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Review Article

Practitioners Use of Mindfulness Training to Reduce Harm from Self-Sabotaging Behavior

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Abstract

The purpose of the paper is to discuss self-sabotaging behavior (SSB) in terms of how mindfulness training (MT) can be used to overcome or reduce harm from the behavior. SSB can be defined as actions that interfere with self-defined success or personal goals. MT can be associated with the practice of mindful meditation that can be defined as a state of non-judgmental awareness. A goal of mindfulness is to become attuned with one's emotional states, perceptions and thoughts without judgment Therapeutic applications to potentially reduce harm from SSB will be explored, including, mindfulness-based stress reduction, mindfulness sport performance enhancement, and a review of mindfulness acceptance commitment. Finally, recommendations for future research will be provided to develop MT.

Keywords: *Self-Sabotaging Behavior (SSB); Mindfulness Training (MT)*

This purpose of this paper is to review how mindfulness training (MT) can be used by practitioners to assist athletes in overcoming harm that can be related to self-sabotaging behavior (SSB). Topics to be discussed are as follows: (a) defining self-sabotaging behavior by providing examples of the behavior, (b) exploring some of the literature on MT, (c) suggesting specific applications for working with individuals to overcome SSB, (d) recommendations for future research, and (e) conclusions.

Defining self-sabotaging behavior

In certain situations where high expectations of success are present, some individuals will engage in self-sabotaging behavior. Self-sabotaging behavior is defined as an act(s) that undermine traditionally defined personal success by the person who is making the attempt [1]. It can also be described as an act that hampers or hurts progress. Self-sabotaging behavior is linked to a negative belief system that acts to preserve a self-image with the avoidance of failure [1]. Self-sabotaging behavior can also be termed "face-saving" behavior as well. Face-saving behavior is defined as an act that lessens embarrassment and preserves a self-image. Some athletes will engage in self-sabotaging behavior if it is felt a particular goal or unwanted expectation of success is unattainable. This type of behavior may also be present if there is an overwhelming feeling that the act of attempting to reach a goal will be met with failure. Some examples of SSB by athletes include procrastination, drug and alcohol abuse, skipping practice, and engaging in behaviors that lead coaches or officials to implement fines or suspensions. For example, in the sport of golf, an athlete who is afraid he/she will not be able to perform well may fire a caddy right before a major tournament. This action can allow the golfer to blame the failure on an external factor because it can take many weeks for a player to become comfortable with a new caddy. However, if the player experiences success with the new caddy, the act can be seen as very intuitive and can further support the player's decision. In either scenario, the player's ego is protected. A baseball player may start

using banned supplements knowing they are illegal in an attempt to subvert extra practice. The player knows the risk and understands the consequences if caught. If the underlying reasoning for taking the substances is to actually get caught to force a retirement because the player fears the embarrassment of being forced to retire due to age and declining skill, the player justifies the risk. An ice hockey player drinks in excess and relies on a superior talent to continue to play. Due to a family history of disease that had prematurely ended the lives of the males in the family tree, the player wants to enjoy life to its fullest and engages in drinking to satisfy that urge thinking death will soon arrive as well. The fear of a premature death and the desire to live what is seen as a life of fun may be motivating this player to sub-consciously sabotage a career effectively undermining success. A football player does not want to practice and thus, creates a situational crisis that forces the athlete to choose between practice and the situation. If skipping practice was the real motivation, the crisis situation acts as a sabotaging vehicle also undermining success. In basketball, a player no longer wants to play for a team but has been denied trade requests. In order to expedite the request, the player sabotages any potential, personal success with his current team by using physical violence to subdue a coach during practice. The organization has no choice but to suspend the player eventually trading him to another team, which may have been the motivating factor of the player all along. Therefore, recognizing and understanding what causes SSB might be valuable to coaches and practitioners when athletes begin to exhibit signs of the behavior. The next section will describe research into mindfulness training. Several theories exist that attempt to explain the underpinnings of SSB with possible techniques in overcoming the behavior. MT is one of the techniques that seem to have the best outcomes.

