

# Influence of Interpersonal Anxiety on Penalty Shootout Performance

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## Abstract:

This paper examines the impact of interpersonal anxiety on athletes' performance in football penalty shootouts. Through a review of the existing literature, it explores how these external factors that come about as a result of interpersonal relationships can lead to elevated levels of anxiety, which may affect final performance in penalty shootouts. The analysis highlights the complexity and potential interplay of different interpersonal relationships, how it evolves into anxiety triggers and ultimately affects performance in penalty shootouts. By understanding these dynamics, this study suggests targeted psychological interventions for coaches and sport psychologists to mitigate the impact of these factors on athletes and ultimately improve their performance in critical moments such as penalty shootouts.

**Keywords:** Penalty Shootout, Interpersonal relationship, Anxiety, Athletes

## 1. Introduction

A penalty shootout is a method usually used to determine a winner when is still tie after regular time and extra time. In a penalty shootout, the teams usually start by tossing a coin to determine the direction of the goal and the order in which the shots will be taken. When the penalty shootout begins, a different player walks to the penalty spot to attempt a shot for each shot, with only the goalkeeper defending the ball. Typically, each team has five shots on goal and the team that scores the most goals wins. If there is still a tie, the shots will continue until the game ends when one team scores and the other concede a kick. In such a scenario, every player is carrying a great deal of pressure with every penalty kick, as conceding a penalty kick means a lot, whether it be for the game, for their team, or even for their country. All of

these make penalty shootout become a high level of anxiety scenario.

That anxiety can affect overall performance in sports is obvious. And it is crucial to study interpersonal anxiety in sport because anxiety from different interpersonal relationships can deeply affect an athlete's competitive performance. A penalty shootout is a perfect scenario to study high pressure. According to the previous studies, in a penalty shootout, psychological factors have a greater impact than skill and physiological factors in affecting performance (Jordet et al., 2007). Anxiety impairs athletes' decision-making, concentration, and physical performance (Wilson et al., 2009), and the outcome of the game depends on the athlete's ability to maintain a consistent level of performance in the face of so much relationship-induced anxiety. However, the difficulty of this

experiment lies in the fact that anxiety caused by interpersonal relationships is very subtle and difficult to capture, and in many cases even the person himself is difficult to distinguish. Therefore, this thesis includes much of the relevant literature with the aim of investigating how anxiety arising from relationships affects performance in the single scenario of a penalty shootout. This is despite the complexity of the variables that contribute to anxiety and the fact that many researchers reading the literature do not suggest a direct relationship between the two variables. However, this study hopes to examine this complete logic by disentangling the relationship between relationships and anxiety in an attempt to find the intermediate factors that play a mediating role. By studying anxiety in specific detail, more effective strategies for athletes to cope with high pressure can be developed, helping them to perform better under pressure and achieve better sporting results.

## 2. Understanding Anxiety in Sports

While there are many types of anxiety could be rise in sports, this study focuses on anxiety generated by interpersonal relationships in sport. Generalised sport anxiety consists of the pressure and tension that athletes naturally feel in response to the competitive nature of the sport, such as pressure for their performance to be perfect and fear of failure. This type of anxiety can be understood through the catastrophe model, which suggests that athletes' performance improves as arousal levels increase, but that increased levels of arousal can lead to over-anxiety and a decrease in performance.

The term interpersonal anxiety is more specific to the context of sport, and it refers to anxiety caused by the athlete's interactions with others, including coaches, teammates, and spectators. The social facilitation theory represents a significant model for comprehending this process, underscoring the impact of the presence of others on performance. According to (Cottrell et al., 1968), it is not the presence of other people that is important for the onset of social facilitation, but the apprehension of being evaluated by them. We know that approval and disapproval often depend on the evaluations of others, so the presence of others triggers a learned arousal based on evaluation anxiety. The presence of an audience serves to stimulate the athlete, as they are aware that the audience will evaluate their performance. The audience is therefore perceived as more than a mere passive observer. This model explains why the spectators make athletes anxiety without any interaction in person even just exist. This performance evaluation worry enhances arousal. All in all, social facilitation directly refers to an improvement in task performance when an individual is in the presence of oth-

ers (e.g., an audience, competitor, or co-actor) compared to when they are alone. But the influence of an audience on performance is either positive or negative, depending on the skill level of the athlete and the nature of the task. For example, experienced athletes may under pressure, whereas less confident athletes may be unable to perform to the same standard.

