Case Studies in Sport and Exercise Psychology, 2022, 6, 78-93
https://doi.org/10.1123/cssep.2022-0002

Human Kinetics
CASE STUDY 9

"We React Less. We React Differently. We React Better": A Case Study of a Mindfulness-Based Intervention for Olympic Referee Performance

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This case study details the experience and results of the first author's work as a clinical sport psychologist contracted by the International Volleyball Federation to develop and deliver a mindfulness-based intervention to volleyball and beach volleyball referees leading up to the 2016 Summer Olympic Games. Interviews with the referee commission revealed referees' high levels of pre- and in-game stress, which can inhibit their cognitive decision-making ability needed to perform at a high level. A five-stage (emotional intelligence, stress management skills, concentration, mental imagery, and motivation) mindfulness-based intervention was developed to address referees' attentional skills, emotional readiness, and mindful awareness. The five stages were delivered over the 4 months preceding the Games, where the clinician was also available on-site for individual preparation. Referees completed pre- and postintervention quantitative (Five-Facet Mindfulness Questionnaire, Competitive State Anxiety Inventory-2, and Concentration Skills Self-Help Test) and qualitative surveys as well as a post-Olympics evaluation of the practical tools introduced during the mindfulness-based intervention. In-game performances were evaluated by referee delegates prior to and at the Olympics. Analysis of the data showed significant positive changes in the mindfulness factors observing and nonreaction, referees' concentration skills, and the evaluations of in-game performances. Multiple tools were reported to be highly useful and frequently implemented, including during the Olympics.

Keywords: stress, concentration, awareness, emotional intelligence

Literature Review

Refereeing and Psychology

Refereeing performance consists of making decisions following in-game events. These decisions are based particularly on the ability to quickly process information, thus allowing the event to proceed swiftly and in accordance with the rules of the game, which is essential to the good progression of the match (Dosseville & Garncarzyk, 2007). Such information processing cannot be done without attention (Ceridono et al., 1986), a cognitive capacity that Nideffer (1976) described in detail, differentiating between narrow internal attention and broad internal attention. We can assume that for referees, *narrow internal attention* is applied in specific situations of play and precise application of rules, whereas *broad internal attention* would apply more to the knowledge and application of the laws of the game by taking in consideration the global match context, as acquired through experience and in referees' development and training process (cf. sequential effect studies; Plessner & Betsch, 2000). It follows that training these attentional abilities would allow referees to perform their in-game duties more reliably. In parallel, referees' attentional processes, in particular linked to the *broad* and *narrow external attention*, have been the focus of numerous studies in a more cognitive–perceptual perspective (e.g., crowd influence [Balmer et al., 2007; Boyko et al., 2007; Downward & Jones, 2007; Lane et al., 2006; Nevill et al., 2002; Pettersson-Lidbom & Priks, 2010; Sutter & Kocher, 2004] and flash-lag effect [Helsen & Bultynck, 2004; Helsen et al., 2006; Mascarenhas et al., 2006]). Along with attentional skills, optimal refereeing performance has been documented to be fostered by high levels of self-confidence (Schnyder & Hossner, 2016) and efficient coping strategies (Anshel & Weinberg, 1999).

Despite being essential to the smooth running of the game, referees are often criticized (Dosseville & Garncarzyk, 2007), or even attacked (Folkesson et al., 2002; Rainey, 1994), provoking stress that is bound to distract them and undermine the quality of their performance (Alonso-Arbiol et al., 2005; Anshel & Weinberg, 1995; Voight, 2009). A general shortage of referees as well as a high turnover rate among referees has been noted (Briganti et al., 2018; Taylor et al., 1990). These factors may be influenced by the low level of enjoyment reported by referees (VanYperen, 1998) as well as stress and pressure on their careers, resulting in high rates of dropout (Piffaretti, 2010). Indeed, refereeing has been documented to be perceived as a very stressful and psychologically demanding function in sports, as perfection is expected and mistakes are highly condemned (Ceridono et al., 1986). In addition, Goldsmith and Williams (1992) showed that volleyball (VB) referees are afraid of physical harm, feel great time pressure, and a fear of failure. Developing stress management capacities might, then, also contribute to enhancing refereeing performance (Ceridono et al., 1986).

Because of the psychological demands on referees, training programs have been applied to this specific population, either through a cognitive–perceptual approach (e.g., see Helsen & Bultynck, 2004; Helsen et al., 2006) or a mental skill support approach (Mathers & Brodie, 2011; Piffaretti, 2008; Wolfson & Neave, 2007). This scarce literature shows that the first attempts in applying mental skills training to referees were of a cognitive–

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behavioral nature, as has been shown to be successful with athletes (Gordon, 1990; Jones, 1993; Wadey & Hanton, 2008), with important aspects in psychoeducation.

Mindfulness

Mindfulness is the ability to be completely aware of the present moment (Hanh, 1998). To be in this particular state of mindfulness, individuals must be able to completely detach from the past and future (Hanh, 1998), consciously direct their attention to the present, and maintain a nonjudgmental attitude toward their perception (Kabat-Zinn, 2013). This nonjudgmental attitude allows events and experiences to occur without rejection or avoidance (Heidenreich et al., 2007). From a more operational perspective, Kabat-Zinn (2009) referred to mindfulness as the awareness that arises as a result of intentional attention to the present moment, brought without judgment.

Within mindfulness, there is a distinction between a mindful disposition and a mindful state. The *mindful state* is composed of the behaviors exercised when the individual is actively meditating, whereas the *mindful disposition*, or *trait mindfulness*, is the individual's stable capacity for mindfulness in daily life (Treadway & Lazar, 2009). Mindfulness is primarily trained through mindfulness practices, such as with meditation or yoga sessions (Kabat-Zinn, 2005), as is trait mindfulness, which increases with mindfulness practice (Shapiro et al., 2011) and age (Thirumaran et al., 2020). Mindfulness has many benefits, including diminishing stress and anxiety (Berghmans et al., 2010) and facilitating emotional regulation (Jekauc & Kittler, 2015).

Mindfulness and Sport

Mindfulness influences flow states (Csikszentmihalyi, 1990) and has a positive impact on performance, especially when an athlete is overly anxious (Röthlin et al., 2016). *Flow*, associated with a greater possibility of achieving peak performance, is, indeed, characterized by a feeling of mind–body fusion, a sense of mastery, deep concentration, increased confidence, and an overall release of tension. This mental fluidity is described as one of the pathways to a positive experience of sport (Hanin, 2000). More recent research (Aherne et al., 2011; Bernier et al., 2009; Gardner & Moore, 2004; Kee & John Wang, 2008) has shown that a mindfulness-based approach, through its relationship to nonjudgmental thinking and attention to the present moment, may well promote access to flow, thus leading to peak performance. Golfers who have trained in mindfulness find that they possess better attentional skills, demonstrate more flexibility, and are more easily able to maintain focus (Bernier et al., 2009).

In addition to facilitating access to flow, mindfulness is also beneficial for managing emotions. Indeed, Jekauc and Kittler (2015) found that the ability to regulate one's emotions emerges from a state of mindfulness and improves sports performance. Furthermore, following mindfulness-based training, Gardner and Moore (2004) highlighted that by using these techniques, individuals develop an acceptance of emotions as natural experiences, thus promoting their effective management instead of reactive modes, such as suppression or emotional outburst.

Mindfulness and Refereeing

Researchers have already explored referees' performance and abilities (Mascarenhas et al., 2005), their decision-making process (Schnyder & Hossner, 2016), and their thinking style (Arslanoğlu et al., 2018). To the authors' knowledge, however, no studies on the effectiveness and appropriateness of a mindfulness-centered development approach to the refereeing practice have been published to date. Provided the identification of attentional skills and emotional management as crucial elements of elite sport officials' experience (Schnyder & Hossner, 2016), and the recognition of the positive effects of mindfulness on such attentional skills and emotional management (Berghmans et al., 2010; Bernier et al., 2009; Jekauc & Kittler, 2015), applying a mindfulness-based approach to referee development appears to be a logical course of action. Moreover, mindfulness seems particularly suited for optimal refereeing performance as it fosters the development of a nonjudgmental attitude, which represents a key component for developing an impartial and neutral stance in the officiating decision-making process. This approach subsequently hinders the documented influences of crowds and sequential decisions (Balmer et al., 2007; Boyko et al., 2007; Downward & Jones, 2007; Lane et al., 2006; Nevill et al., 2002; Pettersson-Lidbom & Priks, 2010; Plessner & Betsch, 2000; Sutter & Kocher, 2004).

The Case

Initial Demand

In December 2015, prior to the 2016 Summer Olympic Games in Rio de Janeiro, the International Volleyball Federation (FIVB) expressed its desire to better prepare its international VB and beach volleyball (BVB) referees with a particular focus on the psychological aspects of their duties. The FIVB recognized that in addition to the upcoming Olympics, officials were under increasing psychological pressure due, in large part, to the implementation of new technologies (i.e., tablets, headset communication, electronic score sheets, challenge system) and the demand to shorten times between rallies to accommodate a game format suited for television.

Before any interaction with the referee participants, the first author conducted an initial evaluation of their performance conditions via clinical interviews with members of the FIVB referee commission, comprised of former VB and BVB referees and referee managers. The evaluation consisted of two in-depth 3-hr meetings, which took place in the FIVB headquarters in Lausanne, Switzerland, in January and February 2016. These meetings were group interviews wherein the first author asked open-ended questions to better understand the lived experiences of the former referees and followed up with questions about the themes raised in their answers. Each meeting was attended by the same group of referee commission members, with eight participants in each meeting. The result of this evaluation was the conceptualization of a novel "from theory to practice" intervention, which is outlined later. Consistent with the literature (Alonso-Arbiol et al., 2005; Anshel & Weinberg, 1995; Dosseville & Garncarzyk, 2007; Goldsmith & Williams, 1992; Helsen & Bultynck, 2004; Piffaretti, 2010; Rainey, 1994; VanYperen, 1998), the preliminary clinical evaluation found that:

(a) Referees have to make decisions very frequently, each of them potentially important and, therefore, stressful as they directly affect the outcome of a match. A consistent attentional focus on the match is, therefore, a key factor for success.