Mindfulness training

MT is an individual technique that can be suggested by practitioners as a tool to assist athletes with improving responses to negative thoughts and emotions. MT may be used to help athletes respond to self-sabotaging thoughts in a non-judgmental and positive approach which may help reduce the harm from self-defeating performance behaviors [2,3]. The fundamentals of MT are not to avoid unpleasant experiences or seek only pleasant ones, but to simply acknowledge whatever situation arises without judgment [4]. Based on Eastern philosophy [5], mindfulness involves an honest, moment-to-moment observation of oneself and the world. MT does not subscribe to the suppression of negative thoughts as seen in some cognitive control training [6]. MT accepts negative thoughts as a natural part of living not to be feared or resisted. Any thought is allowed to enter the mind without judgment. A student of MT will simply accept the thought as a part the human condition [6]. MT adheres to a strategy of attentional focus similarly seen in the Buddhist tradition of meditation. MT differs from more traditional cognitive control mechanisms with a nonjudgmental approach to orientation. MT urges acceptance of thought as opposed to suppression and encourages somatic awareness. Focused breathing is one of the somatic centered exercises in MT. However, MT focuses less on attentional somatic strategies to include temperature control, respiration rate, etc. and more on passive acceptance of those experiences. MT insists on a complete attentional awareness of a moment-to-moment occurrences in one's surroundings and attention to bodily sensations [7].

To accomplish that, MT is comprised of two components: orientation to an experience and attention to self-regulation [8]. Orientation to an experience describes a propensity for curiosity and openness to new experiences. Instead of filtering experiences through an expectational bias, MT regards an observation of an event as if seen for the first time. The second component of attention to self-regulation describes an awareness of alertness to any changes to sensations, feelings, or thoughts brought on by any circumstance. Both of the components of MT can be achieved with adequate training [8]. Research has documented how MT can help implement cognitive changes to athletes for the purpose of experiencing a more balanced lifestyle and to potentially enhance athletic potential for the athlete potentially at risk of self-sabotage. According to Mannion and Andersen [9], coaches may play a pivotal role in shaping the attitudes of athletes with interpersonal mindfulness. In many athletic environments, a coach is seen as an authoritative figure. The power afforded with this type of authority can persuade and shape the internal feelings and states of an entire team or individual. Mannion and Andersen [9] suggest that if a coach exercises intra-and inter-personal mindfulness, the relationship may be optimized in the direction of a secure attachment (e.g. with trust and resonance) and help the athlete develop, personally and athletically. Some athletes grow up in an environment of emotional neglect whereas others grow up in a micromanaged or scrutinized environment. Both scenarios can hinder the psychological and physical

development of an athlete. If a coach understands the interpersonal needs of an athlete and can offer the player the support he/she is lacking from a parent or guardian, the coach may further enhance the athlete/coach relationship securely attached relationships, the athlete may turn to the coach for guidance beyond the playing field. A coach familiar with the concept of and rationale for "mindful coaching" may be better equipped to be a positive and healthy influence. Siegel [10] suggests that individuals function best when working within their window of tolerance (e.g. for unpleasant thoughts, feelings, situations). Being pushed beyond one's windows of tolerance can trigger protective stress responses and impulsive coping [11]. These protective reactions may be related to SSBs. In terms of sabotaging behavior, if the athlete grew up in an environment trying to please a parent by excelling in athletics, fearful of losing the love of the guardian, the player may come to view exercise and sports as threatening and requiring additional layers of ego-protection.

Mindfulness-based therapies may help such athletes reconnect with the love of sport by disentangling, for example, their sense of worth from success [11].

According to Walker [5], adolescent tennis players that practiced MT techniques in conjunction with normal training procedures experienced less exhaustion, maintained a higher level of sporting accomplishment, and had reduced levels of sport devaluation. The pleasant feelings the tennis players experienced were similar to research conducted with yoga participants. Yoga may not be considered a formalized sport, but it does require a degree of athleticism. MT and yoga share several goals in increasing self-awareness and global wellbeing. Bryan and Zipp [12] conducted research on beginner yoga participants to determine if MT would increase global feelings of wellbeing. For their study, wellbeing was described as self-care, improved eating habits, overall enthusiasm, exercise adherence, and increased self-awareness. Results indicated that after 10 weeks of yoga coupled with MT, the participants reported increases in every area of global wellbeing [12].

In sport, setting unrealistic goals or expectations can cause anxiety. Coudevylle, Ginis, Famose, and Gernigon [13] reported that SSB is linked with high anxiety and unrealistic expectancies of success. College can be a stressful time for many undergraduate students. In a mindfulness based stress reduction study (MBSR) conducted by Brown, Marquis, and Guiffrida [4], 28 undergraduates were randomly assigned to a control group not exposed to MBSR or an experimental group of yoga meditators that were exposed to MBSR. After 8 weeks of MT using the MBSR program, the participants in the experimental group reported significant reductions in overall stress with an increased sense of environmental control. The participants in the experimental group also reported increases of accepting uncontrollable situations as well as an increase in spiritual experiences [4].

