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**High-Performance Athletes' Coping Strategies
and Attributions: A Behavioral Perspective**

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Doctoral Programme in Psychology

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and Attributions: A Behavioral Perspective**

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Doctor by the Universitat de les Illes Balears

“Cuando Newton propuso su teoría de la luz y de los colores en términos de longitudes de ondas después de haber descompuesto el haz luminoso con la ayuda de un prisma, el gran poeta alemán Goethe publicó una diatriba panfletaria contra la ciencia que quitaba toda poesía y encanto a los fenómenos que estudiaba; y argumentó, quejándose de ello, que, en adelante, una pareja de enamorados ya no podría extasiarse delante de la belleza de un arcoíris, por magnífico que fuese, bajo pretexto que los interesados sabrían que se trataba solamente de vulgares longitudes de ondas. Como si el conocimiento de un fenómeno pudiese quitarle su belleza!

Los enamorados en cuestión siguen viendo lo mismo que hubiesen visto sin los trabajos de Newton. El fenómeno no ha cambiado; es nuestra conceptualización del mismo que es diferente. Lo que sí quitó Newton fue la ignorancia de sus semejantes frente a tal fenómeno, y hay que ser un obscurantista empedernido para quejarse de ello. En cambio, con un conocimiento adecuado de la naturaleza de la luz (aunque la discusión sigue abierta respecto a su naturaleza ondulatoria o corpuscular), no sólo uno puede continuar extasiándose delante de un maravilloso arcoíris, sino que, además, se puede producir un rayo láser (cuyas múltiples y benéficas aplicaciones nadie discute), cosa impensable e imposible sin tal conocimiento.”

Esteve Freixa i Baqué

Dedicada a mis padres, mi modelo de perseverancia y sacrificio basado en el amor. A mis hermanos, las primeras fuentes de apoyo social que han caminado a mi lado desde que tengo recuerdos. Y a ella, por creer en mí, incluso cuando yo mismo había dejado de hacerlo. Gracias por su respaldo constante.

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Abstract

This thesis dissertation comprises three interrelated studies that collectively examine psychological variables related to the coping strategies used by athletes, both within and outside the field of sports.

The first study examines the coping strategies employed by athletes and their effectiveness in managing challenging circumstances during the confinement measures established due to the COVID-19 pandemic. A cross-cultural sample was obtained in collaboration with several sport psychology working groups from China, Mexico, Portugal, Russia, and Spain. A total of 310 high-level athletes (141 women) participated in the study. The mean age was 22.26 years-old ($SD=4.98$). A cross-sectional design and survey methodology was used to collect the psychological variables involved in the study. The data were analyzed using SPSS software. Drawing from Olmedilla and García-Mas' injury model, this study identifies sports participation as a potential protective factor against the impact of stressful circumstances.

The second study explores the unique perspectives of athletes on injuries and their recovery process, focusing on their attributions and coping strategies used during a period of substantial psychological impact. The sample consisted of 16 athletes (8 women) who had been through sport injury or sport-related illness that interrupted sport participation for at least one month. A qualitative methodology was developed and the interviews were carried out both in person and via Zoom platform. The interviews were recorded to be transcribed later with Google AI and the NVivo software was used to analyze the data. This investigation reports the most frequent attributions and coping strategies used, addressing the influence of the coaching staff support in an athlete's psychological response while navigating the injury process.

The third study evaluates a brief psychological intervention tailored to football coaches. The intervention aims to reduce potentially detrimental verbal responses and enhance the use of praise contingent with successful actions. The coaching staff members of 15 youth teams (ages 5 to 18 years old) from a Spanish football club were selected and trained in communication skills. A randomized control trial with delayed intervention experimental design was implemented. Stratified random assignment was applied taking into consideration the sports

category of coaching teams to control for age group. The intervention consisted of a group session with the coaching staff and an individualized session with each coaching team. The group session focused on improving coaches' communication skills and instruction delivery, particularly in response to both successes and mistakes of players during competition. In the individual session, coaches worked on self-awareness of their verbal response and received tailored communication strategies. The results showed a significant reduction in hostile feedback and verbal instructions during play, along with an increase in praise from the coaches, indicating the effectiveness of the personalized interventions.

These studies provide a behavioral approach to understanding the role of attributions, coping and perceived social support in athletes' psychological well-being, emphasizing the importance of tailored interventions to improve the context of high-performance in sports.

Resum

Aquesta tesi doctoral comprèn tres estudis interrelacionats que examinen col·lectivament variables psicològiques relacionades amb les estratègies d'afrontament utilitzades pels atletes, tant dins com fora de l'àmbit esportiu.