(b) Because of their limited physical mobility during matches, VB and BVB referees have very few options to manage their emotions by moving, running, or otherwise physically relieving their inner tensions. Thus, especially when faced with protests from coaches or players, they have to develop alternative ways to cope with stressful situations without expressing them physically.

(c) Referees have very limited exposure to sport psychology services.

(d) In VB, referees often receive their daily match appointments, that is, which match(es) they will be officiating, on the day of the game(s). This leaves them very little time to prepare for the specificities of the match(es) to which they are assigned.

(e) Due to frequent travel and sometimes difficult accommodation conditions, VB and BVB referees suffer from travel fatigue and jetlag, which impairs their concentration and, therefore, the quality of their performance.

Development of the Intervention

Based on the FIVB's demand and the preliminary psychological analysis, an intervention plan was designed by the first author (who was also the clinician who delivered the intervention) to respond specifically to the referees' needs. The FIVB's request was to improve the referees' observable decision-making performance in major competitive events, though it was our understanding that such decision-making performances are the consequences of more elaborate psychological processes. The FIVB's effort to engage with a sports psychologist to achieve this observable performance enhancement illustrated their similar understanding of this progression. Thus, throughout this paper, our use of the term referee "performance" refers to the accuracy of referee decision making as well as to their psychological states preceding their decisions.

This sort of definition requires the assumption that psychological states can be consciously and intentionally altered through training, which served as part of the theoretical basis to pursue a mindfulness-based intervention (MBI). In designing such an intervention, the definition of a refereeing decision-making model was needed. This model would provide the criteria to be highlighted as pertinent aspects of the officiating performance to be optimized. Thus, the following information-processing model of decision making was adapted from existing information-processing models (Atkinson & Shiffrin, 1968; Rogers et al., 1999). Figure 1 summarizes the adopted model. According to this model, the environmentally adapted response (a correct refereeing decision in this case) will depend on the quality of the information-processing progression. This progression includes the following: (a) awareness of the stimulus (sensory capturing of the relevant information, such as ball hitting the floor near the line); (b) perception of the stimulus (interpretation of the stimulus as pertinent to decision making); (c) comparison of the information with stocked mental models (the rule of the game as memorized by the referee and the existing match experiences); (d) the interpretation of the stimuli resulting from this comparison; and (e) the ensuing response (decision of the referee, e.g., "the ball is out").

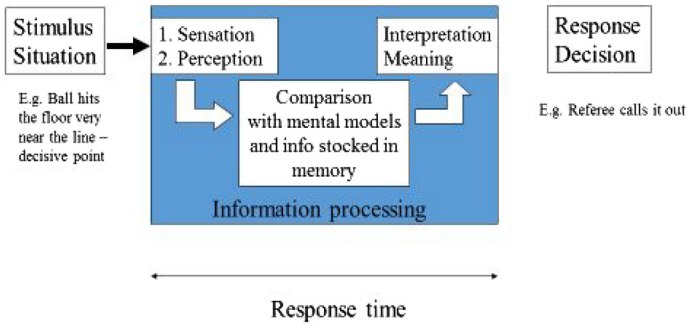

Figure 1 — Information-processing model of decision making in refereeing.

Based on an information-processing model of decision making, the efficiency of which is defined by correctness, game appropriateness, and speed of the decision, the first author, in accordance with the refereeing managers, defined the objectives of the intervention as the development of the following psychological targets:

(a) The attentional skills for sustained, accurate assessments of match events.

(b) The emotional readiness to make critical decisions in a short time frame (decisiveness and courage) while maintaining the necessary clear mindedness that ensures access to the existing memorized models and past experiences (calm and poise).

(c) The mindful awareness for delivering the prior two elements in the larger context of the individual human being and his or her environment (a critical skill to be able to "sell the decision" correctly and in accordance with the game context).

For each of the targets, specific measurement instruments were applied to evaluate psychological skills levels prior to and after the intervention (see "Measurement Instruments" section).

The intervention plan was adapted from previously existing MBIs in sport, specifically the mindfulness sport performance enhancement (Kaufman et al., 2009, 2019) and the mindfulness–acceptance–commitment approach (Bernier et al., 2009; Gardner & Moore, 2004; Moore, 2009). This intervention, then, consisted of five stages of intervention, as described in Table 1.

Each stage included a theoretical workshop and a series of meetings to practice the theory. The details are described later in the "Intervention Procedure" section. Each stage addressed the three objectives of the intervention in some way, though certain stages addressed particular objectives more specifically (e.g., emotional intelligence targeting emotional readiness). At each stage, the referees received a written document summarizing the content as well as practical exercises and audio files to continue practicing their skills between meetings. In addition, upon request, the referees could benefit from individual feedback and personalized advice from the clinician. A summary of the primary mental skills tool(s) from each stage follows, and a complete explanation of each of the mental skills tools, as listed in the last column of Table 1, can be found in Appendix.

Emotional Intelligence

The goal of this stage was to provide referees with an understanding of how emotions affect actions in daily life and, in particular, in sports. Emotional intelligence is defined as the ability to perceive, understand, and influence one's own emotions and those of others (Salovey & Mayer, 1990). The variability in emotional intelligence implies that, given the same situational stimulus and resulting emotions, the individual's emotional processing can lead to contextual success or failure (Brasseur et al., 2013). In other words, the issue is not the emotion itself as a dysfunctional outcome, but it is, rather, the individual's ability to process and react to the emotion once it is experienced (Laborde et al., 2016). Knowing how to perceive and understand one's emotions allows for a more functional processing of them and, thus, avoids unintentional reactions, such as fight, flight, or freeze (Goleman, 1995). More recent research suggests that an elevated capacity for mindfulness is actually a prerequisite to developing one's emotional intelligence (Piffaretti et al., 2021).

Table 1 Intervention Contents and Structure

Stage	Mental objective	Principal attitudes	Mental skills tools
Emotional intelligence	Mindfulness of automatic states of mind	Acceptance/nonjudgment	• Mindful breathing • Body scan • Self-observation • Mountain meditation
Stress management strategies	Management of parasitic thoughts	Right effort/patience	• STOP technique • Mindful yoga • "Maybe" technique • Sitting meditation
Concentration	Understanding how attention works	Beginner's mindset	• Mindful eating • Attentional style • Story of the strawberry • Slackline
Mental imagery	Anticipation of sport situations	Confidence	• Visualization • Mental imagery of best performance • Refocusing plan • Pre- and in-competition routines
Motivation	Goal management	Letting go	• Performance profile • Letting go meditation

One of the exercises used to work on emotional intelligence was a mindful breathing exercise. This 15-min-long mindfulness practice consists of training one's attention to intentionally focus on the sensations of breathing while welcoming nonjudgmentally any other inner experience—sensations, emotions, images, and thoughts. During the exercise, participants are invited to acknowledge every lapse in intentional attention without reacting to it but, rather, recognizing the emotion and/or thought that caused the distraction and gently but firmly refocusing one's attention on the next breath. Based on that practice, participants were asked to nonjudgmentally record the events of a pleasant or unpleasant experience, the emotions observed during the experience, and the thoughts and physical feelings perceived at the time. Then, in a process-oriented step, the subjects noted the thoughts and feelings experienced at the time of recording in an attempt to reveal a personal interpretation of the recorded experience.

Stress Management Strategies

Stress management allows the individual to focus on their way of coping with events (Le Scanff, 2005). The principal tool used in this stage was the STOP technique. STOP is an acronym for a four-step process:

S: Stop or interrupt the flow of thoughts and behavior and be aware of the emotion and the process it expresses.

T: Take a moment to breathe mindfully.

O: Observe the situation from multiple perspectives with no judgment.

P: Proceed toward a new path forward in consideration of these multiple points of view, focusing on precise points under the individual's direct control.

This tool relies on intentional breathing when facing stressful events. Breathing is used to foster the individual's awareness and capacity to stay in the present moment despite uncomfortable emotions, ultimately facilitating the elaboration of an adapted response to the challenge. Attention is intentionally directed away from the unfolding progression of parasitic thoughts toward the visualization of alternative perspectives on the same events. The individual then integrates this new perception and experiences mental flexibility in the search for an adapted mental or behavioral response.

It is worth noting that this STOP technique is not the same as "thought stopping" (Ziegler, 1987). Thought stopping aims to reduce, over a longer period of time, the appearance of negative thoughts, whereas the STOP technique interrupts the individual's "stream of thought," creating a momentary pause from which the individual might intentionally redirect their attention. This kind of technique is one that features prominently in the current practices of mindfulness-based cognitive therapy (Segal et al., 2019).

Concentration

The third stage, concentration, makes it possible to limit the nuisances that disrupt attention, thus improving one's ability to attend intentionally and attain flow (Csikszentmihalyi, 1990; Kaufman et al., 2009), which consequently tends to improve performance of the task at hand (Smith, 1996). To illustrate how concentration fluctuates and to explain how to train one's ability to concentrate, mindfulness exercises (e.g., mindful eating), cognitive models, and the practice of slacklining were introduced. For example, in a psychoeducational approach, Nideffer's (1976) cognitive model of the four attentional styles was explained to the participants to raise awareness of (a) the voluntary nature of concentration, defined as the direction given to attention according to what is pertinent in a given situation and (b) the mental flexibility needed to shift the attention from one style to another, depending on the changes in the situation. Referees were taught how to recognize which match situation needed which kind of attentional style. External narrow style was acknowledged to be necessary when judging block touches or ball in/out calls. External broad style is needed when supervising line judges' signals before making ruling decisions or in time-keeping tasks. Internal broad style was identified as an important attentional component, such as in achieving consistency with the global refereeing guidelines. Finally, internal narrow style was recognized to be necessary when maintaining a calm poise in a tense situation, for instance, by breathing deeply after a disputable call.

Slacklining, the physical exercise of walking across a narrow, taut strap attached roughly 30 cm above the ground, was also used

as a skill for developing concentration. The physical challenge of maintaining stability while walking on an unfamiliar and unstable surface allows one to confront one's own attentional limits, to train one's attentional flexibility, and to become aware of intrusive thoughts (Curtis & Braga, 2018; Montull et al., 2020). The slacklining equipment was made available to all referees on a voluntary basis during the main tournaments over the course of the season.