Other athletes describe a psychological mindset of confidence and control as being in a flow state of mind [14]. Although rare and difficult to control, flow states can occur in everyday life experiences as well as in athletics and can easily become disrupted. Many successful athletes have described a flow state of mind as being a crucial component in supporting successful performances [14]. Research has shown that intrinsic motivation, psychological skills training, positive self-concept, and perceived ability contribute to flow in sport. Research supports the hypothesis that there is a positive relationship between confidence and the flow state as well as negative relationship between anxiety and flow [14]. In a study to examine MT in athletic flow states, Aherne., *et al.* [6] demonstrated that athletes in the MT experiential group experienced more frequent flow states in competition as opposed to athletes in the non-MT control group. After competition, the athletes in the experimental MT group reported increased global flow scores, which indicate clearness of purpose goals and a sense of overall control [6].

Worry, high levels of anxiety, and consequential thinking are hallmarks of the self-sabotaging athlete [13]. More specifically, a mindful athlete may not be as motivated to engage in behavioral self-regulation. With a population of adolescent female hockey players, Walker [15] reported the athletes participating in a mindfulness study "exhibited significant positive correlations with confidence, constancy and control, as well as with total mental toughness". Walker [15] suggests that as athletes continue to increase levels of mindfulness, mental toughness thresholds may also continue to increase. This increase may occur, as Siegel [10] describes, because the individual's windows of tolerance expand, not because of attempts to control thoughts, feelings, or sensations (i.e. methods to self-regulate back into the middle of the window), as typically prescribed by traditional PST. In the same study, Walker reported increases in adherence to training and mental toughness, which was highlighted by an ability to overcome obstacles. The participating players in the study self-reported higher levels of

global mental toughness with regular use of MT techniques throughout the season. Emotional and behavioral regulation were two additional reported benefits from MT. Walker also reported that MT assisted the participants in emotional regulation prior to competition and helped the players make better tactical decisions during a competition. However, Walker reported no differences in overall levels of confidence between the control and experimental groups. Confidence may be affected primarily from skill development and external feedback.

Ferrari [16] described procrastinators as individuals actively engaged in SSB. A common trait and motivator frequently associated with procrastination is perfectionism [17]. Petrillo, Kaufman, Glass, and Arnkoff [18] conducted research into perfectionism within a runner's population to determine if MT might help diminish feelings of obsessive neatness, organization, and an overemphasis on precision. Using Morita therapy [18], a MT technique incorporating acceptance and heightening awareness, the researchers reported that the participating runners did experience decreases in the desire to worry over uncontrollable situations and an increase in the notion of acceptance. Awareness and acceptance of negative cognitions without judgment may help alleviate worrisome thoughts concerning outcomes and disruptions in concentration [18]

In order for MT to be effective, the participant must become more aware of surroundings and not to label internal cognitive experiences as either good or bad [2,3]. Mindfulness enhances a sense of self-awareness simultaneously cultivating a mental state of non-judgment. Utilizing a combination of physical training and MT, practitioners may expect positive results from MT in the form of improved mood states possibly leading to performance enhancements. Incorporating MT into a physical training routine can effectively improve overall mindfulness [12]. Gardner and Moore [2,3] state that elite athletes have the unusual ability to function with high levels of anxiety accompanied with a broad attentional focus. Using Siegel's [10] language, they probably have developed wider windows of tolerance. A broad focus can be defined as a perception of attention that examines multiple stimuli simultaneously whereas a narrow focus targets a specific point of interest. An example of a narrow focus would be concentrating on a single dimple of a golf ball prior to the hit [19]. "Both high-functioning athletes and expert meditators appear capable of exhibiting higher levels of anxious arousal and greater contextual (i.e. broader) awareness than novices while still maintaining optimal task performance" [2,3].

In Western society, elite athletes are taught to value completion of goals. This seems contrary to some MT philosophies that emphasizes complete acceptance of any outcome [7]. The challenge for the practitioner is to formulate a training ritual that maintains goals without placing an over importance of outcomes [20]. If an athlete consistently fails to meet outcome goals, that environment may trigger a sabotaging event. The desire to not let down a team or the attempt to fulfill team mate expectations can also contribute to SSB [21]. Using MT, the elite athlete is trained to unshackle the mind free from expectations and desires. This philosophical technique is paradoxical in that liberating the mind of such desires may free the athlete crippled by anger and desires [20].