The Transactional Model of Stress and Coping suggests that an athlete's assessment of a situation - whether they perceive it as a challenge or a threat - will determine their coping strategies, and their coping strategies will ultimately determine their performance. In previous study (Jordet & Elferink-Gemser, 2012), the researcher used interviews to speculate on what centred coping strategies the athletes adopted at different stages of the penalty shootout, a line of thought that fits right in with the model through a broad correlation with interpersonal relationships.

Interpersonal anxiety in sport can seriously affect athletes' performance. This anxiety stems from the pressure of a wide variety of social interactions, such as the expectations of coaches, the evaluations of teammates, or the scrutiny of spectators. By understanding and differentiating this anxiety, sport psychologists can develop interventions to help athletes manage stress and improve their performance under pressure.

## 3. How Different Relationships Influence Anxiety

Penalty shootouts are highly stressful situations in football, with athletes facing intense pressure from various sources. Understanding the specific types of interpersonal relationships that contribute to anxiety during these moments is crucial for improving performance.

### 3.1 Coach

The coach is one of the key players who influence the mental state of the player during a penalty shootout. The ways of influence are diverse, it could be the way the coach trains in general, the conscious or unconscious pressure on the athlete in response to the penalty shootout, or even the control of the specific way the player shoots the ball. Different types of coaches train their athletes in a way that affects their psychological state in normal times, leading to trait anxiety and ultimately sport burnout (Cho et al., 2019) and also to examine the medication effects of competitive trait anxiety on the relationship. A total of 368 collegiate athletes participated in the study, and their ages ranged from 20 to 26 years old (Mage = 21.21 years, SD = 1.07 years. High expectations as well as the pressure to fulfil the coach's demands can exacerbate the athlete's

anxiety.

In one of the studies, the pressure group took penalties in the presence of the head coach and two technicians (i.e., assistant coaches and physical trainers, who keep written records of the players' performances), and the results showed that the number of goals scored by the pressure group was lower than that of the no-pressure group. Considering the control condition again, the control or lack of control over the way the penalties were taken only had an effect on the goals scored by the pressure group (Navia et al., 2019). This demonstrates that the control of the coach over the player in a pressure situation affects the final performance of the penalty shot. Another study showed communication with the coach is also one of the stressors (Jordet & Elferink-Gemser, 2012). The presence of the coach and his/her feedback at critical moments can reduce or exacerbate anxiety, depending on the way they communicate. For example, positive reinforcement and calm instruction can reduce anxiety, whereas high-pressure demands can exacerbate it.

### 3.2 Teammate

Teammates are another source of anxiety. The desire not to let the team down, coupled with the fear of being blamed for a mistake, can put tremendous pressure on the athlete. Dynamics within the team, including trust, camaraderie, and expectations, can have an impact on an athlete's experience of anxiety.

A study by Kwansei Gakuin University highlighted how peer pressure in penalty shootouts can lead to an increase in state anxiety, especially when athletes are aware of the high stakes (Horikawa & Yagi, 2012). This was also confirmed in another study, where emotional contagion in penalty shootouts was highlighted (Moll et al., 2010). The study suggests that when a player successfully scores a penalty and celebrates energetically, this positive emotion can spread to teammates, thereby boosting the entire team's morale and performance.

Emotional support from teammates is also seen as one of the key factors influencing anxiety levels. One study interviewed eight penalty takers who took part in the Euro 2004 quarter-final penalty shootout. Players from the team that ultimately won the penalty shootout stood together throughout the match with their arms around each other's shoulders. Several interviewees from that team said they gave or received emotional support, which several felt was positive and enhanced the feeling of being a team. As for the team that lost in the penalty shootout, the players on that team stood scattered for most of the game. On this team, two respondents explicitly stated that there was less verbal communication. The researchers coded the players'

statements as stressors based on their facial expressions (Jordet & Elferink-Gemser, 2012).