Mental Imagery

The fourth stage concerned mental imagery, particularly in the anticipation of sporting scenarios. In addition to improving their ability to attend to physical elements in the present moment, referees can also develop skills of intentional visualization that will also help prepare them for competition. They can focus mindfully on mental objects, such as visualizing a sequence of gestures or potential series of events, without their physical presence. Practicing mental imagery in this way allows one to represent the object or event in all of its sensory aspects, that is, as objects to be seen (vision), perceived tactilely (sense of touch, proprioception, and interoception), smelled (olfaction), tasted (taste), and heard (audition). In addition, mental imagery, when practiced in such a stimulating way, such as in the mental imagery of best performance exercise, can also elicit the experience of the emotions that arrive as a consequence of these sensory inputs by creating an inner positive prompt that fosters the implementation of the imagined action. Additional mental imagery exercises, such as refocusing plans and pre- and in-competition routines (Orlick, 1986), were introduced as tools to make use of this resource. In particular, by working on refocusing plans, participants were trained to respond positively to preplanned distractors, whether they originated from external events (e.g., delay in program, comment by player, etc.) or from internal experiences (e.g., emotions, expectations, etc.).

Motivation

The last stage of the intervention was motivation, which regulates the functioning of the individual in their environment (Nuttin, 1985). In this stage of the training, individuals are brought to identify their innermost goals, visions, and expectations; explore their influence on their thoughts and behaviors; and learn to use them appropriately while recognizing when they are excessively affecting their emotional reactions. Composed of one's expectations and values, motivations' influence on one's behavior can sometimes become overwhelming, creating a stressful sensation of being under pressure. This occurs when one's conceptualized expectations of a future reality do not align with what is physically possible or even practically feasible, or when performance is sought with obsessive passion (Philippe & Vallerand, 2008), resulting in a loss of flow and, often, an unsuccessful performance for referees and athletes alike (Philippe et al., 2009).

Performance profiling exercises (Butler & Hardy, 1992), alongside meditative and yogic practices, were delivered to introduce the concept that the same motivation that drives the referees to perform at a high level can also be one of their greatest sources of a self-induced stress. Along with the letting go meditation, these mental skills tools were intended to release the referees from their self-created stress by "letting go" of their conceptually conceived expectations about their performance, particularly when they were logistically unreasonable or outside of their influence.

Intervention Procedure

The intervention took place from March to June 2016 for BVB referees and from May to July 2016 for VB referees. The intervention was conducted in two phases: a pre-Olympic phase and an Olympic phase. The pre-Olympic phase was delivered over a period of 3 to 4 months prior to the Olympic Games. It consisted of several training sessions, lasting from 1 hr to 2.5 hr, wherein the five stages of the intervention (emotional intelligence, stress management, concentration, mental imagery, and motivation) were delivered for the first time. All of the referees were obliged by the FIVB to follow these trainings. Not all of the referees followed the units simultaneously, however, as the training sessions took place over the course of the season during tournaments, and not all of the referee participants attended each tournament. By the end of the pre-Olympic phase, all referee participants had participated in all five of the stages. All of the sessions were delivered face to face by the clinician to groups composed of between seven and 30 referee participants. The sessions were delivered in English, which was a nonnative language for all but four of the participants. Session delivery took place around the world: for BVB referees, sessions took place in Rio de Janeiro (Brazil), Fortaleza (Brazil), and Hamburg (Germany), and sessions for VB referees were held in Tokyo (Japan), Bangkok (Thailand), Lodz (Poland), and Krakow (Poland). The pre-evaluation was conducted as the first element of the first face-to-face training session.

The Olympic phase took place in Rio de Janeiro (Brazil) just prior to and during the 2016 Olympic Games, which were held August 5–21. Referees participating in this phase did so on a voluntary basis. The referee participants had the opportunity for daily 1-hr meetings with the clinician over the course of 15 days. During these meetings, the five stages from the pre-Olympic phase were reviewed for the second time, refreshed, and rehearsed. Referees were given brief conceptual reminders as well as the opportunities to practice their mindfulness exercises. The post-evaluation took place at the end of the Olympic competition directly on-site in Rio de Janeiro.

Participant Population

A total of 36 international VB and BVB referees had the opportunity to participate in the first, pre-Olympic phase of the intervention. They were selected intentionally by the FIVB refereeing commission for participation in the intervention. Among them, 20 were referees for VB (16 men and four women) and 16 for BVB (13 men and three women). From this group, a select group was chosen by the FIVB to officiate the Olympic Games. All of them voluntarily participated in at least one session during the second phase of the intervention. After Olympic selections, and the pre- and postintervention questionnaires, 24 referees (11 men and two women for VB; nine men and two women for BVB) had submitted a complete profile of responses suitable for comparative analysis.

Measurement Instruments

Three measurement instruments were used to evaluate the state of the mental skills involved in correct, quick, and context-adapted decision making, which defines optimal refereeing performance. The Concentration Skills Self-Help Test (Weinberg & Richardson, 1990) was used to measure attentional skills, the Competitive State

Anxiety Inventory-2 (CSAI-2; Martens et al., 1990) was used to measure emotional stress, and the Five-Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) was used to measure pre- and postintervention awareness. In addition, a quantitative questionnaire on the frequency and usefulness of the tools used and a qualitative questionnaire on the intervention developed by the first author were used for the final postintervention evaluation.

Concentration Skills Self-Help Test

The Concentration Skills Self-Help Test was developed by Weinberg and Richardson (1990) specifically for a population of sport officials. It consists of 15 items, such as, "If I miss a call, I find it hard to stop thinking about it" and "When I'm officiating, I'm good at quickly analyzing what's happening in the game." The items are rated on a Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). Once the items have been evaluated, the scores of the "negative" expression items are reversed and added to the scores of the "positive" expression items. This number is considered the individual's concentration capacity score.

Competitive State Anxiety Inventory-2

To evaluate an individual's emotional readiness to make decisions in a short time frame, the CSAI-2 (Martens et al., 1990), a 27-item questionnaire, assesses three anxiety-related factors: cognitive anxiety (nine items, e.g., "I am concerned that I may not do as well in this tournament as I could"), somatic anxiety (nine items, e.g., "My body feels tense"), and low confidence (nine items: e.g., "I am confident that I can meet the challenge"; items' scores are reversed for this category). The highest general score is 108 (very high anxiety and low self-confidence) and the lowest general score 27 (very low anxiety and high self-confidence).

Five-Facet Mindfulness Questionnaire

The FFMQ was developed by Baer et al. (2006) to measure individual mindfulness. In this context, it illustrated the degree of general awareness of the referees. This questionnaire is composed of 39 items evaluated on a Likert scale ranging from 1 (*never or very rarely true*) to 5 (*always or very often true*). The FFMQ evaluates five dimensions of mindfulness, each with its own score. The first dimension is *observing*, composed of eight items, such as, "When I take a shower or a bath, I remain attentive to the sensation of water on my body." The second dimension, *describing*, is composed of eight items: as an example, "I can easily find words to describe my feelings." The third dimension, *acting mindfully*, is composed of eight items, such as, "When I do something, my mind wanders and I am easily distracted." The fourth dimension is *nonjudgment*, composed of eight items, such as, "I criticize myself for having irrational or inappropriate emotions." The final dimension is *nonreaction*, composed of seven items, such as, "I perceive my feelings and emotions without reacting to them."

Mental Skills Tools Evaluation Questionnaire

To verify whether the mental skills tools introduced in the intervention were adapted to this population, the participants evaluated each of the tools quantitatively. The evaluations were based on the frequency with which they used a certain technique as well as their assessment of its usefulness. Each tool was evaluated on two Likert scales (frequency and usefulness) ranging from 1 (*never or not useful at all, respectfully*) to 5 (*systematically or very useful, respectfully*). The participants were also asked to evaluate, in two separate items, their perception of the overall support they received throughout the intervention from (a) the clinician and (b) the referee manager and the referee delegates. For each item, the participants evaluated both how frequently they received support from the individual or individuals concerned and what level of personal satisfaction they felt with that support.

Qualitative Questionnaire

The qualitative questionnaire was developed by the first author and consisted of two primary open-ended prompts. The first prompt was, "Please relate on this page the events, match situations, and personal attitudes during which you noticed that you were able to use and benefit from the tips or strategies you developed during the mental preparation program, or a general change in your emotional/mental response to stressful situations." The purpose of this prompt was to understand the participants' perception of the impact of the intervention in a more detailed manner than that of numerical questionnaires. The second prompt was, "Please indicate in a few words what should be improved in a mental preparation program for referees," and was followed by two situational conditions: "In the preparation phase during the season" and "During a major tournament." This prompt intended to utilize the expert opinions of the referees to see how existing training, this intervention included, could be improved in a practical way.

Referee Delegates Evaluation

Within FIVB's usual refereeing procedures, referee delegates regularly evaluate the performance of referees during competitions. Referee delegates are former expert referees who, through certification of the international federation, are deemed responsible to supervise the appointed international referees, to select them for competitions, and to provide them with inputs on the application of rules and feedback about their performances. Certain measures from these evaluations were considered for this program in a comparison of referees' performances in competition prior to and during the Olympic Games. The decision making of 10 of the VB referees was evaluated using a scale from 1 (*not adequate performance for this match level*) to 6 (*outstanding performance*). Sixteen BVB referees' overall performances were evaluated using a final mark scale from 0 (*very poor performance*) to 100 (*outstanding performance*). This evaluation scale also included a modifying coefficient according to the delegates' perception of the difficulty of the match. In this case, the pre-Olympics competitions were evaluated as "medium" difficulty, receiving a multiplying coefficient of 1.000. The Olympic Games were classified as "difficult" with a multiplying coefficient of 1.025.

Analysis of Results

Paired sample *t* tests were performed on the data from the CSAI-2, the FFMQ, and the Concentration Skills Self-Help Test to see whether there were significant differences between the pre- and postintervention scores. The means of the frequency of use and usefulness of the mental skills tools were calculated as well as their *SD*s. Spearman correlations were then calculated between the reported frequency of use of the tools and their perceived utility to confirm whether more useful tools were practiced more often.