Mindful acceptance commitment (MAC) has been used to assist performers in a therapeutic manner that trains the athlete to refocus on the current situation using a non-judgmental attitude towards distracting thoughts about the past that might be deemed negative [2,3]. The MAC approach recommends accepting a situation non-judgmentally, avoiding associated labels. Doing so detaches the mind from a negative emotional component towards the situation helping to reduce or eliminate anxiety that might occur organically based on past circumstance [2,3]. Studies of MAC and MT have indicated positive results in closed sports such as golf and archery. However, it is not clear whether the same approach would result in further gains to performance in open sports such as basketball and hockey [2,3].

"MAC promotes acceptance of internal experiences while at the same time focusing the individual on the appropriate external contingencies and behavioral responses required to effectively navigate situations in order to achieve both immediate and distal goals" [2,3]. MAC is similar to traditional mental skills training in that the ultimate goal of each is performance enhancement even though the path to the goal may be different. In MAC, the subject remains connected to all emotional states, but does not allow the emotions to dictate behavior. The MAC trained athlete is self-aware of surroundings, non-judgmental, and executes in the present moment. Goals and behaviors are values based as opposed to emotionally centered [2,3].

Mindful sport performance enhancement (MSPE) emphasizes acceptance in conjunction with the development of MT [7]. MSPE does not emphasize value-driven behavior or goal commitment. In practice, MSPE has documented increased specific performance-related psychological characteristics in a population of golfers and archers. Archery and golf are closed-skilled sports that require that require a high degree of focus and skilled movements that might better showcase the efficacy of MSPE. Field results imply that MSPE can work for practitioners and athletes to help increase confidence and enhance the flow state of mind [7].

Kaufman., *et al.* [7] also reported that no significant changes in trait flow were associated with MSPE.

The golfing and archery research participants reported a change in regards to mindfulness in the Kaufman., *et al.* [7] study. Significant changes were reported with the golfers' levels of decentering, which can be described as an awareness of a current experience. The golfers' reported a general sense of awareness most of the time during the round as opposed to irrelevant or distant thoughts and feelings. The archers experienced similar changes towards levels of general state mindfulness as well as dispositional mindfulness. Overall trait mindfulness was also increased in the archer population. The golfing population reported a significant increase in describing or labeling aspects of trait mindfulness successfully noting moment-to-moment observations but not necessarily executing [7]. Following MSPE, both populations reported increases in feelings of perfectionism. Parental expectations had the most significant impact on attitudes of perfectionism in the archers.. SSB has been linked with unrealistic expectations of success [13]. SSB is a phenomenon that can be associated with critical, parental judgment In some cases, overly critical parents set high goals for young athletes that can continue to influence them throughout life [22]. MT helps to increase awareness. The archers may have become more aware of an old tendency to self-judge originating with parental expectations. One limitation of these interventions is their duration. The two groups of athletes participated in the Kaufman., *et al.* [7] study for about a month. Practitioners however, may need a longer duration of practice to lower or eliminate the feelings of perfectionism with MT. It is encouraging, though, that with only a month to train, these recreational athletes reported significant changes in both trait and state cognitive factors that are well known contributors to successful performance [7].

Mardon, Richards, and Martindale [23] investigated an MT intervention on attention and performance with six nationally ranked UK swimmers (two males, four females). For the experiment, the researchers used a combination of mindfulness and effort scale surveys with a portable mindfulness disk. The participants were also given written instructions on how to use the product fully explaining the basic tenets of MT [23]. Pre- and post-measurements indicated that half of the swimmers experienced significant improvements in mindfulness and attention, which also translated into increased performance times for four of the athletes.

In summary, there is evidence that MT is effective. The research reviewed above has shown how MT affects emotional regulation, focus, self-awareness, acceptance of circumstance, spatial awareness, reductions in stress, increases in overall wellbeing, and flow state access. By helping athletes be more mindful, they may start to change behavior that perhaps limited creativity or inhibited confidence. Research studies imply use of MT techniques may increase performance execution by modifying the processes in which athletes react to mental and physical sensations. Performance enhancement via MT does not require the elimination or reduction of willful control of internal states. Instead, MT promotes a nonjudgmental labeling of current events with awareness and acceptance of internal states.