El primer estudi examina les estratègies d'afrontament emprades pels esportistes i la seva eficàcia en la gestió de circumstàncies difícils durant les mesures de confinament establertes a causa de la pandèmia de COVID-19. Es va obtenir una mostra transcultural en col·laboració amb diversos grups de treball de psicologia de l'esport de la Xina, Mèxic, Portugal, Rússia i Espanya. Van participar en l'estudi 310 esportistes d'alt nivell (141 dones). L'edat mitjana era de 22,26 anys ($DE=4,98$). Es va utilitzar un disseny transversal i una metodologia d'enquesta per a recollir les variables psicològiques implicades en l'estudi. Les dades es van analitzar mitjançant el programa SPSS. Partint del model de lesions de Olmedilla i García-Mas, aquest estudi identifica la participació esportiva com un potencial factor de protecció enfront de l'impacte de les circumstàncies estressants.

El segon estudi explora les perspectives úniques dels atletes sobre les lesions i el seu procés de recuperació, centrant-se en les seves atribucions i estratègies d'afrontament utilitzades durant un període d'impacte psicològic substancial. La mostra va consistir en 16 atletes (8 dones) que havien sofert una lesió esportiva o una malaltia relacionada amb l'esport que va interrompre la seva participació esportiva durant almenys un mes. Es va desenvolupar una metodologia qualitativa i les entrevistes es van realitzar tant en persona com a través de la plataforma Zoom. Les entrevistes van ser gravades per a ser transcrites posteriorment amb Google AI i es va utilitzar el programari NVivo per a analitzar les dades. Aquesta recerca il·lustra les atribucions més freqüents i les estratègies d'afrontament utilitzades, abordant la influència del suport del cos tècnic en la resposta psicològica de l'esportista mentre transita pel procés de lesió.

El tercer estudi avalua una breu intervenció psicològica adaptada als entrenadors de futbol. La intervenció pretén reduir les respostes verbals potencialment perjudicials i potenciar l'ús d'elogis contingents a les accions exitoses. Es va seleccionar als membres del cos tècnic de 15 equips en formació (de 5 a 18 anys) d'un club de futbol espanyol i se'ls va entrenar en habilitats

de comunicació. Es va aplicar un assaig controlat aleatoritzat amb disseny experimental d'intervenció diferida amb assignació aleatòria estratificada tenint en compte la categoria esportiva dels equips d'entrenadors per a controlar el grup d'edat. La intervenció va consistir en una sessió de grup amb el cos tècnic i una sessió individualitzada amb cada equip d'entrenadors. La sessió de grup es va centrar en millorar les habilitats de comunicació dels entrenadors i la impartició d'instruccions, especialment en resposta tant als èxits com als errors dels jugadors durant la competició. En la sessió individual, els entrenadors van treballar l'autoconsciència de la seva resposta verbal i van rebre estratègies de comunicació individualitzades. Els resultats van mostrar una reducció significativa dels comentaris hostils i les instruccions verbals durant el joc, juntament amb un augment dels elogis per part dels entrenadors, la qual cosa indica l'eficàcia de les intervencions personalitzades.

Aquests estudis proporcionen un enfocament conductual per a comprendre el paper de les atribucions, l'afrontament i el suport social percebut en el benestar psicològic dels esportistes, destacant la importància de les intervencions individualitzades per a millorar el context de l'alt rendiment en l'esport.

Resumen

Esta tesis doctoral comprende tres estudios interrelacionados que examinan colectivamente variables psicológicas relacionadas con las estrategias de afrontamiento utilizadas por los atletas, tanto dentro como fuera del ámbito deportivo.

El primer estudio examina las estrategias de afrontamiento empleadas por los deportistas y su eficacia en la gestión de circunstancias estresantes durante las medidas de confinamiento establecidas debido a la pandemia de COVID-19. Se obtuvo una muestra transcultural en colaboración con varios grupos de trabajo de psicología del deporte de China, México, Portugal, Rusia y España. Participaron en el estudio 310 deportistas de alto nivel (141 mujeres). La edad media era de 22,26 años ($DE=4,98$). Se utilizó un diseño transversal y una metodología de encuesta para recoger las variables psicológicas implicadas en el estudio. Los datos se analizaron mediante el programa SPSS. Partiendo del modelo de lesiones de Olmedilla y García-Mas, este estudio identifica la participación deportiva como un potencial factor de protección frente al impacto de eventos estresantes.