Of the 24 participants who completed the postintervention questionnaires, 19 provided an answer to at least one open-response

question. The open-response data were collected via handwritten paper surveys. Responses were submitted mostly in English, with one response in French, which was later translated to English by the second author, who then reviewed all the responses for conceptual themes and coded them accordingly. As the nature of the survey was about the frequency of use and usefulness of the mental skills tools delivered throughout the intervention, the responses were coded along the references to the timing and frequency of tool use, which tool was used, and the perceived changes to performance. Quotations from the open-ended responses included in the "Results" section have had minor grammatical corrections made to them to make them more easily understood (given that they were mostly written by nonnative English speakers) without changing their meaning. The quotations referenced were assigned to pseudonyms to preserve the remaining anonymity of the participants while illustrating the range of responses.

Results

Competitive State Anxiety Inventory-2

The average general competitive anxiety score was 45.44 (out of a maximal score of 108) in March 2016 (preintervention CSAI-2) and was only slightly higher, 46.55, during the Olympic Games (August 2016, postintervention CSAI-2). This difference is not statistically significant. When considering the CSAI-2 subscales, the differences in pre- and postintervention results were not significant either.

Five-Facet Mindfulness Questionnaire

As shown in Table 2, subjects had, on average, a higher observing score after the intervention (M T2 = 29.1, SD T2 = 5.04) than before (M T1 =26.5, SD T1 = 4.46), and this difference was significant, $t(23) = -2.75$, $p < .05$. However, there was no significant difference in the describing score nor in the acting mindfully or nonjudgment scores. The greatest change was seen in the nonreaction scores, which were significantly higher after the intervention (M T2 = 31.8, SD T2 = 3.48) than before (M T1 = 25.3, SD T1 = 2.82), $t(23) = -7.89$, $p < .001$.

Concentration

Subjects' concentration capacity scores, shown in Table 3, significantly increased between the assessment prior to the intervention (M T1 = 61.9, SD T1 = 5.50) and the one after it (M T2 = 65.1, SD T2 = 5.66), $t(23) = -3.11$, $p < .05$.

Table 2 Pre- and Postintervention FFMQ Results

Subcategory	*M* T1	*SD* T1	*M* T2	*SD* T2	*t* score	*p*
Observing	26.5	4.46	29.1	5.04	−2.75	.01**
Describing	27.9	4.81	27.5	4.85	.32	.75
Acting mindfully	28.8	3.58	30.7	4.54	−1.98	.60
Nonjudgment	30.0	3.22	30.8	3.24	−1.08	.29
Nonreaction	25.3	2.82	31.8	3.48	−7.89	<.001***

Note. M T1 = mean score preintervention; SD T1 = standard deviation preintervention; M T2 = mean score postintervention; SD T2 = standard deviation postintervention; FFMQ = Five-Facet Mindfulness Questionnaire.
**Significant at .05. ***Significant at < .001.

Table 3 Pre- and Postintervention Concentration Skills Self-Help Test Results

Category	*M* T1	*SD* T1	*M* T2	*SD* T2	*t* score	*p*
Concentration	61.9	5.50	65.1	5.66	−3.11	.01**

Note. M T1 = mean score preintervention; SD T1 = standard deviation preintervention; M T2 = mean score postintervention; SD T2 = standard deviation postintervention.
**Significant at .01.

Mental Skills Tools Evaluation Questionnaire

The mental skills tools of mindful breathing, mental imagery of the best performance, the refocusing plan, the STOP technique, attentional style, and pre- and in-competition routines were the six tools that received average ratings of 4.00 or above for either their frequency of use or usefulness, with the first three rated over 4.00 in both categories. Mountain meditation, the slackline, and the "maybe" technique were the lowest rated among the 18 tools, receiving average scores below 3.00 for their frequency of use. Table 4 also highlights the highly significant correlation between the perceived usefulness of the different techniques and the self-reported frequency with which they were implemented.

Qualitative Questionnaire Results

Timing

The majority of the respondents, 13 out of 19, reported practicing the different strategies they learned during the matches they officiated. Seven specifically highlighted the effectiveness of these practices in stressful situations during a match.

> Rafael: These techniques are very useful during the game, especially in critical moments.

Six reported incorporating these techniques into their prematch preparation, and two noted using them as a postmatch strategy.

> Leo: After a lot of matches, the body scan helps for relaxation.
>
> Nikolas: I applied it in the Olympic Games before, during, and after each match, changing my emotional and mental attitudes.

As it was noted that referees often move directly from one match to the next with little time in between, three specifically noted the benefit of these tools in intermatch situations. A particular example was noted in this case where an in-match conflict between two teams was carried over from the day before, and the strategies were used to avoid further conflict.

> Peter: This match was very stressful for the referees because there was almost a big fight close to the net between the players. After this match, I received nomination for the next match with one of the two teams . . . . Because the problem of the previous day, I had to concentrate using the skills that I developed, and I was really very comfortable, very confident. In the end, it was very good match. Players and coaches were very satisfied with the final results. This was a primary goal for me in the Olympic Games.

Table 4 Mental Skills Tools Evaluation Questionnaire Results

	Frequency		Usefulness		Correlation	
Category/subcategory	***M***	***SD***	***M***	***SD***	***r***	***p***
Emotional intelligence						
Mindful breathing	4.13	0.85	4.42	0.65	.62	.001***
Body scan	3.17	1.09	3.50	1.22	.62	.001***
Self-observation	3.63	1.06	3.67	0.96	.76	<.001***
Mountain meditation	2.46	1.10	3.09	0.97	.61	.003**
Stress management strategies						
STOP technique	3.67	0.92	4.13	0.85	.66	<.001***
Mindful yoga	3.00	0.89	3.33	0.76	.57	.004**
"Maybe" technique	2.88	1.03	3.05	0.79	.64	.001***
Sitting meditation	3.00	1.09	3.33	1.20	.62	.003**
Concentration						
Mindful eating	3.17	0.82	3.52	0.90	.58	.004**
Attentional style	3.88	0.99	4.00	0.80	.76	<.001***
Story of the strawberry	3.08	0.93	3.68	1.04	.84	<.001***
Slackline	2.79	1.32	3.17	1.56	.90	<.001***
Mental imagery						
Visualization	3.54	0.93	3.63	0.97	.78	<.001***
Mental imagery of best performance	4.17	0.92	4.08	0.93	.64	<.001***
Refocusing plan	4.25	0.79	4.13	0.85	.62	.001***
Pre- and in-competition routines	4.09	1.00	3.83	1.19	.80	<.001***
Motivation						
Performance profile	3.86	0.89	3.81	0.98	.92	<.001***
Letting go meditation	3.42	1.10	3.68	0.89	.67	<.001***
General perception of support						
From the clinician	3.74	1.29	3.78	1.31	.85	<.001***
From the referee manager and referee delegates	3.36	1.05	3.55	1.26	.87	<.001***

Note. r = Spearman rho.
**Significant at .01. ***Significant at ≤ .001.

Two participants made specific notes to their use of these tools outside of refereeing in their daily lives.

> Sharida: This program helped me learn how to manage my mental stability in preparation for every situation in refereeing or otherwise.

Mental Skills Tools Used

The most commonly referenced tool was the mindful breathing technique (five participants), followed by the refocusing plan (four participants).

> Rafael: Breathing? I thought before that I was missing something during the critical moments. I found what I needed in this course, and finally confirmed it in Japan. (. . .) In the open discussions, I found the basics of how to get what I need. Simply breathing in, a practice that is invisible to the other referees. Generally, I found a way to practice this and not be seen. (. . .) I also found a connection with the breathing and the STOP technique. (. . . .) For sure, the referee uniform, whistle, rules, breathing technique . . . . I need them all!

> Mikael: For me it was very useful to introduce some new techniques for emotional intelligence. Yesterday, during the match, I intentionally breathed mindfully several times. I felt it helped me in handling emotions.

> Vikram: I had to use the strategy to refocus in the semi-final match when there was a problem with a challenge and it interfered directly with the match.

Multiple participants referenced the use of the STOP technique, body scan, yoga, mountain meditation, mental imagery, and the precompetition routine.

> Hector: I had a huge amount of pressure going into this match. But before the match, I closed my eyes and imagined the match like a mountain. I must climb the mountain. Maybe the way up is difficult. But at the top, I will have the best view. I opened my eyes and saw my partner, and suddenly I had strong confidence.

Individuals also cited specific use of the slackline, self-observation, and stretching. Other techniques were referenced by general names not specifically aligned to any one particular practical tool,

such as a focus on or adjustment of goals, relaxation techniques, positive thoughts, concentration techniques, and emotional intelligence.

Perceived Changes

Most commonly (six participants), respondents referenced feeling a higher sense of confidence and comfort as a result of these techniques. Better preparation and more self-control under stress were each cited three times. Multiple referees felt the benefits of more relaxation, less stress and anxiety through the ability to "let it go," and the enjoyment of every moment.

> Bella: After having a difficult match, I was able to refocus for another match and deal with the stress caused by the situation and the referee delegate. I use the performance imagery to give myself confidence, breathing technique before and during the match to deal with the stress. I also use breathing techniques when I felt I was losing the focus "here and now." I adjusted my goals for Olympics Games to be able to enjoy every moment of it.

> Ursula: I have been applying similar techniques in my matches or competitions for years but this specific preparation has helped me to control my anxiety in a better way before the games.

Individuals also noted specifics, like greater mental stability, greater concentration, and the ability to reduce the collective tension in a match through intentional body language. One referee noted a specific example of an elevated sense of credibility with the players and coaches, and another felt that the tools had significantly improved her career as a referee.

> Javier: During the last two league competitions and the Olympic Games, I felt more comfortable to approach to the match in the adequate way. In Poland, I increased the level of my performance. My self-confidence was really high and during the whole tournament my answer to stressful situations was good. In Rio, I came well-prepared. In my first match, I managed two different situation thanks to my mental preparation. I was able to reduce the tension of the match with my body language and with my balance . . . . In my third match, I enjoyed it from the beginning to end, and I'm sure we gave the same perception to players, coaches, and officials . . . . It was a special case in that there were no challenges requested from the teams during a 2-hour-10-minute-long match with a 2-3 final result. Very tough match. Our level of credibility was really high.

Notably, referees perceived the effect of mindfulness techniques in an increased capacity to establish an emotional distance in relation to stressful situations, be they critical incidents, doubts, or mistakes.

> William: I have found that I am more relaxed when taking the stand. I am able to recognize the onset of tension and stress, accept it as a part of myself, and then allow it to leave my body and mind. No fighting, a lot more acceptance.