The next section will focus specifically on utilizing MT with examples of SSB in sport. Specifically, the examples provided above are used to describe how SSB can be addressed.

Applications of MT

Given the research on SSB and MT discussed above, the following techniques can be applied to the examples described in the beginning of this paper. The first example was about a golfer. Golf is primarily played as an individual endeavor. There is considerable time between shots, leaving the golfer with an abundance of time to contemplate what could go wrong. They may respond to these internal events (e.g. thoughts) by trying to fix aspects of their game that are not necessarily faulty. A caddy is part of a professional golfer's sphere of influence

who offers guidance on course management tactics, green reading, club selection, as well as serving to help emotionally regulate a player. A successful working relationship between caddy and player can take several weeks to establish because of the many factors required to build trust and confidence. Many variables are required to become a successful, professional golfer, and sometimes a player will attribute failure or attach blame to external distractions to protect his/her ego or save face by preserving a public self-image; a definition of SSB. A caddy is a variable that can be blamed for failure or the cause of a negative outcome. For the self-sabotaging professional golfer, failure may be attributed towards bad caddy decisions or suggestions in an effort to protect player ego and save face even if the player/caddy relationship may have resulted in success in the past. In certain cases, a player may not have properly prepared for a particular event and seeking a reason to justify failure before the tournament starts. A player may not feel his/her game is adequate for a particular kind of tournament and may look for an external excuse to blame failure upon before the event occurs to save face in the future if he/she fails. If the player had previous success with a caddy, these actions sabotage any chance of future success with the same caddy and therefore the irrational behavior is considered self-sabotage. The player needs something or in this case, somebody, like a caddy to blame failure upon other than self. The player engages in SSB because he/she irrationally fires a successful caddy in order to distract from possible personal shortcomings. The player blames the caddy for past failures even though the relationship may have had many past successes. In this specific case, the MSPE technique might be utilized to increase overall awareness in the player and to develop a heightened sense of acceptance for both controllable and uncontrollable situations. Research by Kaufman., *et al.* [7], conducted with a population of golfers and archers, implies that MSPE would be appropriate because golf requires a very high level of focus and precise hand-to-eye coordination. MSPE might work for practitioners and athletes to help increase confidence and enhance the flow state of mind [7]. The golfer would first be required to read information outlining the goals of MSPE and assess if personal expectations matched those objectives. The golfer would be asked to perform sport specific exercises and then to document those experiences in a daily log. The golfer would start the day with 20 - 25 minutes of sitting meditation focusing on deep breathing techniques and somatic awareness leading to a complete body scan characterized by the golfer becoming very aware of the entire body starting with the feet and ending with the head. The body scan trains the golfer to become aware of the sensations of every part of the body to be able to recognize how situational stimuli can negatively affect tension in the body. After leaving for the golf course, the golfer will practice a form of walking meditation while leisurely strolling the course. Another purpose of the walk is to become more aware of every aspect of the course and to simply observe the setup of the course without attaching judgments to the layout (e.g. this is a long hole or that is a tough putt). Afterwards, the player begins a practice routine on the driving range becoming acutely aware of how the club feels in the hands and the sensation of club-ball contact. Because visualization is a well-known mental skills technique for professional golfers, this athlete will incorporate it into this MSPE routine. Even though the ball flight and curvature will be clearly seen in the mind prior to the strike, the golfer will refrain from judging the final outcome of the ball positively or negatively if it does not match the picture first imagined. With this mindset in place on the driving range, the golfer continues this part of the MSPE exercise throughout the round of golf and playing the game by executing one shot at a time. After the round, the player will document that day's results and experiences in a mindfulness log to monitor daily progress.

The second sport mentioned above was baseball. Professional baseball is a sport that requires a yearly commitment to physical training. As a player gets older, the incoming competition from minor league teams compounds the pressure to stay in top physical shape. In some cases, financial responsibilities force a player to try and extend a career. In other cases, a player may resort to using banned supplements for faster recovery from injuries or to try and maintain past levels of strength and stamina. All players in Major League Baseball [24] are advised of the league substance abuse policy. Some self-sabotaging players may disregard the policy in order to overcome injury and attempt to play out the year. In this particular case, an older player engages in SSB by using a banned substance. The player is fully aware of all the consequences if caught but chooses to play out the season, perhaps due to financial concerns. The player also has nagging injuries that are causing increased levels of anxiety and stress. SSB is difficult to objectively diagnose because no athlete will admit to sabotaging his/her career. This particular athlete may have faced external pressures to remain on a team even though physical pain has limited full effort. The player may have wanted to retire but chose not to because of outside pressure to play. The player may have also

