>At warmups</td>
<td>Activated</td>
<td>I want to have a good warmup and I know what I need to do I am making sure I pay attention to what I want rather than what I think and feel</td>
<td>Focus on every movement at first and then I trust myself and just let myself go</td>
<td>I am ready even though I am anxious</td>
</tr>
<tr>
<td>During the competition</td>
<td>Energized, focused, activated, in the zone</td>
<td>Not thinking that much, just visualize myself doing well and then let things happen Refocusing when I need to</td>
<td>Let myself perform, and use my refocusing cues when I need to</td>
<td>I end up doing well because I trust myself and I don’t overthink it</td>
</tr>
<tr>
<td>After the competition</td>
<td>Relieved, happy</td>
<td>I need to do this more often</td>
<td>Evaluate how I did and why</td>
<td>Learn from this competition</td>
</tr>
</tbody>
</table>
### Possible stressful situation

<table>
<thead>
<tr>
<th>Possible stressful situation</th>
<th>What do I think and feel</th>
<th>What do I do</th>
<th>What will I do</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the coach gives me feedback I don’t agree with</td>
<td>I think he is wrong and doesn’t understand what I need. I get frustrated</td>
<td>I argue and defend why I am doing things the way I am doing them</td>
<td>I will listen to the coach and incorporate the information I am given</td>
</tr>
<tr>
<td>When I am getting angry with the way training is going</td>
<td>I start thinking about how I would rather not have so many distractions. I get angry and at times lose my focus</td>
<td>I either refocus and can get on with it or I get angry and can’t focus as well</td>
<td>I will be aware of what I am feeling and I will choose to focus on my training</td>
</tr>
<tr>
<td>When I am not feeling 100%</td>
<td>I feel like I am not going to perform as well</td>
<td>I have learned to focus on what I have and focus on what I can do that day</td>
<td>Continue focusing on what I can control or manage</td>
</tr>
<tr>
<td>When I feel I am not getting better</td>
<td>I start thinking of how much time I have put into this and I feel frustrated</td>
<td>I go back to focusing on small gains and focusing on the process</td>
<td>Continue to focus on small gains and trusting the process</td>
</tr>
<tr>
<td>Social media and interviews</td>
<td>Overwhelmed, I am a private person and don’t like social media, I keep it to a minimum because it stresses me out</td>
<td>I try to avoid it and try to leave before I get interviewed and ask to the minimum required</td>
<td>I can make a plan to handle this better. I can’t avoid it, so if I embrace it, I could learn to handle it better</td>
</tr>
<tr>
<td>When they distract my coach</td>
<td>I get very annoyed</td>
<td>Talk to my coach to get what I need</td>
<td>Talk to my coach so that we are both on the same page dealing with distractions</td>
</tr>
<tr>
<td>When I don’t understand what the coach is asking of me in video sessions</td>
<td>Try to listen but have a hard time, I get distracted and start daydreaming</td>
<td>I try to refocus and listen</td>
<td>Make sure I talk to the coach after the session</td>
</tr>
</tbody>
</table>
Figure 1. David’s experiences associated with performance

![Emotion Intensity Diagram]

- **Pleasant**
  - Explosive
  - Energized
  - Strong
  - Vigorous
  - Enthusiastic

- **Unpleasant**
  - Tense
  - Jittery
  - Tight
  - Anxious
  - Angry

- **High Intensity**
  - Loose
  - Fluid
  - Relaxed
  - Satisfied
  - Easy-going

- **Low Intensity**
  - Fatigued
  - Tired
  - Exhausted
  - Lethargic
  - Bored

- **Unpleasant**