Referee Delegate Evaluation

The average decision-making score of the 10 VB referees in the competition prior to the Olympic Games was 4.03. During the Games, their average score increased 21.34% to 4.89. The 16 BVB referees evaluated received an average score on their overall performance of 95.72 out of 100 in pre-Olympics competition. Raw Olympic Games scores for the same referees were slightly diminished, 94.94, but with the multiplying coefficient of the "difficult" conditions, the reported average score increased to 97.31, a slight improvement of 1.66% from the first evaluation.

Discussion

Both the quantitative and qualitative data collected alongside this intervention suggested that it had a significant, positive impact on the practice and experience of FIVB VB and BVB referees at the 2016 Olympic Games. The participants reported the specific implementation of 14 out of 18 of the intervention's mental skills tools in their lives outside of the intervention. Qualitative feedback suggests that the use of the intervention's mental skills tools was most common during matches, particularly during critical moments of high stress. Prematch preparation was also greatly affected not only explicitly in the changes to their precompetition routines but also implicitly through the long-term changes to the referees' general experience of their practice developed over the course of the intervention.

The principal objective of the intervention was to develop (a) the attentional skills for sustained, accurate assessments of match events; (b) the emotional readiness to make critical decisions in a short time frame; and (c) the mindful awareness for delivering the prior two elements in the larger context of the individual human being and their environment. The Concentration Skills Self-Help Test scores significantly increased from pre- to postintervention testing. The notion that this intervention contributed to an increase in concentration skills is not surprising, considering the literature on MBIs and the relationship between both trait and state mindfulness and flow (Chen & Meggs, 2021; Gardner & Moore, 2012; Kaufman et al., 2009; Thompson et al., 2011). As described in the work from Csikszentmihalyi (1990) and Kaufman et al. (2009), flow in sporting performance is primarily characterized by a heightened focusing ability, which the referees also experienced in their own performances. Moreover, several pedagogical techniques used in the intervention, from psychoeducational (e.g., explanation of Nideffer's, 1976, attentional style model) to meditative (mindful breathing and mindful eating) and practical (slackline training at workshops and competitions), were specifically geared toward learning how to direct attention to a chosen object or event. Moreover, several of the highest rated mental skills tools, like the refocusing plan, mental imagery of the best performance, and mindful breathing, were all instrumental to improve concentration skills.

The changes in the CSAI-2 scores did not yield quantitatively significant results for this study, which might lead to the conclusion that the intervention did not affect the participants' emotional readiness for competition. We believe that the qualitative data do, however, clearly illustrate that the intervention did have a positive effect on at least certain participants' experiences. References to more relaxation, more confidence, and better emotional control are all indicative of improvements in referees' emotional preparedness. In addition, the CSAI-2 scores were already relatively low in the preintervention evaluation and were only slightly higher in the second evaluation during the Olympic Games. Considering the pressure and exposure presented by the Games, the stability of the general anxiety scores should be considered as a very positive result.

Whereas the CSAI-2 results can be interpreted to show a lower level of intensity of anxiety around competition postintervention, results from the FFMQ suggest that referees also increased their capacity to adequately respond to anxiety rather than automatically reacting to and being overwhelmed by it. This is illustrated by the participants' two highest average scoring mindfulness subcategories, observing and nonreaction. These were the two subcategories that saw statistically significant increases, the latter so much so that it became the participants' highest average scoring category. This kind of result is in line with much of the mindfulness-related research, which illustrates that the key factor influenced by MBIs is not the degree of the intensity of emotions but, rather, the relationship that the participants develop with those emotions. The qualitative data allow us to better understand the reasons why these skills in particular, observing and nonreaction, may be instrumental to the referees' decision-making process. Thanks to their training with mental skills tools like mindful breathing and the STOP technique, which were two of the most frequently used tools, referees were able to strengthen their capacity to refocus nonjudgmentally on their sensations, even when experiencing difficulties. It can be reasonably assumed that a referee's emotional state as it relates to the anxiety around competition is not fixed throughout the course of a match but, rather, fluctuates given the unfolding events of the match. The capacity to create a critical separation between strings of thoughts and emotions prevents an automatic stress reaction to a particular emotional stimulus, thereby avoiding an emotional snowball effect, which is one of the most important effects of mindfulness training (Gardner & Moore, 2004; Kabat-Zinn, 2013).

The results from the FFMQ also, perhaps more directly, indicate the effect of the intervention on the participants' mindful awareness. Broadening awareness is certainly served by the increased aptitude for the subcategory observing, the capacity to maintain a neutral focus on sensations in a stressful situation. As with the positive relationship between nonreactivity and emotional readiness, observing serves the objective of concentration as it is directly linked to maintaining focus in spite of the distractions of stressors. Serving as the basis for the previous two psychological skills, mindful awareness also manifested in the participants' experience of the multitudes of simultaneously occurring narrow and large internal and external factors at the same time. This was perhaps most convincingly (or at least amusingly) illustrated in a post-Olympic Games interview with the chief referee of the Olympic BVB final, which started with a challenge to the officials' ruling from the players on the first exchange of the match:

> I saw the funny side of the situation: to start a match with a challenge. It's really quite exceptional. I accepted it and I stayed calm. I experienced the situation with an external perspective rather than an internal one. We react less. We react differently. And I believe that we react better. (Méditation pleine conscience: Plus qu'une mode?, 2016)

The referee's simultaneous ability to pay attention to a player's fingertip, to recognize his immediate emotional reaction to a challenge of his evaluation, and to acknowledge his internal anxiety level in response to the pressure of officiating an Olympic final while recognizing the humorous aspect of the situation is a clear example of a heightened state of mindful awareness.

Ultimately, the internal experiences of the referees only go so far to validate the efficacy of the MBI on their performance. Though the referee delegates are also not necessarily completely unbiased, they were further removed from the MBI and its impacts than the acting referees. The delegates' evaluations, thus, serve as the closest thing in this study to an "objective," external validation. The positive change in evaluation scores during the Olympic Games, although slight among the BVB referees, was pronounced among the VB referees. This is particularly notable given that the VB referees' scores were not adjusted to account for the pressure and setting of the Olympic Games. Lending to the credibility of these results, posttraining accuracy improvements among other referee populations have shown similar levels of improvement (Mascarenhas et al., 2005 p. 374).

Limits

This intervention was conducted as a professional engagement with FIVB as a part of its referee development program. As such, the intervention was not performed in a laboratory setting with a randomized selection of participants to be assigned to a group participating in the intervention or to a nonparticipating control group. In addition, the high dropout/incompletion rate (33%, 12 of 36 eligible participants) left a relatively small sample size of a potentially skewed population. Dropout and incompletion were largely influenced by language barriers and time commitments, which should both be taken into serious consideration for future efforts on such an international scale. With such high dropout, there are a number of unaccounted variables, which this case study is unable to appropriately address in its conclusions. These variables may have had a significant effect on the interpreted impact of the intervention.

The data collection period was also limited to the period between the beginning of the intervention and the final participant reporting after the 2016 Olympic Games. The effects of this intervention were not measured outside of this roughly 6-month period. We are, therefore, unable to comment on the long-term effects of this intervention on the participants and their refereeing practice. Although it is possible that the participants continued to develop their use of the intervention's mental skills tools and, therefore, continued to build their mindfulness capacities, it is also possible that the intervention period could have been too short to fully habituate regular use of the tools, and the participants would have, thus, likely reverted to their preintervention mindfulness levels.

The limited window of data collection also restricted any comparison with how the delegates' evaluation of referees' performances changed prior to and during previous Olympic Games. Although the observed changes in this study indicate that the MBI had an "objectively" positive impact on referees' performances, we cannot say how these performances have changed during prior Olympics. Following other research on the impact of MBIs on sporting performance (Moore & Gardner, 2014), we believe it is safe to assume that the positive changes observed here are, at the least, not a regression from an even bigger positive change in prior years.

Lastly, it is important to note the specific sociocultural context in which this MBI took place. This intervention was requested, designed, and delivered primarily with a Western European perspective. Noting the work from Roychowdhury et al. (2021) on the Western appropriation of mindfulness practices from their original roots, we acknowledge that this intervention was designed and utilized in a way that was specifically intended to operationalize mindfulness for a "practical" improvement in performance outcome. This does not necessarily reflect the intended design of

original mindfulness practices, which were more closely associated with transcendental experiences beyond an individual's daily performance activities. The implementation of an MBI such as this may, in that way, actually be antithetical to the principles of those original practices.

Recommendations for Future Research

The results of this case study indicate a practical benefit for high-level referees through participating in MBIs such as the one delivered in this example. Though the study was limited practically from meeting theoretically ideal academic standards of randomization and control, its initial results encourage further investigation into the impact of these interventions with other referee populations at various levels of competitiveness in sport and different fields of play. These results align with more developed research on the effects of MBIs in other domains. Thus, this is, at least, a first step to indicate that MBIs' established positive influences elsewhere may extend into sports refereeing as well.

Future interventions may look at specifically addressing the FFMQ subcategories that did not significantly increase, acting mindfully, nonjudgment, and, particularly, describing, as it was the only one of the five categories to see a decrease in average score from pre- to posttest. Practitioners may want to develop new mental skills tools to address these categories, paying attention to both the qualitative and quantitative feedback from the participants in this study. For example, mindful breathing, the STOP technique, refocusing plans, mental imagery of the best performance, and pre- and in-competition routines were all referenced multiple times in the qualitative, open feedback. They were also the only tools to receive an average frequency of use and/or usefulness score of 4.00 or higher. Thus, it would seem that these are integral tools for any future interventions such as this. The tools with the lowest average usefulness scores, like the "Maybe" technique (the lowest rated tool), which was also unmentioned in the open feedback, might be eliminated. However, questions remain about the inclusion of some tools, like the mountain meditation, which received the second lowest average usefulness score but was referenced multiple times in the open feedback.

Conclusion

This case study followed the implementation of an MBI delivered to referees from the FIVB. After several months of work leading up to the 2016 Olympic Games, referees from VB and BVB were introduced to a mindful approach to their performance as referees and were given a variety of practical mental skills tools to implement during their practice. These tools, and the intervention as a whole, were intended to help the referees better manage high stress and deliver a higher quality performance, recognizing that they, as human beings, are undergoing the same kinds of emotional experiences as athletes.