earned the respect of other players with a stellar career but uses banned substances to help overcome the injuries and lessen the pain to play out the season. If the player is caught using the substances, the organization may force retirement and thus the player avoids the embarrassment of a declining skill set because of age effectively helping the player save face. The player can claim the organization forced retirement because of the usage of banned substances and not because of a diminished skill set. The player is engaging in SSB. Therefore, because of the particular circumstances for this athlete, the MBSR program seems most appropriate because it has demonstrated consistent effectiveness in easing chronic physical pain and reducing stress when used with a minimum of an 8 - 10 week outpatient intervention [4]. For the MBSR program to be effective, this athlete would have to commit that amount of time before spring practice started to experience any long term effects and continue with the exercises during camp. An MBSR program is taught by certified trainers. MBSR consists of two hour weekly group classes educating participants on mindfulness. Daily homework is assigned followed by techniques in meditation, yoga, and body scanning. The program also consists of a one-day, six hour practice retreat. Like most other MT programs, MBSR is based on acceptance, non-striving, non-judgmental, willingness to let go, trust in self, and patience. After the player completes the MBSR retreat program, the spring practice program would mimic many of the tenants learned from the retreat. That would consist of becoming very aware of any and all somatic sensations while sitting or lying in a quiet place. The player focuses on controlled breathing in the nose and out through the mouth. The athlete then begins a body scan stopping at any point that may be sore or tender. If an area on the body is detected as tender, the player might imagine a warm light radiating on a sore area simultaneously taking deep breaths to help expedite the healing process (if necessary). After completion of the entire body scan, the athlete begins mindful stretching exercises. The stretching exercises focus on very specific parts of the body designed for this player by an athletic trainer that could incorporate MBSR techniques. If the player is experiencing a sore spot, the stretching must not exacerbate that area. Finally, the player engages in mindful yoga, which may deviate from standard yoga due to positioning that promotes baseball strength and flexibility. Athletic yoga promotes somatic awareness and in this particular case, may expedite any healing this athlete may require.

Fear of the future is a common trait for many people. It can become compounded for an athlete that may not be able to continue in a chosen career due to what they believe is an inevitable and uncontrollable outcome. In the third example above, a very gifted ice hockey player also has a verified history of disease in the family tree that prematurely killed many of the males in the family. The player uses that justification to engage in behavior that is not conducive to playing championship hockey. Because the player may believe the genetic disease that killed the males in the family tree is also inevitable, the player engages in raucous behavior intended to live life to the fullest regardless of future consequences. Because the player may believe there is no long future for life or athletics, any thoughts of possible setbacks to training or performance are not considered. The player is motivated by a fear of a premature death and determined to not let the fear interfere with carnal pleasures. The player is reacting to an unknown fearful future (premature death) and is actively engaged in SSB. Self-medicating with drugs or alcohol is a common form of self-sabotage [25]. In this case, the harmful behavior of drinking and carousing robs the player of talent due to the effects of excessive alcohol. It may be hypothesized that the mental toughness needed to play professional hockey has been compromised by this hockey player, who is only able to compete at the professional level because of a superior and innate level of talent. In a study with adolescent female hockey players, Walker [15] reported that "mindfulness is significantly and positively correlated with not only global mental toughness, but also with confidence, constancy and control." Although the age and skill level of this population may be an obvious limitation to this case, the results of the study demonstrate that MT might be expected to have some positive ramifications on mental toughness in the sport of hockey [15]. Mentally tough athletes are characterized as being able to regulate emotional states, confident in task completion, resilient, and goal focused. Mental toughness shares some of the same characteristics promoted in MT. A coach or trainer could use the tenants of MT to further enhance an athlete's ability for acceptance, non-judgmental, patience, preparation, and readiness for circumstantial change. Because alcohol is an important element with this hockey player, a counseling approach to MT may also greatly benefit this athlete. In this case, a counselor trained in mindfulness would start with educating the athlete concerning the basics of MT explaining how many people worry excessively about uncontrollable past and future events which may rob them of fulfilling their potential. The counselor would reinforce the assertion that the hockey player is not alone in those thoughts in an attempt to normalize this line of thinking. Finally, the counselor would provide the athlete with research to document

that MT can effectively benefit this situation and reassure the player that specific treatment for this particular case is available [4]. After educating the athlete on those points, the hockey player may be ready to begin formal MT.