El segundo estudio explora las perspectivas únicas de los atletas sobre las lesiones y su proceso de recuperación, centrándose en sus atribuciones y estrategias de afrontamiento utilizadas durante un período de impacto psicológico relevante. La muestra consistió en 16 atletas (8 mujeres) que habían sufrido una lesión deportiva o una enfermedad relacionada con el deporte que interrumpió su participación deportiva durante al menos un mes. Se desarrolló una metodología cualitativa y las entrevistas se realizaron tanto en persona como a través de la plataforma Zoom. Las entrevistas fueron grabadas para ser transcritas posteriormente con Google AI y se utilizó el software NVivo para analizar los datos. Esta investigación reporta las atribuciones más frecuentes y las estrategias de afrontamiento utilizadas, abordando la influencia del apoyo del cuerpo técnico en la respuesta psicológica del deportista mientras transita por el proceso de lesión.

El tercer estudio evalúa una breve intervención psicológica adaptada a los entrenadores de fútbol. La intervención pretende reducir las respuestas verbales potencialmente perjudiciales y potenciar el uso de elogios contingentes a las acciones exitosas. Se seleccionó a los miembros

del cuerpo técnico de 15 equipos juveniles (de 5 a 18 años) de un club de fútbol español y se les entrenó en habilidades de comunicación. Se aplicó un ensayo controlado aleatorizado con diseño experimental de intervención tardía con asignación aleatoria estratificada teniendo en cuenta la categoría deportiva de los equipos de entrenadores para controlar el grupo de edad. La intervención consistió en una sesión grupal con el cuerpo técnico y una sesión individualizada con cada equipo de entrenadores. La sesión grupal se centró en mejorar las habilidades de comunicación de los entrenadores y la impartición de instrucciones, especialmente en respuesta tanto a los éxitos como a los errores de los jugadores durante la competición. En la sesión individual, los entrenadores trabajaron la autoconciencia de su respuesta verbal y recibieron estrategias de comunicación individualizadas. Los resultados mostraron una reducción significativa de los comentarios hostiles y las instrucciones verbales durante el juego, junto con un aumento de los elogios por parte de los entrenadores, lo que indica la eficacia de las intervenciones personalizadas.

Estos estudios proporcionan un enfoque conductual para comprender el papel de las atribuciones, el afrontamiento y el apoyo social percibido en el bienestar psicológico de los deportistas, destacando la importancia de las intervenciones individualizadas para mejorar el contexto del alto rendimiento en el deporte.

Introduction

Participating in sports can provide physical and psychological benefits, such as fitness improvement and peer socialization, while facilitating an appropriate context for the promotion of physical activity (Bailey, 2006; Tamminen et al., 2020; Teychenne et al., 2020). The aforementioned health outcomes, among others, apply for both adults and children (Warburton and Bredin, 2017), especially when physical activity takes place in a team sport setting (Eime et al., 2013). When it comes to competitive environments, experienced athletes have often been associated with the “iceberg profile” (see Figure 1), depicted in the Profiles of Mood States (POMS), and characterized by high levels of vigor and low levels of stress, depression, anger, and fatigue (Beedie et al., 2000; McNair et al., 1971). The “iceberg profile” gets its name due to its visual resemblance to the shape of an iceberg, with the high vigor score above the waterline and the low scores for the other psychological factors below the waterline. This profile has been considered a predictor of good mental health and is linked to effective physical performance, not without its critics (Jekauc et al., 2021; Rowley et al., 1995).

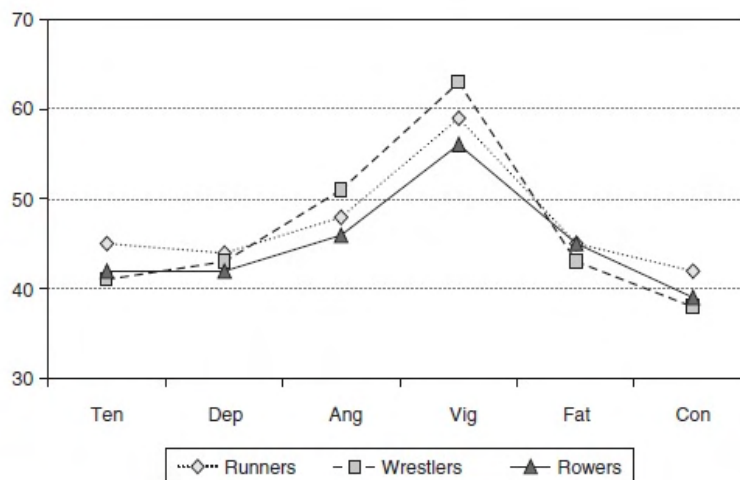


Figure 1. Example of the Profile of Mood States Iceberg Profiles. From “Selected psychological factors limiting performance: A mental health model”, by W. P. Morgan, 1985, *Limits of Human Performance*, p. 79.