With data collected through quantitative and qualitative questionnaires prior to the intervention and after the Olympic Games, this study produced results in keeping with the larger field of research on MBIs. Referees reported a significant increase in their observing and nonreactivity mindfulness subcategories as well as their concentration. They reported on-the-ground use of the majority of the mental skills tools introduced, including several at the Olympic Games. Participants widely reported feeling more confident and comfortable "on the stand" and were better able to manage the most stressful moments of a match. Many felt, as a result, that they had higher credibility as referees and were able to contribute to a better overall experience for all parties involved in the match.

Acknowledgment

We would like to extend our many thanks to Deborah Rochat for her support in the statistical analyses featured in this case study.

References

Aherne, C., Moran, A.P., & Lonsdale, C. (2011). The effect of mindfulness training on athletes' flow: An initial investigation. *The Sport Psychologist, 25*(2), 177–189. https://doi.org/10.1123/tsp.25.2.177

Alonso-Arbiol, I., Falcó, F., López, M., Ordaz, B., & Ramírez, A. (2005). Development of a questionnaire for the assessment of sources of stress in Spanish soccer referees. *Ansiedad y Estrés, 11*(2/3), 175–188.

Anshel, M.H., & Weinberg, R.S. (1995). Sources of acute stress in American and Australian basketball referees. *Journal of Applied Sport Psychology, 7*(1), 11–22. https://doi.org/10.1080/10413209508406297

Anshel, M.H., & Weinberg, R.S. (1999). Re-examining coping among basketball referees following stressful events: Implications for coping interventions. *Journal of Sport Behavior, 22*(2), 141.

Arslanoğlu, C., Doğan, E., & Acar, K. (2018). Investigation of decision making and thinking styles of volleyball referees in terms of some variables. *Journal of Education and Training Studies, 6*(10), 21. https://doi.org/10.11114/jets.v6i10.3431

Atkinson, R.C., & Shiffrin, R.M. (1968). Human memory: A proposed system and its control processes. In K.W. Spence & J.T. Spence (Eds.), *Psychology of learning and motivation* (Vol. 2, pp. 89–195). Academic Press. https://doi.org/10.1016/S0079-7421(08)60422-3

Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27–45. https://doi.org/10.1177/1073191105283504

Balmer, N., Nevill, A., Lane, A., Ward, P., Williams, A.M., & Fairclough, S. (2007). Influence of crowd noise on soccer refereeing consistency in soccer. *Journal of Sport Behavior, 30*(2), 130–145.

Beck, A.T. (1979). *Cognitive therapy and the emotional disorders*. Penguin.

Berghmans, C., Tarquinio, C., & Kretsch, M. (2010). Impact de l'approche thérapeutique de pleine conscience mindfulness-based stress reduction (MBSR) sur la santé psychique (stress, anxiété, dépression) chez des étudiants: Une étude pilote contrôlée et randomisée. *Journal de Thérapie Comportementale et Cognitive, 20*(1), 11–15. https://doi.org/10.1016/j.jtcc.2010.03.001

Bernier, M., Thienot, E., Codron, R., & Fournier, J.F. (2009). Mindfulness and acceptance approaches in sport performance. *Journal of Clinical Sport Psychology, 3*(4), 320–333. https://doi.org/10.1123/jcsp.3.4.320

Boyko, R.H., Boyko, A.R., & Boyko, M.G. (2007). Referee bias contributes to home advantage in English Premiership football. *Journal of Sports Sciences, 25*(11), 1185–1194. https://doi.org/10.1080/02640410601038576

Brasseur, S., Grégoire, J., Bourdu, R., & Mikolajczak, M. (2013). The profile of emotional competence (PEC): Development and validation of a self-reported measure that fits dimensions of emotional competence theory. *PLoS One, 8*(5), Article e62635. https://doi.org/10.1371/journal.pone.0062635

Briganti, P., Varriale, L., & Ferrara, M. (2018). Stress and sport: Organizational practices to support referees forcoping stress. *Giornale*

Italiano Di Educazione Alla Salute, Sport e Didattica Inclusiva, 2(3), Article 3. https://doi.org/10.32043/gsd.v0i3.86

Butler, R.J., & Hardy, L. (1992). The performance profile: Theory and application. *The Sport Psychologist, 6*(3), 253–264.

Ceridono, D., Formica, F., Cei, A., & Bergerone, C. (1986). *Psicologia per gli arbitri di pallavolo*. Prezzo Euro.

Chen, M.A., & Meggs, J. (2021). The effects of mindful sport performance enhancement (MSPE) training on mindfulness, and flow in national competitive swimmers. *Journal of Human Sport and Exercise, 16*(3), 517–527. https://doi.org/10.14198/jhse.2021.163.04

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.

Curtis, H., & Braga, L. (2018). Slacklining in physical education: A nontraditional approach to balancing children's body and mind. *Strategies, 31*(2), 54–56. https://doi.org/10.1080/08924562.2018.1418573

Dosseville, F., & Garncarzyk, C. (2007). L'arbitrage des pratiques sportives: Jugement et décision. *Bulletin de psychologie, 489*(3), 225–237.

Downward, P., & Jones, M. (2007). Effects of crowd size on referee decisions: Analysis of the FA Cup. *Journal of Sports Sciences, 25*(14), 1541–1545. https://doi.org/10.1080/02640410701275193

Folkesson, P., Nyberg, C., Archer, T., & Norlander, T. (2002). Soccer referees' experience of threat and aggression: Effects of age, experience, and life orientation on outcome of coping strategy. *Aggressive Behavior, 28*(4), 317–327. https://doi.org/10.1002/ab.90028

Gardner, F.L., & Moore, Z.E. (2004). A mindfulness-acceptance-commitment-based approach to athletic performance enhancement: Theoretical considerations. *Behavior Therapy, 35*(4), 707–723. https://doi.org/10.1016/S0005-7894(04)80016-9

Gardner, F.L., & Moore, Z.E. (2012). Mindfulness and acceptance models in sport psychology: A decade of basic and applied scientific advancements. *Canadian Psychology/Psychologie Canadienne, 53*(4), 309–318. https://doi.org/10.1037/a0030220

Goldsmith, P.A., & Williams, J.M. (1992). Perceived stressors for football and volleyball officials from three rating levels. *Journal of Sport Behavior, 15*(2), 106.

Goleman, D. (1995). *Emotional intelligence*. Bantam Books, Inc.

Gordon, S. (1990). A mental skills training program for the Western Australian state cricket team. *The Sport Psychologist, 4*(4), 386–399. https://doi.org/10.1123/tsp.4.4.386

Hanh, T.N. (1998). *The heart of the Buddha's teaching*. Broadway.

Hanin, Y.L. (2000). Successful and poor performance and emotions. In *Emotions in sport* (pp. 157–187). Human Kinetics.

Heidenreich, T., Michalak, J., & Eifert, G. (2007). Balancing change and mindful acceptance: The third wave of behavior therapy. *Psychotherapie, Psychosomatik, Medizinische Psychologie, 57*(12), 475–483; quiz 484–486. https://doi.org/10.1055/s-2007-986290

Helsen, W., & Bultynck, J.-B. (2004). Physical and perceptual-cognitive demands of top-class refereeing in association football. *Journal of Sports Sciences, 22*(2), 179–189. https://doi.org/10.1080/02640410310001641502

Helsen, W., Gilis, B., & Weston, M. (2006). Errors in judging "offside" in association football: Test of the optical error versus the perceptual flash-lag hypothesis. *Journal of Sports Sciences, 24*(5), 521–528. https://doi.org/10.1080/02640410500298065

Jekauc, D., & Kittler, C. (2015). Achtsamkeit im Leistungssport. *Leistungssport, 45*(6), 19–23.

Jones, G. (1993). The role of performance profiling in cognitive behavioral interventions in sport. *The Sport Psychologist, 7*(2), 160–172. https://doi.org/10.1123/tsp.7.2.160

Kabat-Zinn, J. (2005). *Coming to our senses: Healing ourselves and the world through mindfulness*. Hachette UK.

Kabat-Zinn, J. (2009). *Wherever you go, there you are: Mindfulness meditation in everyday life*. Hachette Books.

Kabat-Zinn, J. (2013). *Full catastrophe living, revised edition: How to cope with stress, pain and illness using mindfulness meditation*. Hachette UK.

Kabat-Zinn, J. (n.d.-a). *Guided mindfulness meditation: Series 1* (Vol. 1).

Kabat-Zinn, J. (n.d.-b). *Guided mindfulness meditation: Series 2* (Vol. 3).

Kaufman, K.A., Glass, C.R., & Arnkoff, D.B. (2009). Evaluation of mindful sport performance enhancement (MSPE): A new approach to promote flow in athletes. *Journal of Clinical Sport Psychology, 3*(4), 334–356. https://doi.org/10.1123/jcsp.3.4.334

Kaufman, K.A., Glass, C.R., & Pineau, T.R. (2019). Mindful sport performance enhancement (MSPE). In Ivtzan, Itai (Ed.), *Handbook of mindfulness-based programmes*. Routledge.

Kee, Y.H., & John Wang, C.K. (2008). Relationships between mindfulness, flow dispositions and mental skills adoption: A cluster analytic approach. *Psychology of Sport and Exercise, 9*(4), 393–411. https://doi.org/10.1016/j.psychsport.2007.07.001

Laborde, S., Dosseville, F., & Allen, M.S. (2016). Emotional intelligence in sport and exercise: A systematic review. *Scandinavian Journal of Medicine & Science in Sports, 26*(8), 862–874. https://doi.org/10.1111/sms.12510

Lane, A.M., Nevill, A.M., Ahmad, N.S., & Balmer, N. (2006). Soccer referee decision-making: 'Shall I Blow the Whistle?' *Journal of Sports Science & Medicine, 5*(2), 243–253.

Le Scanff, C. (2005). Les bases de l'entraînement mental. *Bulletin de psychologie, 475*(1), 101–105.

Martens, R., Burton, D., Vealey, R.S., Bump, L.A., & Smith, D.E. (1990). Development and validation of the competitive state anxiety inventory-2 (CSAI-2). In Martens, R .; Vealey, R.S.; Burton, D. (Eds.), *Competitive anxiety in sport* (pp. 117–190). Human Kinetics.