In another one of the above examples, a football player positions an upcoming family crisis to interfere with team procedures. Although the crisis may have been handled seamlessly with outside support, the player uses the crisis to create enmity between the team (i.e. coaching staff, management, and team mates) that actually masks a self-sabotaging motive. For reasons unknown, the player wants to skip practice and uses the family crisis as a way to create an emergency environment that sabotages practice by putting the organization in a compromised position. If the team protests, it might be perceived as being at fault or non-sympathetic towards the players' family. This athlete is engaged in avoidance behavior, which might be negatively interpreted by the organization as actions that are detrimental to team success. Perhaps the player is stressed concerning position competition within the team or experiencing anxiety due to an upcoming event interpreted as being insurmountable. Regardless of the reason, the player used a family emergency as the excuse. The player knows the organization may suspend the contract of a non-performing player. In spite of that, this player made the decision to avoid practice and risk sabotaging success with the team because skipping practice will hurt the player's progress and is considered self-sabotage. The decision to skip practice may have been motivated by a response to the emotion of anxiety. For MT to be effective for this athlete, the player must first understand the difference between rule-governed behavior defined as learned behavior without having direct experience and valued goal-directed behavior, which can be defined as actions motivated by the pursuit of achieving an objective (goal). In this case, the objective is athletic improvement through practice, commitment, and embracing the challenge of competition. After the athlete makes the distinction between rule-governed behavior and valued goal-directed behavior and understands internal rules are not conducive for success on this team, the player begins the process of disassociating from rule-governed behaviors. Next, the player is educated on the importance of behavioral self-regulation with the continuation of focusing on servicing team and personal value goals. Finally, the player is encouraged to experience moment-to-moment events without judgment. In the past, the athlete operated within a rules-governed environment associated with control and attempts to reduce negative consequences. With MT, the athlete accepts thoughts and emotions as temporary states of mind and does not attempt to control or reduce them.

The final example above is about basketball. It is not an uncommon occurrence for an athlete to dislike a coach. It is very rare, however, for an athlete to strike or use some other form of violence towards a coach emanating from a dispute. Actions like violence directed at team mates, coaches, or fans can force an organization to suspend or dismiss a player. If a player wanted to be dismissed from a team because the player did not feel the organization could help fulfill a personal goal, choking a coach during practice might precipitate that desire. The player may not have completely thought through the strategy because that kind of SSB may signal several red flags for other teams that might be interested in picking up the player if suspended or traded away. In this specific case, an all-star professional basketball player had a disagreement with a coach and instead of walking away from an argument or waiting until after practice to discuss the problem, the player choked the coach during the altercation. This player does not have anger management issues because there had been no past events of previous outbursts. The anger stems from a sense of frustration as a result of the organization not agreeing to a trade request. The player lashes out at anyone perceived to represent the organization. The coach of the team has a harsh style of instruction and yells at this player about a past, lackadaisical performance before a practice session. The player reacts angrily grabbing the throat of the coach with the intent to strangle. Afterwards, the player is suspended from the team. Although the player has not been traded yet, the act of attacking the coach inadvertently fulfils the player's motivation to disconnect from the team sabotaging any chance of success the player may have had with this team. This basketball player self-sabotaged any possible chance of success with this team because the athlete may have thought there was no chance of having success with this organization. Some athletes engage in self-sabotaging behavior if a desired outcome becomes problematic or unattainable [1]. This is a classic example of SSB because the player perceived a trade as problematic. MT may have helped this player in a number of ways. The first step for this player is to become more aware and to recognize emotional states. The goal for the player is to simply label and interpret anger as a temporary emotional state. If the athlete becomes emotionally triggered by someone yelling, the reaction of physically lashing out is replaced by an interpretation of the emotion, which will