It is reasonable to assume that, given the extent of the scientific evidence confirming the benefits of physical activity (Malm et al., 2019), those involved in the sports field would be aware of best practices to maximize these positive aspects. Yet, recent research suggests that more experimental and long-term data is needed to precisely identify the psychological processes behind the beneficial impacts of sports on quality of life (Eather et al., 2023; Eime et

al., 2013). Despite the evidence of the impact of stress on performance (Fletcher et al., 2012; Lazarus, 1999; Reardon et al., 2019), athletes have experienced a growing emphasis on competition outcomes, frequently motivated by objectives of elite-level results, collegiate scholarships, national and international team membership, and securing professional contracts that translates into an increased pressure to deliver competitive results (Zhou and Zhou, 2019). Consequently, athletes are prone to experience stress to perform at their peak (Low et al., 2022). In the case of children and adolescents, contextual demands usually derive in committing to high-intensity training schedules at a young age (Von Rosen et al., 2018). Since the number of athletes who reach professional levels is rather small, fostering greater satisfaction and encouraging the promotion of the psychological skills of participation in sports practice or physical activity throughout childhood and adulthood has been considered a priority in the sport psychology field (Cruz et al., 2016).

Several of the frequent stressors that athletes experience can have a negative impact on both their performance and overall quality of life. Time constraints (Purcell et al., 2019), dual-career responsibilities (Li et al., 2022), competitive and organizational factors (Rodríguez et al., 2017; Tamminen et al., 2018), fear of negative evaluation (Gorczyński et al., 2017; Ridgers et al., 2007), sport injuries (Olmedilla-Zafra et al., 2017), and several additional sport-related struggles (Moore et al., 2017; Hsu and Tseng, 2022) are among the most frequent contributors to stress in competitive sports. Therefore, coping strategies are essential in the behavioral repertoire of athletes in order to manage these kinds of setbacks. Coping strategies are strongly associated with a range of positive outcomes, including better resilience, improved sporting performance, and enhanced well-being (Nicholls et al., 2016a). Recent research in sports psychology has highlighted the effectiveness of coping training in handling stressors perceived as challenging (Reyes-Bossio et al., 2022), which has been thoroughly documented among elite athletes (Haney and Long, 1995; Levy et al., 2010; Nicholls and Polman, 2007). Effective communication, meticulous preparation, strategic planning, seeking social support, emotional calming, and engaging in appropriate self-talk are some of the coping strategies that athletes employ (Crocker et al., 2015). However, not all coping strategies are beneficial in the long run, as in the case of engaging in behavioral risk to cope with aversive

situations (Wiese-Bjornstal, 2010), such as the recovery process of sport injuries (Deroche et al., 2011).

Considering the role of coping strategies in high-demand environments, it is crucial to examine the specific elements of the sporting context that affect athletes (Mosewich et al., 2014) from a qualitative perspective to advance the awareness and implications of these influences (Eather et al., 2023; Eime et al., 2013). Qualitative research allows to identify the most effective coping mechanisms while considering individual circumstances and stressors, as well as potential enablers and barriers to successful interventions in sports (McCall et al., 2023; Ravn, 2021). Additionally, qualitative research provides valuable points of view from athletes themselves, leading to a greater understanding of the psychological processes and factors influencing performance and healthy sport experiences that quantitative research might not be able to reach (Evans et al., 2021). Through this methodology, researchers can address the unique characteristics of athletes competing at different levels and in a diverse range of sports, to successfully translate their findings into applicable training programs that benefit coaches and athletes in their goal achievement.

This doctoral thesis aims to expand on the current scientific knowledge regarding the connection between the needs and use of coping strategies of athletes and the learning processes of successful behavioral patterns in the context of competitive sports. Exploring these psychological factors, including the antecedents and consequents of the coping strategies involved in the different challenges that athletes face, could provide specific guidelines and standards of intervention to improve the overall experience of sport participants. In the upcoming sections, this dissertation will discuss the central themes and theories that form the foundation of the research, examining how they interact and their implications for the overall study.