### 3.3 Opponent

Opponents, particularly goalkeepers and opposing penalty kickers, play a significant role in influencing penalty kicking anxiety. In the penalty shootout scenario, it is mainly nonverbal cue that comes into play, such as body movements and facial expressions. The goalkeeper's strategies, such as gestures or movements intended to distract or intimidate, can exacerbate the kicker's anxiety, leading to impaired performance. The study highlights that the goalkeeper's cognitive abilities and his or her actions increase the kicker's state of anxiety during a penalty shootout, often leading to overthinking and altering their natural penalty kicking technique (Almeida et al., 2016). And another nonverbal cue is opponents' expressions were studied primarily, and it was shown that when opponents showed proud expressions, athletes displayed more negative emotions, lower confidence and lower performance expectations compared to neutral expressions (Furley et al., 2012). In addition, observing the success or failure of the opponent's front kicker can enhance or diminish a player's confidence. If the opposing kicker is successful, it adds pressure on the players behind them and increases their anxiety. In an interview with a penalty kicker, one participant noted that anxiety levels decreased because of the opposing team missing a field goal (Jordet & Elferink-Gemser, 2012). Another example that demonstrates very perfectly the strong psychological effect that opponents can have on players and ultimately the outcome is that in a penalty shootout, the team that kicks first will end up winning 60.5% of the time, rather than having the same chance of winning on both sides as we might have envisioned. When analysed further, we can see a subtle psychological change between rounds, i.e. when comparing the percentage of times the two teams end up winning the decider, the impact of scoring vs. not scoring increases with the number of rounds for both teams (Apesteguia & Palacios-Huerta, 2010)2010. Obviously, the team that kicks later is affected by the team that kicks first, and we can say that the interpersonal relationship with the opponent creates stress and anxiety for them.

### 3.4 Spectator and Media

Spectators can greatly affect anxiety levels during penalty shootouts. The presence of a large number of spectators, along with their reactions and expectations, can increase stress (Almeida et al., 2016). As mentioned earlier, Social Facilitation Theory suggests that athletes' performance may be affected by the presence of spectators, especially

in situations where the task is complex and the stakes are high, such as in penalty shootouts (Cottrell et al., 1968). The anticipation of judgement and fear of failure in front of a crowd can lead to increased anxiety and decreased performance.

According to research, strong reactions from spectators - both positive and negative - can exacerbate state anxiety in athletes, leading to physiological responses such as increased heart rate and muscle tension, which can affect motor control and decision-making in penalty shootouts. Exacerbated state anxiety may lead to athletes experiencing 'choking', i.e. not being able to perform tasks they would normally excel at under pressure, and Jordet et al. (2007) showed that players who perceived spectators to be under pressure were more likely to concede penalties. In addition, spectators might have good impact on player, some participants mentioned social support (e.g., 'The moment I started walking to the penalty spot, all the people said "Go for it."') (Jordet & Elferink-Gemser, 2012).

The role of the media in causing anxiety during penalty shootouts cannot be ignored. Athletes are often aware that their performance will be scrutinized by the media, which can amplify the pressure. Fear of negative media coverage or being scapegoated for a loss can increase an athlete's anxiety. In addition, the constant presence of cameras and the knowledge that millions of people are watching can lead to decreased self-consciousness and performance. In a statistically based study, researchers analysed data from penalty shootouts at three major tournaments (World Cup, Europa League and Copa America). The researcher benchmarked the importance of the major tournaments by comparing the number of people who watched them, and in the end the data proved that the World Cup, which was watched by the largest number of people, 1.1 billion (FIFA Marketing & TV, 2002), had the lowest success rate for penalties of all the tournaments (Jordet et al., 2007). In addition to analyses that address the importance of the tournament, there are also analyses that address individual players. Specifically, players who are publicly respected and have won prestigious soccer awards perform worse than other players in major soccer penalty kick shootouts. A further finding was that these superstars showed the greatest difference in performance when compared to players who achieved the same public status later in their careers. Therefore, the researchers concluded that these future-status players are likely to have the same skill level as current-status players, but with less psychological pressure from the public, i.e., less anxiety from interpersonal relationships, the players will perform better (Jordet, 2009). These studies above make a strong case that spectators and the media create anxiety in players and in turn affect their performance's.

