Anxiety and the Use of Coping Strategies during Penalty Kicks

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Abstract

Anxiety can have deleterious effects on sports performance, particularly in high stress situations. Penalty shootouts in soccer are one such example. Therefore, understanding how anxiety can impact the penalty taker in addition to developing coping strategies for such a situation could lead to more successful outcomes. Therefore, the purpose of this article is to provide recommendations that can help coaches teach soccer players (kickers) how to cope with the anxiety likely to be experienced during penalty shootouts. Training methods that include inducing anxiety scenarios are discussed, and a rationale for developing psychological intervention training is provided.
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Introduction

An athlete’s performance of any sport is influenced by a variety of factors that are both physiological and psychological. One of these factors can be anxiety (Woodman & Hardy, 2003). According to Spielberger (1971), anxiety can be divided into state and trait anxiety. State anxiety is an immediate state of emotion characterized by tension, apprehension, an increase in autonomic nervous system activity, and varies depending on the situation (Horikawa & Yagi, 2012). Conversely, trait anxiety is the tendency to perceive certain situations as threatening (Horikawa & Yagi, 2012). High trait anxiety can result in an increase in state anxiety (Cox, 2012).

The state anxiety response can be explained by the stress process. This process begins with a stimulus; in sporting situations this could be a competitive situation in which is appraised by the athlete (Cox, 2012). How an athlete will appraise or evaluate the situation will occur on two levels; during the first level the athlete will evaluated whether the outcome is considered important. Should this be the case, the second level of appraisal the athlete determined whether coping resources are sufficient to deal with the situation. Therefore, if the person is not interested in the final outcome or has good coping skills, state anxiety will not occur (Cox, 2012).

Not only can anxiety be divided into state and trait anxiety, Multidimensional Theory states that anxiety can be divided into cognitive and somatic anxiety (Martens, Burton, Vealey, Bump, & Smith, 1990). Negative expectations and concerns about ability (i.e., “I do not believe that I possess the skills necessary to be successful in this situation and will therefore likely fail”) are part of the cognitive component of anxiety. This negativity manifests itself physiologically. The individual experiences physical side effects such as an upset stomach, sweating, shaking, and vomiting to name just a few. This is also termed somatic anxiety (Cox, 2012; McNally, 2002).

Effects of Anxiety on Soccer Penalty Shootouts

It has been shown in different sports that anxiety influences athletes’ performance by diminishing it (Causer, Holmes, Smith, & Williams, 2011; Englert & Bertrams, 2012; Horikawa & Yagi, 2012). In team sports, there are situations when the player may receive more pressure than usual, as in the case of penalty shooting in soccer (Jordet, Hartman, Visscher, & Lemmink, 2007). In fact, anxiety is the most experienced emotion during penalty shooting, probably because of players’ concerns about the final outcome (Jordet & Elferink-Gemser, 2012). State anxiety is likely to occur, as players are likely unaccustomed to the pressures of performing in such a high pressure situation. Accordingly, players evaluate the outcome as important (level one) and may not perceive themselves as having the necessary resources to deal with the situation (level one). It becomes important, therefore, to understand how anxiety affects soccer players and how coping strategies might be introduced in order to decrease state anxiety. A reduction in state anxiety will reduce levels of somatic anxiety and likely lead an improved outcome.

Jordet, Elferink-Gemser, Lemmink, and Visscher (2006) found a positive relationship between perceived contingency and somatic anxiety direction and a negative relationship between perceived competence and cognitive anxiety intensity based on the contingency-competence-control (CCC) model. This, according to Weisz and Stipek (1982), states that perceived control is the result of perceived contingency and competence. In other words, believing that penalty practice increases performance during penalty shootouts (high perceived contingency) helps to have a positive physiological response to anxiety (somatic anxiety direction), and being confident about one’s ability to execute the penalty shootout (high perceived competence) helps to decrease negative thoughts (cognitive anxiety). Not only are cognitive and somatic anxiety affected when performing penalty shootouts (Horikawa & Yagi, 2012), but high trait anxiety influences state anxiety by increasing it and ultimately decreasing the number of successful scored goals.

The goalkeeper (GK) is another factor that can influence kickers’ anxiety during penalty shootouts (Wilson, Wood, & Vine, 2009). Wilson and colleagues found that during high-threat conditions, the
addition of a GK increased kicker time fixation and time to fixate on GK rather than on the goal target, as opposed to the low-threat condition. The final outcome of the previously mentioned characteristics during the high-threat condition was a significant decrease on aiming further from the GK (aiming to goal) when compared with the low-threat condition.