Sport injuries and other common setbacks in sports practice

Setbacks, such as poor performance, injury, or unplanned outcomes, are part of the nature of practicing sports, regardless the level of competition, and involve a substantial number of organizational stressors (Arnold and Fletcher, 2012). These stressors interfere with the goals

and aspirations of athletes, requiring appropriate coping mechanisms to deal with the psychological response elicited by those experiences (Gouttebarga et al., 2019). According to Lazarus and Folkman (1984), the perceived imbalance between the demands of the context and the resources available can cause stress. Athletes competing at elite levels need to constantly adapt to cope with the stress associated with pursuing their personal goals. Due to the complex nature of high-performance, athletes often struggle with coping, particularly when it involves unwanted results (Rumbold et al., 2012), handling dual careers (Pavlidis and Gargalianos, 2014), perfectionism and overtraining (Madigan et al., 2017), poor performance (Massey and Whitley, 2020), or injury (Olmedilla-Zafra et al., 2022). These struggles might lead to suboptimal performance, aversive thoughts and feelings, negative forms of coping, and sport dropout (Crane and Temple, 2015; Thelwell et al., 2007). There is strong evidence supporting the psychological harm of significant exposure to lifetime stressors and its impact on performance and wellbeing of athletes (McLoughlin et al., 2022). Performers from different disciplines, not only athletes, experience frequent anxiety regarding their executions and results (Ford et al., 2017), although the relationship between anxiety and performance remains unclear (Núñez-Prats and Garcia-Mas, 2017). Understanding how athletes perceive and experience setbacks can help address the issues they face and explore effective and ineffective coping strategies, including less conventional approaches.

Sport injuries are among the most prevalent setbacks that athletes encounter during their careers (Moseid et al., 2018; Purcell et al., 2019), and a frequent source of aversive psychological responses (Heaney, 2018). Therefore, developing appropriate resources to help athletes face the different stages of sport injury is essential to promote successful recovery and return to sport practice (Ivarsson et al., 2016). The study of the psychological aspects of sport injuries has experienced exponential growth over the past decades (Gledhill et al., 2018; Palmi and Solé, 2014). The fundamental research lines include exploring the relationship between psychological factors and athletes' vulnerability to injuries, studying how athletes perceive the role of psychological factors that might increase injury occurrence, investigating the influence of athletes' injury history on a wide range of psychological variables, the analysis of psychological responses to injuries, and the evaluation of psychological intervention programs implemented for both prevention and rehabilitation (Arderne et al., 2016; Brewer and Redmond, 2017; Forsdyke

et al., 2016). Olmedilla and García-Mas (2009) proposed a comprehensive psychological model of sport injuries with three axes: causal, temporal, and conceptual (see Figure 2). These axes focus on the key psychological and situational variables involved in sport injury. The causal axis categorizes variables as antecedents or consequences of sport injuries. Analyzing the factors preceding an injury can provide insights on their occurrence and prevention. The temporal axis organizes variables based on their relevance at different stages of an injury, addressing the different stages of the sport injury and not limiting its study to a specific moment in time. The conceptual axis, often depicted in the shape of a “galaxy of factors”, organizes the psychological variables and concepts related to sport injuries based on their multidirectional relationship. These three axes offer methodological recommendations for conducting studies, considerations for practical application and intervention, and the identification of research objectives to advance in the field of sport injury. Adopting such comprehensive models might provide a broader perspective on the field, recognition of its shortcomings, and facilitate theoretically informed analysis of research outcomes (Derman et al., 2020; Dijkstra et al., 2017).

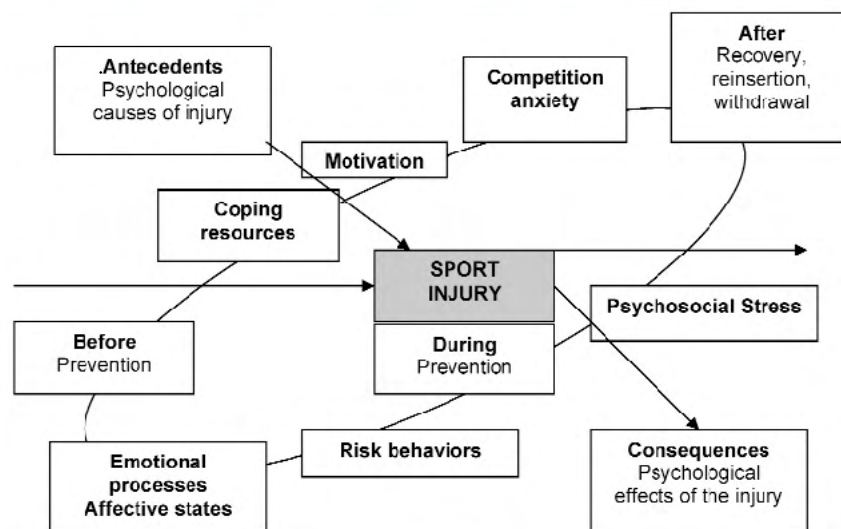


Figure 2. Example of the Global Model of Athletic Injuries. Adapted from “El modelo global psicológico de las lesiones deportivas”, by Olmedilla and García-Mas, 2009, *Acción Psicológica*, p. 82. (<https://doi.org/10.5944/ap.6.2.223>).