Mascarenhas, D., Collins, D., & Mortimer, P. (2005). Elite refereeing performance: Developing a model for sport science support. *The Sport Psychologist, 19*(4), 364–379. https://doi.org/10.1123/tsp.19.4.364

Mascarenhas, D., O'Hare, D., & Plessner, H. (2006). The psychological and performance demands of association football refereeing. *International Journal of Sport Psychology, 37*(2–3), 99–120.

Mathers, J.F., & Brodie, K. (2011). Elite refereeing in professional soccer: A case study of mental skills support. *Journal of Sport Psychology in Action, 2*(3), 171–182. https://doi.org/10.1080/21520704.2011.609018

Méditation pleine conscience: Plus qu'une mode? (2016, December 14). In *36,9°*. RTS. https://www.rts.ch/play/tv/369/video/meditation-pleine-conscience-plus-quune-mode?urn=urn:rts:video:8244184

Montull, L., Vázquez, P., Rocas Alonso, L., Hristovski, R., & Balagué, N. (2020). Flow as an embodied state. Informed awareness of slackline walking. *Frontiers in Psychology, 10,* Article 2993. https://doi.org/10.3389/fpsyg.2019.02993

Moore, Z.E. (2009). Theoretical and empirical developments of the mindfulness-acceptance-commitment (MAC) approach to performance enhancement. *Journal of Clinical Sport Psychology, 3*(4), 291–302. https://doi.org/10.1123/jcsp.3.4.291

Moore, Z.E., & Gardner, F.L. (2014). Mindfulness and performance. In *The wiley blackwell handbook of mindfulness* (pp. 986–1003). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118294895.ch51

Nevill, A.M., Balmer, N.J., & Mark Williams, A. (2002). The influence of crowd noise and experience upon refereeing decisions in football. *Psychology of Sport and Exercise, 3*(4), 261–272. https://doi.org/10.1016/S1469-0292(01)00033-4

Nideffer, R.M. (1976). Test of attentional and interpersonal style. *Journal of Personality and Social Psychology, 34*(3), Article 394. https://doi.org/10.1037/0022-3514.34.3.394

Nuttin, J. (1985). Le fonctionnement de la motivation humaine [Human motivation: How it works]. *Orientation Scolaire et Professionnelle, 14*(2), 91–103.

Orlick, T. (1986). *Psyching for sport: Mental training for athletes/Terry Orlick*. Leisure Press. https://library.olympics.com/Default/doc/SYRACUSE/48648/psyching-for-sport-mental-training-for-athletes-terry-orlick

Pettersson-Lidbom, P., & Priks, M. (2010). Behavior under social pressure: Empty Italian stadiums and referee bias. *Economics Letters, 108*(2), 212–214. https://doi.org/10.1016/j.econlet.2010.04.023

Philippe, F.L., & Vallerand, R.J. (2008). Actual environments do affect motivation and psychological adjustment: A test of self-determination theory in a natural setting. *Motivation and Emotion, 32*(2), 81–89. https://doi.org/10.1007/s11031-008-9087-z

Philippe, F.L., Vallerand, R.J., Andrianarisoa, J., & Brunel, P. (2009). Passion in referees: Examining their affective and cognitive experiences in sport situations. *Journal of Sport and Exercise Psychology, 31*(1), 77–96. https://doi.org/10.1123/jsep.31.1.77

Piffaretti, M. (2008). Psychology in the service of the arbitrators. *Psychoscope, 4,* 28–31.

Piffaretti, M. (2010). *Recruitment, retention and dropout factors for football referees*. UEFA.

Piffaretti, M., Castelletti, M., Carr, B., & Rochat, D. (2021). Developing team leaders' hearts and minds: Links between athlete mindfulness, emotional intelligence, and leadership. Paper presented at the Swiss Olympic Coaches Conference, Macolin, Switzerland.

Plessner, H., & Betsch, T. (2000). Sequential effects in important referee decisions: The case of penalties in soccer. *Journal of Sport and Exercise Psychology, 23*(3), 254–259. https://doi.org/10.1123/jsep.23.3.254

Rainey, D.W. (1994). Assaults on Umpires: A statewide survey. *Journal of Sport Behavior, 17*(3), 148.

Rogers, P.R., Miller, A., & Judge, W.Q. (1999). Using information-processing theory to understand planning/performance relationships in the context of strategy. *Strategic Management Journal, 20*(6), 567–577. https://doi.org/10.1002/(SICI)1097-0266(199906)20:6<567::AID-SMJ36>3.0.CO;2-K

Röthlin, P., Birrer, D., Horvath, S., & grosse Holtforth, M. (2016). Psychological skills training and a mindfulness-based intervention to enhance functional athletic performance: Design of a randomized controlled trial using ambulatory assessment. *BMC Psychology, 4*(1), 39. https://doi.org/10.1186/s40359-016-0147-y

Roychowdhury, D., Ronkainen, N., & Guinto, M.L. (2021). The transnational migration of mindfulness: A call for reflective pause in sport and exercise psychology. *Psychology of Sport and Exercise, 56,* Article 101958. https://doi.org/10.1016/j.psychsport.2021.101958

Salovey, P., & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*(3), 185–211. https://doi.org/10.2190/DUGG-P24E-52WK-6CDG

Schnyder, U., & Hossner, E.-J. (2016). Psychological issues in football officiating: An interview study with top-level referees. *Current Issues in Sport Science (CISS), 1,* Article 004. https://doi.org/10.15203/CISS_2016.004

Segal, Z., Dimidjian, S., Vanderkruik, R., & Levy, J. (2019). A maturing mindfulness-based cognitive therapy reflects on two critical issues. *Current Opinion in Psychology, 28,* 218–222. https://doi.org/10.1016/j.copsyc.2019.01.015

Shapiro, S.L., Brown, K.W., Thoresen, C., & Plante, T.G. (2011). The moderation of Mindfulness-based stress reduction effects by trait mindfulness: Results from a randomized controlled trial. *Journal of Clinical Psychology, 67*(3), 267–277. https://doi.org/10.1002/jclp.20761

Smith, R. (1996). Performance anxiety, cognitive interference, and concentration enhancement strategies in sports. In I.G. Sarason, G.R. Pierce, & B.R. Sarason (Eds.), *Cognitive interference: Theories, methods, and findings* (pp. 261–283). Routledge.

Sutter, M., & Kocher, M. G. (2004). Favoritism of agents – The case of referees' home bias. *Journal of Economic Psychology, 25*(4), 461–469. https://doi.org/10.1016/S0167-4870(03)00013-8

Taylor, A.H., Daniel, J.V., Leith, L., & Burke, R.J. (1990). Perceived stress, psychological burnout and paths to turnover intentions among sport officials. *Journal of Applied Sport Psychology, 2*(1), 84–97. https://doi.org/10.1080/10413209008406422

Thirumaran, M., Vijayaraman, M., Irfan, M., Khaja Moinuddin, S., & Shafaque, N. (2020). Influence of age and gender on mindfulness. *Indian Journal of Public Health Research & Development, 11*(3), 882–886.

Thompson, R.W., Kaufman, K.A., Petrillo, L.A.D., Glass, C.R., & Arnkoff, D.B. (2011). One year follow-up of mindful sport performance enhancement (MSPE) with archers, golfers, and runners. *Journal of Clinical Sport Psychology, 5*(2), 99–116. https://doi.org/10.1123/jcsp.5.2.99

Treadway, M.T., & Lazar, S.W. (2009). The neurobiology of mindfulness. In F. Didonna (Ed.), *Clinical handbook of mindfulness* (pp. 45–57). Springer. https://doi.org/10.1007/978-0-387-09593-6_4

VanYperen, N.W. (1998). Predicting stay/leave behavior among volleyball referees. *The Sport Psychologist, 12*(4), 427–439. https://doi.org/10.1123/tsp.12.4.427

Voight, M. (2009). Sources of stress and coping strategies of US soccer officials. *Stress and Health, 25*(1), 91–101. https://doi.org/10.1002/smi.1231

Wadey, R., & Hanton, S. (2008). Basic psychological skills usage and competitive anxiety responses. *Research Quarterly for Exercise and Sport, 79*(3), 363–373. https://doi.org/10.1080/02701367.2008.10599500

Weinberg, R.S., & Richardson, P.A. (1990). *Psychology of officiating* (p. viii, 184). Leisure Press.

Wolfson, S., & Neave, N. (2007). Coping under pressure: Cognitive strategies for maintaining confidence among soccer referees. *Journal of Sport Behavior, 30*(2), 232–247.

Ziegler, S.G. (1987). Negative thought stopping. A key to performance enhancement. *Journal of Physical Education, Recreation & Dance, 58*(4), 66–69.

Appendix: Elaboration of Refereeing Mindfulness-Based Intervention Mental Skills Tools