Jordet and Hartman (2008) used penalty shootouts on the most prestigious competitions (World Cup, the European Championship, and the UEFA Champions League) and found that strikers tended to avoid looking at the GK. They suggested it is likely that the preparation prior to shooting is shorter when avoidance occurs compared with those who do not avoid looking at the GK. Moreover, they also found that avoidance behavior (quicker preparation and avoidance looking at the GK) occurred more when the consequence of a missed shot would lead to loss (negative valence), than on shots where a goal would lead to victory. Avoidance behavior and negative valence was found to diminish performance resulting in a missed goal.

Jordet et al. (2007) wanted “to estimate the relative importance of some of the major performance components that are assumed to affect the outcome of kicks from the penalty mark” (p. 123). These variables included the importance of the tournament, importance of the kick, player’s position (forward, midfielder, defender), playing time, and age. They found that the final outcome was more influenced by psychological factors such as the perceived importance of the tournament and importance of the kick. The more important the tournament, the less successful the penalty kicks were, and the probability of scoring declined progressively with each kick from the first to the fourth kicker. When combining kicks one to three and comparing them with the combined kicks four to nine, the kicks one to three had a significantly better outcome. In addition, during the sudden death stage, where the outcome is decided by one round of penalties, the probabilities of scoring decreased. No significant differences were found for position, playing time, and age.

Lastly, Jordet and Elferink-Gemser (2012) interviewed eight players to investigate stressors and emotions and how participants coped during penalty shootouts. They divided penalty shootouts by phase: 1) break after extra time, 2) mid-circle, 3) walk, and 4) at the penalty mark. They found that stressors, emotions, and coping changed during each penalty phase. Stressors were more persistent during the first two phases. Coping strategies fluctuated being present during phase one, decreasing during phase two, and increasing during phases three and four. In addition, anxiety was the emotion most reported during all phases, but the most occurred during phase to and the least during phase four.

**Coping Strategies for Anxious Situations**

Due to the few studies on penalty shooting in soccer, it can be useful to evaluate how coping strategies have been applied in other sporting situations. Contreras, Córdoba, and Fernández (2010) found that positive words or images helped to decrease state anxiety across athletes in multiple sports. In addition, some authors have found that negative thinking in the presence of high anxiety may diminish performance (Bakker, Oudejans, Binsch, & Kamp, 2006; Raoul RD, Oudejans, Binsch, & Bakker, 2013). Binsch, Oudejans, Bakker, Hoozemans, and Savelsbergh (2010) investigated if negative words or mentioning what should be avoided was the cause of the decrease on performance; they found that mentioning the area to avoid was responsible for such a decrease on performance. Therefore, the suggestion of being anxious or the instruction for an athlete to calm down, for example, may in fact create a more anxious athlete.

Reeves, Tenenbaum, and Lidor (2007) performed an intervention with soccer players who were randomly assigned to one of three training conditions: a) single-task, b) dual-task, and c) self-consciousness. Single-task participants completed training consisting of 45 penalty shots (day one) and 45 breakaway situations (day two). Dual-task participants performed the same training with the addition of loud noises from a crowd. Self-consciousness participants did the same training as single-task with the addition of a task; they were told to focus on the part of the foot that kicked the ball and the position of their plant foot. Finally, the three groups performed the tasks (penalty shootout and breakaway situation) under low and high pressure. The low pressure situation included no additional manipulation, but in the
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high pressure situation participants competed for a prize, were videotaped, and externally evaluated. Self-consciousness training was found to improve performance under high-pressure situations, while single and dual-task training groups decreased their performance under high-pressure situations. Therefore, requiring participants to focus on the process of the penalty kick, rather than the external environment may help to eliminate extraneous, uncontrollable thoughts and variables.

Mental training is an important factor that may help to diminish the effects of high anxiety. With this in mind, Wolfram and Micklewright (2011) conducted an intervention on dressage riders. Participants completed interventions including goal-setting, relaxation techniques (progressive muscle relaxation and breathing strategies), self-talk, concentration, and imagery sessions of two-hours per week for six weeks. Participants’ performance increased significantly, although somatic arousal, cognitive arousal, and self-confidence did not change significantly (nevertheless, there was a change after intervention). Benefits of mental training such as progressive muscle relaxation, self-talk, diaphragmatic breathing, and imagery to manage anxiety have been reported across multiple sports and situations (Mousavi & Meshkini, 2011; Navaneethan & Rajan, 2010; Urra Tobar, 2014).