Combining these comprehensive approaches with qualitative studies on the psychosocial responses of injured athletes during rehabilitation might improve the knowledge of the interaction between physical and psychosocial factors, contributing to the enhancement of the care provided by the coaching staff and, ultimately, fostering prevention (Clement et al., 2015).

Attributions and coping strategies in sports

Stress can be understood as a response to an adaptation process where individuals are forced to continually adjust to changing circumstances and develop new resources to handle future demands. As defined by Tamminen et al. (2014), adaptation in sport involves athletes' appraisal of perceived stressors, their cognitive, emotional, behavioral, and physiological responses, and adjustment to their context through self-regulatory processes, rational, planned behaviors, and coping responses. Therefore, coping is a complex process between the athlete and the environment that involves evaluating stressors, decision-making, future expectancies, and action that has been conceptualized mainly from the standpoint of Lazarus and Folkman (1984) within the cognitive-motivational-relational theory (Ruiz et al., 2021; Uphill and Jones, 2007). According to this model, when an individual faces any given setback, two assessments (i.e., appraisals) take place. The assessment of the stressors and expectations of the situation is considered primary appraisal, while secondary appraisal involves the consideration of coping strategies (Lazarus, 2000). This process of situation assessment results in the attributions that an athlete develops to understand their life events and generalize to respond in future situations. Therefore, attributions are defined as explanations that help individuals understand the causes of events and develop explanations for their life events, which in the sport context is frequently related to performance (Murray et al., 2019).

Conventionally, attributions can be classified based on locus of causality, controllability, stability, globality, and universality (Tenenbaum and Furst, 1986). Locus of causality refers to whether the cause of the event is internal or external, such as when an athlete attributes a poor performance to one's own fault versus bad luck, while controllability refers to the individual's ability to handle the situation. The remaining dimensions relate to the generalizability of the cause, investigating whether the situation extends over time, contexts, and other individuals (Roesch and Weiner, 2001). Locus of causality and controllability are difficult to distinguish due to the overlap between where a cause lies and by whom it is controlled and the positive correlation between internal locus of causality and sense of controllability (Rees et al., 2005). Attributions to external, unstable, and controllable aspects of the situation are recommended, rather than attributing failures to internal, unstable, and uncontrollable causes (Harvey and Martinko, 2009). However, stable and uncontrollable attributions can be particularly unhelpful

for performance and well-being, leading to lowered self-efficacy, self-confidence and a greater probability of unsuccessful recovery (Brewer, 1999; Cruwys et al., 2015; Murray et al., 2020). In fact, an important part of the work of sport psychologists involves assisting athletes in reevaluating situations to foster more effective rule-governed behavior, potentially resulting in improved decision-making and use of helpful coping strategies (Oblinger-Peters and Krenn, 2020).

According to cognitive-motivational-relational theoretical framework applied to sports, a conceptual definition of coping should include all effortful behaviors an athlete employs to manage the constant perceived changes and adapt to challenges (Evans et al., 2014). Thus, coping could be understood as an adaptive response to setbacks which can involve multiple stressors of varying intensity, frequency, and duration, in several contexts, including sport settings, across different periods of time, either expected or unexpected (Crocker et al., 2015). Coping will also be impacted by the attributions made of the situation and the dispositional variables determined by cultural beliefs, social expectations, and gender roles, among others (Lazarus, 1993). As a result, athletes interact with the complexity of their environment with a wide range of coping actions. However, coping is not only a response to difficulties and aversive emotional response; it also involves proactive behaviors to facilitate personal growth (Liberal et al., 2014; Wadey et al., 2013). Studying the linkage between social contextual factors (i.e., availability of social support, coach-athlete relationships) and how athletes cope and self-regulate has been a recurrent topic in the sport psychology literature (Li et al., 2019; Nicholls and Polman, 2007; Secades et al., 2016). However, this line of research has predominantly focused on the athlete's individual level of coping, primarily mediated by their attributions of the stressful situation.