Emotional intelligence	
Mindful breathing	A 15-min-long mindfulness practice consisting of training one's attention to intentionally focus on the sensations of breathing while welcoming nonjudgmentally any other inner experience—sensations, emotions, images, and thoughts. During the exercise, participants are invited to acknowledge every lapse in intentional attention without reacting to it but, rather, recognizing the emotion and/or thought that caused the distraction and gently but firmly refocusing their attention on the next breath. Based on that practice, participants are asked to nonjudgmentally record the events of a pleasant or unpleasant experience, the emotions observed during the experience, and the thoughts and physical feelings perceived at the time. Then, in a process-oriented step, participants note the thoughts and feelings experienced at the time of recording in an attempt to reveal a personal interpretation of the recorded experience.
Body scan	In this exercise (Kabat-Zinn, n.d.-a), which usually lasts between 30 and 45 min, participants' attention is directed at various areas of the body, and they are asked to mentally note the bodily sensations that are happening in the present moment. While prolonging the experience of the skill mindful breathing, body scan meditation provides a tool to develop attentional direction, physical awareness, acceptance, and patience.
Self-observation	This tool is widely used in cognitive-behavioral approaches (Beck, 1979) with goal of developing participants' awareness of their own emotions and the automatic thoughts associated with them. It is an extension of the tool body scan in which participants are guided to deliberately attend to the physical sensations that rise and fall with passing emotions. After familiarizing themselves with the physical sensations related to emotional states, participants have a "tangible" sign of their current emotional state. This then reinforces their emotional awareness and sets the basis for a shift in their relationship with their cognitive contents, thus facilitating an adequate response to stressful events.
Mountain meditation	This mindfulness practice (Kabat-Zinn, n.d.-b) consists of adopting a dignified sitting posture and then progressively self-identifying with a self-created mental image of a beautiful mountain. This meditation is used by mindfulness practitioners (Kabat-Zinn, 2013) as a means of fostering emotional centering and self-connection in spite of the constant changes and stressors of one's environment. Through this skill, participants develop the capacity to observe rising emotional turbulences with increased self-distancing from them.
Stress management strategies	
STOP technique	S: Stop or interrupt the flow of thoughts and behavior and be aware of the emotion and the process it expresses. T: Take a moment to breathe mindfully. O: Observe the situation from multiple perspectives with no judgment. P: Proceed toward a new path forward in consideration of these multiple points of view, focusing on precise points of focus under the individual's direct control. This tool relies on intentional breathing when facing stressful events. Breathing is used to foster the participants' awareness and capacity to stay in the present moment despite uncomfortable emotions, ultimately facilitating the elaboration of an adapted response to the challenge. Attention is intentionally directed away from the unfolding progression of parasitic thoughts toward the visualization of alternative perspectives on the same events. The participants then integrate this new perception and experience mental flexibility in the search for an adapted mental or behavioral response.
Mindful yoga	The introduction of standing and lying yoga is based on the practices described by Kabat-Zinn (2013). These practices are meant to train mindfulness states through physical movement and some level of discomfort. This skill challenges the participants to maintain a mindful state through the controlled introduction of different distractions and stressors. This skill is one of the most important intermediary steps in transferring the participants' abilities of mindful awareness to a real-world situation wherein their attention is pushed, pulled, and stressed by multitudes of inputs.
"Maybe" technique	This is a pedagogical story used to introduce the skill of nonjudgment. After illustrating the practice through the story, the clinician encourages the participants to reflect on this cyclical nature of "good" and "bad" events in their own lives. The participants are encouraged to use this skill to interrupt the bias that otherwise leads to quickly made judgments in daily life to avoid the consequential train of thoughts and emotional states that follow. An old farmer had worked his crops for many years. One day his horse ran away. Upon hearing the news, his neighbors came to visit. "Such bad luck," they said sympathetically. "Maybe," the farmer replied. The next morning the horse returned, bringing with it three other wild horses. "How wonderful," the neighbors exclaimed. "Maybe," replied the old man. The following day, his son tried to ride one of the untamed horses, was thrown, and broke his leg. The neighbors again came to offer their sympathy for his misfortune. "Maybe," answered the farmer. The day after, military officials came to the village to draft young men into the army. Seeing that the son's leg was broken, they passed him by. The neighbors congratulated the farmer on how well things had turned out. "Maybe," said the farmer.
Sitting meditation	This expands on the skill mindful breathing in that the participants practice maintaining a similar meditative state, though here, it is practiced alone in a nonguided format. The practice trains participants' patience, composure, and attentional stamina at a deeper level. Participants are tasked with making this skill a routine part of their daily lives, intentionally setting aside time to practice intentionally attending.
Concentration	

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Mindful eating	This is an informal meditative practice consisting of consuming meals in silence by devoting attention to flavors, textures, and scents (Kabat-Zinn, 2013). The skill can be introduced with the "consumption" of a small, singular item (e.g., a raisin or a piece of chocolate) as it is simpler for the participants to shift their attention to different elements of their sensory experience with only one object of experience. As the participants build their ability to attend fully to their eating experience, they are encouraged to eat entire meals in this meditative manner, thus developing their mindful awareness to multiple, simultaneously occurring stimuli.
Attentional style	This skill is based in the pedagogical introduction of Nideffer's (1976) cognitive model of attention. This model consists of four types of attention, internal and external narrow attention, and internal and external broad attention. Recognizing that different styles of attention are necessary for different situations, and identifying what they are for the participants' specific situational needs, offers the participants the conceptual tools needed to appropriately attend to the multiple stimuli in their lives.
Story of the strawberry	This is a pedagogical story used to introduce the skill of singular attention. The story illustrates how even in a moment of extreme pressure, in the presence of serious threats, one can be fully mentally immersed in a singular experience. This story provides the participants a simple mental image to ground and enhance the skill of attentional shift. There once was a Buddhist monk who practiced his meditation by walking in the forest each morning. On one clear crisp morning, the monk heard a rustling in the leaves and looked up to see a large tiger watching him from a distance. Sensing that the tiger was about to attack, the monk started running as fast as he could, only to come to a clearing and a high cliff. Not seeing any other way to go, the monk grasped a large vine running partly down the side of the cliff and began to climb down it just as the tiger arrived. So there the monk was hanging, grasping the narrow end of a vine, with a snarling tiger above him and a long deadly fall beneath him. To make matters worse, a mouse appeared and began to gnaw on the vine, just above him but out of his reach. Just then, the monk noticed a wild strawberry plant growing from the side of the cliff with one plump red strawberry on it. He reached out, picked the berry, put it in his mouth and said to himself, "How delicious!"
Slackline	Slacklining is the physical exercise of walking across a narrow, taut strap attached roughly 30 cm above the ground. The physical challenge of maintaining stability while walking on an unfamiliar and unstable surface allows one to confront one's own attentional limits, to train one's attentional flexibility, and to become aware of intrusive thoughts (Curtis & Braga, 2018; Montull et al., 2020).
Mental imagery	
Visualization	This skill serves as the fundamental capacity building to permit the other three mental imagery skills to be useful to the participants. This skill introduces participants to the practices of visualizing sensory experiences. The practitioner guides the participants through various "scenes" wherein they can consciously cultivate the experience of a sensory input. As the participants' ability to envisage these experiences develops, they can progress to intentionally cultivating certain emotional states and their physical sensations, tying in to the skill self-observation.
Mental imagery of best performance	Experienced with the skill visualization, participants can begin to imagine and mentally experience more complex scenarios. With this skill, participants visualize all of the specific details that are occurring internally and externally during their imagined execution of their best performance. This rehearsal not only trains participants to identify what kind of state they need to deliver their optimal performance but also to become familiar with such a state so that, should it arrive midperformance, they are not distracted by it or suddenly become overwhelmed with parasitic thoughts related to the pressure of holding on to it.
Refocusing plan	Developed by Orlick (1986), this skill prepares participants to respond positively to anticipated distractors, whether they originate from external events (e.g., schedule delay, equipment breaking, etc.) or from internal experiences (e.g., emotions, expectations, etc.). Participants identify as many possible distractions as possible and then match the distractions with a preplanned response. This response is then rehearsed or role played mentally with the intention that the intentional response will be that much easier to access and implement in the real-life moment if and when the distraction arrives.
Pre- and in-competition routines	With the refocusing plan, Orlick (1986) also added this skill, which requires that participants write out their anticipated preparation and in-game practices. With the premeditated organization of their behaviors, participants are freed from any additional stress on the day of an event (e.g., running through mental checklists, worrying if they forgot something). With the physical step-by-step progression of how they will conduct themselves, participants can mentally rehearse the implementation of the routine so that it is lived easily and naturally on the day.
Motivation	
Performance profile	This skill was developed by Butler and Hardy (1992) for a target audience of athletes. Participants are asked to identify the qualities and characteristics they believe are important to producing the best performance in their sporting role. The practitioner can facilitate the ideation of qualities, though the qualities produced are meant to be indicative of what the participants value (rather than simply a list given from a secondary agent). The participants then evaluate their own capacities for each of those qualities. If this evaluation is taken as a reflection of their state in the present moment, the participants can also include a second ranking of what they believe their "best" state to have been in recent memory. The results of this self-assessment provide a basis for reflection and structuring the future training and development practices.

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Letting go meditation	This is a guided meditative practice using the symbolism of a meaningful object to experiment with recognizing the emotional states that are linked to the meaning the participants give to things in their lives. In physically releasing the symbolic object, the participants may experience the same kind of emotional resistance that they would find in mentally "releasing" their attachments to the concept of that meaning. In practicing this detachment in a controlled manner, the participants can rehearse the letting go of their motivational convictions, which drive them to behave in ways they would prefer to avoid. A simplified script for guiding the skill follows: Let us sit comfortably on a chair in front of the table or desk. In front of us, let us prepare an object—either a picture, a significant object, a flag, or a piece of paper on which you have written some words—all of them representing a goal, an expectation, a dream that you want to fulfill, that you care for, and you want to reach. If it is a paper that you are using, let us now fold it as many times as needed for the paper to fit in the palm of your hand. Once we have done that, just set it back on the desk, sit back on the chair, and focus on your breathing while looking at the object. 1. Let us take the object in our right hand and get in touch with what it, or the words that are written on it, represents for you: maybe a desire, something that is precious to you, something you are craving. Something that it would be very difficult to give up or not obtain. 2. Let us close our fingers around the object and tighten our fist, taking some moments to really feel the connection with its contents (its value for us), what it means to us. 3. And now, the fist closed, let us hold this object in our hand and explore the sensations, the images, and the thoughts that simply arise from holding it here and now. Breathe. 4. Let us put our right arm straight in front of us, parallel to the table, with our hand facing downward. And ... let us drop the object, letting go of it, observing the sensations that are appearing, maybe some hesitation, some puzzlement, or maybe some other emotion. Whatever the emotion or the sensation, just let it be. Let us take note, also, of the thoughts right now if they are crossing your mind. 5. And now, picking up the object again in our right hand, holding it again in our palm, and closing the fingers around it, let us breathe and connect with it again. Taking some moments to feel this aspect that is so precious for us. 6. And straightening again our arm in front of us, parallel to the table, with our fist closed, this time let us turn our hand so that the palm is facing upward toward the ceiling. And now, let us open our hand ... and explore the sensations that are coming now. Experimenting every thought, every emotion, every sensation. The object is always there, on the palm of our right hand, simply there. Let us open up to this experience, let us accept it. Accepting things as they are, without clinging to them, without holding them, but, rather, opening our hand to let go of the weight that has accumulated, to develop trust and freedom in our relationship with this desire, this goal, with full awareness. In this very moment, we accept our experience as it is coming, as it is unfolding for us, observing it as it is, simply.