give the athlete time to cool down. The athlete also becomes more aware of how the body reacts to the feelings of anger with an internal, somatic scan. This basketball player is an NBA All-Star, which demonstrates value-driven behavior. This player takes pride in always playing up to maximum ability, but doesn't feel comfortable within the framework of this team or the coach. Instead of succumbing to emotional based behavior as before that could lead to SSB, MT will help this player stay focused on performance value-driven goals. In order to do this, the player will have to work on staying poised in situations on and off the court that may be described as tense or negative by others. In conclusion, the elements of MT that might assist this player include becoming aware of emotional states without acting out on them acknowledging that they are temporary. In times of confrontations that may lead to an angry outburst, instead of acting impulsively on the emotions which could sabotage future success, the player simply labels and accepts the emotions as what they are, but does not react to them. The player does not try to control emotions; instead they are allowed to run their course. The player becomes aware of how the body reacts to any tense situations with a head to toe body scan. The player then refocuses on a set of value-driven personal goals highlighted by a commitment to self-care, moment-to-moment problem solving, and effective decision making all designed to enhance performance and facilitate previously enjoyed success. Dean Smith and Mike Krzyzewski are considered legendary basketball coaches. In separate interviews, both coaches emphasize the importance of playing basketball in the moment, focusing on what processes are needed to be successful, and the significance of being able to cognitively letting go of negative or uncontrollable emotions [7]. MT often sounds easy to accomplish, but in real competition against opposing players can be a challenge in adherence.

The above examples are all based on research supporting the use of MT. However, as is true of all applications, there are limitations that affect generalizability of the findings. The next section will discuss future directions of MT.

Research Recommendations

Although there is tentative research evidence to support the applications provided above, there is still need for additional research. Specifically, key areas for future research include the timing of interventions, the length of the intervention, and the experience level of athletes. For example, Aherne., *et al.* [6] acknowledge more study is needed to determine what specific MT interventions would benefit a particular athlete.

Other considerations are how the mechanisms would be delivered and when would be the best time to deliver them. In practical terms, a consideration for coach and consultant is when an intervention is most appropriate. Some athletes may respond better to MT during practice or an actual game, before practice, after practice or game, and some athletes might respond better in a quiet, academic environment. Thus, research should explore the optimal timing of MT. Aherne., *et al.* [6] also state that even though 4 days of MT improved athletic cognitive processes, higher executive functioning (working memory and visual spatial processing) need further investigation.

Researchers have also been attempting to identify what duration of MT may be necessary for positive outcomes. Petrillo., *et al.* [18] suggests that more time for implementation and practice for the MSPE workshop may have benefitted the runners in the study. Although the researchers did document a change in some psychological variables, significant performance enhancement was not one of the benefits. In post survey reports, 81% of the runners felt confident that performance would improve if allowed more time to acclimate to MT. Kaufman., *et al*. [7] also did not indicate any significant performance enhancements when using MSPE, suggesting that the use of MT was new to the participants and may have been too complicated for the athletes to integrate into a training routine in a 4-week period of time. Petrillo., *et al.* [18], however, suggests that more experienced runners did experience an increased sense of perfectionism after MT, which may account for the participants reported increased general competitiveness. In practical terms, both studies indicate that 4 weeks may not be long enough for the benefits of MT to start to emerge as performance gains. The results also imply that more experienced athletes may use MT as a vehicle for motivational purposes because experienced athletes may be more competitive and view the MT intervention as another form of competition leading to an increase in standards and performance as opposed to less experienced athletes that may still be struggling with emotional regulation.

In sum, although we probably have enough research findings upon which to base effective applications, future research will enhance our understanding of MT and may provide better applications. Aspects that might be studied include the timing and length of interventions, as well as the expertise of the athletes.

Conclusion

Self-sabotaging behavior is defined as actions that interfere with success or hinder goal progression [1]. Some athletes will commit self-sabotaging acts if he/she believes there is no possible chance of successfully reaching a goal. Instead of facing failure, the self-sabotaging athlete may engage in actions to maintain a public self-image by avoiding future chances of failure, also known as face-saving. Face-saving can be defined as actions to lessen personal embarrassment.

In the examples listed, a gifted hockey player sabotages a career by drinking excessively to self-medicate. A basketball player attacks a coach to force an organization to action effectively ruining any chance of success with the current team. A baseball player takes banned substances to extend a career attempting to preserve a self-image and avoid embarrassment. A golfer fires a caddy to save face in the event of a failure yet to happen. The use of SSB can be very debilitating and difficult to objectively diagnose. SSB differs from maladaptive behavior because SSB is not deviant in nature. Thus, there is a need to understand the behavior and identify techniques for overcoming the behavior.

Fortunately, research has revealed several applications that may work to reduce SSB; MT has been shown to have potential. This paper includes reviewed MT research and provided examples of how MT may be used to deal with athletes from a variety of sports. Research, however, has limitations that need to be addressed. Thus, some additional suggestions for future research has been included. As our understanding of SSB improves, our ability to offer theory-based applications will improve. Ideally, in the future we will better know exactly what to do when athletes seem to be suffering from SSB.

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