Since coping strategies are essential for athletes to manage stress and facilitate resilience, researchers attempted to classify them to examine the potential antecedents and consequences of adaptation to the demands of competitive sports (Gaudreau and Blondin, 2004; Martinent and Decret, 2015; Tamminen and Holt, 2010). There are several classification systems, ranging from micro-analytical to macro-analytical, developed in social and clinical psychology (Carver et al., 1989). Micro-analytic approaches identify specific types of coping strategies, such as

control of activation, turning to religion, increasing effort, problem-solving, self-talk, learning reflection, seeking social support, visualization, planning or setting goals, relaxation, analysis of the situation, reappraisal, mental and behavioral withdrawal, acceptance, adherence to routines, wishful thinking, humor, resignation, regulating emotions, and quitting competition activities (Allen et al., 2011; Kim and Duda, 2003; Mosewich et al., 2014). Macro-analytic approaches group similar coping strategies together, categorizing them into various functions such as problem-focused and emotion-focused coping (Skinner et al., 2003). Problem-focused coping involves behavioral efforts, internalized or externalized, to change environmental demands or actions, while emotion-focused coping involves strategies to regulate the emotional response (Roesch and Weiner, 2001). Avoidance coping involves actively not dealing with stressful situations, traditionally considered ineffective in the sport setting (Rogowska et al., 2022). Research shows that problem-focused strategies improve athletic performance and athletes find them effective to manage non-sport-related stressors (Szczyńska et al., 2021). The specific approach taken to classify coping is often shaped by the theoretical position, impacting the measurement procedures and data analysis and interpretation used in sport coping research (Stanisławski, 2016).

Social support deserves special attention due to its significant role moderating the effects of stressors on performance, recovery, and other psychological outcomes related to sports by redefining challenges, threats and strengthening an athlete's perceived control to cope with the situation (Dohlsten et al., 2020; Li et al., 2020). Social support can be understood as an interaction between individuals with the goal to enhance their well-being that includes functional aspects like the impact of support exchanges, structural aspects like support networks, and perceptual aspects like support appraisal (Bianco, 2001). Research in the sport psychology field has focused on the functional aspects and perceived availability of support, which are more relevant to outcome variables such as performance and well-being than the characteristics of the support received (Katagami and Tsuchiya, 2016). The collective findings from recent and classic research indicate that social support plays a crucial role in influencing athletes' attribution and coping mechanisms, impacting both their performance and overall well-being (Meijen et al., 2020). Moreover, social support has been shown to positively affect treatment adherence and rehabilitation outcomes among athletes (Yang et al., 2014). However,

the characteristics of the social support an athlete might need are contingent upon the unique circumstances, the athlete's individual perception of the situation, and the nature of the stressors involved (Knight et al., 2018). In the domain of sports injuries, variables such as the injury's severity and the stage of the recovery process should be considered (Quarrie et al., 2001). It is essential to assess the effectiveness of social support in relation to the athlete's satisfaction with the support received, as excessive or inadequate support can prove equally detrimental as a lack of support (Clement and Shannon, 2011; Bianco et al., 1999).

The impact of coaching staff in athlete coping

As Staff et al. concluded in their study (2017), “coping rarely takes place in a social vacuum”. Their qualitative analysis of interviews with coaches and athletes revealed that a constructive coach-athlete relationship protects athletes from the stressors inherent in the sport context. This form of social support, often referred in the literature as dyadic coping, accentuates the critical role that the coaching staff plays in the athletes’ ability to deal with setbacks. In addition, the verbal responses from coaches, including non-verbal and paraverbal communication, are shown to significantly influence attributions and coping mechanisms of athletes (Nicholls and Perry, 2016). Given the literature’s emphasis on the coaching staff role in fostering athlete adaptation to the diverse challenges in their sport career and personal development, it makes sense to bring awareness on the psychological factors involved in performance and well-being among sport institutions and stakeholders. Besides, collaborating closely with coaches to help them identify and disseminate awareness of their own coping mechanisms and communication styles, as well as properly identifying the functions beneath their coaching behavioral patterns, could prove beneficial for both coaches and their athletes (Nicholls et al., 2016b). Expanding on this notion and considering the continuous interaction between coaching staff and athletes, psychological interventions that focus on enhancing coaching behaviors are deemed relevant.