## 4. Discussion

It is clear that the anxiety caused by various interpersonal relationships to athletes can ultimately affect their performance. This article brings together a variety of strong evidence to prove this point by synthesizing experiments, interviews, and analyses. Analysed from a variety of perspectives, we have subjective feelings from the players themselves, conclusions drawn from detailed analysis of free throw results, and objective data from controlled variable experiments.

Although in the detailed analysis, there were findings of conflicting views of the researchers after data analysis (Almeida et al., 2016), it is not possible to make a right or wrong distinction between the previous studies due to the different sources of data specifically analysed, and this thesis only centres on the research objectives at the beginning to make a core analysis.

Understanding the psychological dynamics of penalty shootouts can help coaches and players develop strategies to manage anxiety, potentially improving performance in high-pressure situations. Further research in this area could lead to more effective interventions and contribute to a deeper understanding of the psychological aspects of sports performance.

### 4.1 Limitations

Although it has been argued that a penalty shootout can be viewed as a randomised natural experiment; by randomising the treatment and control groups, the variables are all observable and the results of the task are all known immediately and unambiguously (Apesteguia & Palacios-Huerta, 2010)2010. However, the main variable of this study, the psychological state of the subjects, was not used as the main measured variable within the vast majority of the experiments or was not well measured. One of the main limitations of this study is the reliance on secondary data that may not fully capture the nuanced psychological states of players in penalty shootouts. The lack of direct psychological assessment of players is also a limiting factor, as the present study primarily inferred anxiety levels from performance outcomes and observed behaviours rather than measured psychological states. Given that emotions are vague and difficult to discern, future attempts could be made to use a more biological approach to measuring anxiety levels in athletes and, in time, take it a step further to find a direct relationship in the form of a self-report or questionnaire. Of course, the majority of authors list psychological factors as the main factor influencing the outcome of penalty shootouts.



## 4.2 Future Direction

Future research should aim to incorporate direct psychological assessments, such as self-reported anxiety levels or physiological measures, in order to gain a more comprehensive understanding of the role of anxiety in penalty shootouts. In addition, expanding the study to different leagues, genders, and age groups would provide a broader perspective on how interpersonal anxiety affects performance in different situations. Investigating the impact of interventions (e.g., psychological training or changing coaching strategies) on reducing anxiety in high-pressure situations is also a valuable area of research.

## 5. Conclusion

This study focuses on the effect of interpersonal anxiety on athletes' performance in a football penalty shootout. Through a review of existing literature, external factors arising from interpersonal relationships can directly or indirectly lead to elevated levels of anxiety. Elevated levels of anxiety may thus affect final performance in penalty shootouts but have different effects for different players. Different interpersonal relationships can lead to a variety of causes of anxiety, each of which is complex and potentially interactive. Through several experiments we found that anxiety arises naturally in individual-to-individual interactions, and the different experiments ultimately showed variations in the monitored results. However, it is clear that there are individual differences that lead to different levels of anxiety, and that each person's response to anxiety is more differentiated. All of these factors ultimately affect performance in penalty shootouts. By understanding these, this study suggests that coaches and sport psychologists pay attention to athletes' anxiety, especially in such a high-pressure scenario as a penalty shootout and make good psychological interventions for players to minimize anxiety. Further, the outcome of a penalty shootout may be more psychologically damaging and traumatic for the player and consequently affect performance down the road, and psychotherapy should be taken more seriously and used as an intervention than enhanced professional training.

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