Lawrence et al. (2014) investigated the principle of specificity for simple and complex tasks applied to anxiety, and hypothesized that practice in anxious situations would improve performance during high anxiety situations during competition. The intervention consisted of four groups: a) control group, b) anxiety group, c) anxiety-control group, and d) control-anxiety group. The anxiety group trained with anxiety continually, anxiety-control group trained with anxiety half of the time, and control-anxiety group trained like anxiety-control group but in the reverse order. Training with anxiety resulted in better performance when doing a simple task and a complex task, and only the control group showed a decrease in performance. In addition, for complex tasks the control-anxiety group had a better performance than the anxiety-control group, suggesting that anxiety should be introduced later on during the learning process. These findings are supported by Oudejans and Pijpers (2010) who found that training with mild anxiety helps to maintain the level of performance under pressure.

Some studies have investigated quiet-eye training and how it influences penalty shootout performance (Wood & Wilson, 2011, 2012). Quiet-eye training involves instruction on where and when to pay attention during the quiet-eye period (Wood & Wilson, 2012), which according to Vickers (1996), is “…that portion of the final fixation from onset to the first observable movement…” (p. 348). Both studies by Wood and Wilson (2011, 2012) yielded inconclusive results. Wood and Wilson (2012) found that quiet-eye training optimizes performance and aim. In addition, contingency, competence and control increased when compared with control group. However, in their earlier study (2011) the quiet-eye trained group improved visual control and accuracy, but when performing penalty shootouts under pressure those characteristics did not prevail.

**Recommendations for Penalty Shootouts**

Although not many studies have investigated the role that anxiety may have on outcomes during penalty kicks in soccer, application from other sports and environments allows some transfer to this situation. Therefore, presented are several recommendations that coaches and players should consider implementing into their training and penalty kicks in order to potentially improve the outcome.

**Practice Penalty Kicks in Anxious Situations**

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**Time to Prepare**

Kickers should be aware of the advantages of taking their time to kick the ball during penalty shootouts. When kickers avoid looking at the GK, the preparation time tends to be shorter and performance is diminished (Jordet & Hartman, 2008). Therefore, kickers should be willing to observe the GK, but they should not fixate their sight on the GK (Wilson et al., 2009). Rather, fixating on desired location or the ball itself may be more effective.

**Learn Coping Strategies**

Coping strategies may be used during penalty shootouts (Jordet & Elferink-Gemser, 2012) and should therefore be taught, learned, and practiced. Positive words can help to decrease anxiety (Contreras et al., 2010), and the use of cue words may help to focus on the task at hand rather than on external factors or the outcome. Other strategies that may help to diminish anxiety and improve performance include goal-setting, relaxation techniques, self-talk, and imagery (Wolfram & Micklewright, 2011).

**Consider Quiet-Eye Training**

Although inconclusive, quiet-eye training optimizes accuracy (Wood & Wilson, 2011), which is an important feature when performing penalty shootouts. The addition of mild-anxiety to quiet-eye training may help to improve performance under pressure. For instance, a way of quiet-eye training can be practiced can include watching penalty videos and analyzing the GK movements prior to each penalty. Penalty kickers can be taught to focus on a specific area of the goal that can offer the best chance of success (Wood & Wilson, 2011, 2012).

**Conclusion**

Athletes’ performance may be negatively influenced by anxiety, and state anxiety is influenced by their beliefs and confidence about their ability and coping strategies to deal with the situation (trait anxiety). During penalty shootouts, strikers can be affected by anxiety (Jordet & Elferink-Gemser, 2012), which may be influenced by the importance of the tournament and kick (Jordet et al., 2007). Kickers should practice penalties with mild anxiety and be given opportunity to learn coping strategies to help reduce anxiety levels during actual competition. In addition, they should practice being self-conscious of their movements prior to fixating on a target area of the goal. Finally, strikers should be aware that their beliefs about the penalty shootouts and their skills will influence the final outcome; therefore, developing strategies that enhance their confidence will lead to improved outcomes.

It is important to clarify that although these recommendations may help to improve performance during penalty shootouts, the dynamic characteristics of state anxiety, in addition to the influence of trait anxiety as noted by Horikawa and Yagi (2012), influences the final outcome. Therefore, the positive outcome of a penalty shot cannot be assured, yet the use of pre-determined practice and strategies can enhance the likelihood of success.
References


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