The Individualized Counseling Program for Coaches (known as PAPE for their initials in Spanish) is a psychological intervention program developed by the Sports Psychology Study Group (GEPE) at the Autonomous University of Barcelona. This program serves a dual purpose: it encourages desirable changes in a coach's behavior and heightens their awareness of how their behavior impacts players and the coach-player relationship (Sousa et al., 2007). The PAPE is

built upon Coach Effectiveness Training (CET), a framework created by Smith, Smoll, and Curtis, drawing from Bandura's Social Theory to offer specialized guidance on the communication style of the coaching staff (Smith et al., 1979; Sousa et al., 2006). CET interventions emphasize on personal effort and growth rather than competitive results, reducing fear of failure and the anticipation of negative social evaluation in the sport practice (Cruz et al., 2001; Smith et al., 1995). The program's primary objective is to provide personalized interventions that cater to each coach's specific needs while respecting their individual coaching style (Sousa, 2007). Throughout the implementation of the program, a sports psychologist collaborates with the coach, engaging in discussions about the behaviors that need to be maintained, reduced, or established. This process is supported by recorded data from matches and training sessions (Cruz, 2010). Notably, PAPE distinguishes itself from CET by incorporating individualized interventions, recognizing that each coach possesses unique areas for improvement. Consequently, the application of PAPE has shown superior outcomes compared to other programs that take a more generalized approach (Cruz, 2010).

The impact of coaching on athletes is significant, with recent studies suggesting that coaches that involve athletes in goal setting, consider their perspectives, communicate expectations clearly, support an autonomous learning experience, and show genuine interest in their lives contribute to their well-being and foster better relationships than those evoking more controlling behaviors (Felton and Jowett, 2013; Kim et al., 2020). Coaches can cultivate positive relationships with their athletes by engaging them intellectually, emphasizing their strengths, and being aware of their psychological responses, thus acting as role models of prosocial behavior (Vella et al., 2013). The engagement and nurturing of these positive interactions translates into an increase of satisfaction with sport practice, improved self-esteem, resilience and emotional regulation, and a reduction of competitive anxiety (Ledochowski et al., 2012; Trigueros et al., 2019).

Objectives

This dissertation involves three distinct studies related to the aforementioned topics. The first study examines the coping mechanisms applied by athletes and assesses their perceived usefulness in managing potential adverse emotional states in the context of the COVID-19

pandemic. The second study aims to gain insights into athletes' perspectives on injuries and their subsequent recovery process, focusing on their attributions and coping strategies during a period of significant psychological impact. The third study evaluates the effectiveness of a brief psychological intervention designed for football coaches, aiming to reduce potentially harmful verbal responses and increasing the use of positive feedback.

Methods

In this section, a summary of the methods of the three studies is presented.

Participants

In article 1 an incidental sampling was carried out. A cross-cultural sample was obtained in collaboration with several sport psychology working groups from China, Mexico, Portugal, Russia, and Spain. A total of 310 high-level athletes (141 women) participated in the study. The mean age was 22.26 years-old ($SD=4.98$).

The sample for article 2 consisted of 16 athletes (8 women) who had been through sport injury or sport-related illness that interrupted sport participation for at least one month. Given the characteristics of the object of study, the samples in the three articles were selected by non-random methods.

In article 3, the coaching staff members of 15 youth teams (ages 56 to 18 years old) from a Spanish football club were selected and trained in communication skills.

Instruments

Quantitative (survey) and qualitative (semi-structured interview) methods of data collection have been implemented in this work. In addition, a systematic observation was carried out. The following is a summary of the tools used, which can be consulted in detail in each of the published articles.

In article 1, an *ad hoc* survey was created, based on the injury protocol (Olmedilla et al., 2006; Olmedilla et al., 2017) used in the Murcia High-Performance Center. Apart from sociodemographic, personal, and sports data, the survey included the following questionnaires:

- The Spanish version of the Multidimensional Perfectionism Scale [FMPS; (Carrasco et al., 2010)], adapted from the original FMPS (Frost et al., 1990), provides four subscales for a multidimensional assessment of perfectionism: Concern over Mistakes, Personal Standards, Parental Expectations, and Organization. The scale showed satisfactory reliability (Cronbach's α 's = 0.87). The 35-item questionnaire is answered on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree); higher points show higher perfectionism while lower points indicate otherwise.
- The State-Trait Anxiety Inventory [STAI-T; (Guillen-Riquelme and Buena-Casal, 2015)], Spanish version, adapted from the original STAI-T (Spielberger et al., 1970), was used for the evaluation of competition anxiety (it has 20 items for assessing trait anxiety and 20 items for state anxiety). All items are rated on a four-point scale from 0 (hardly ever) to 3 (almost always). Higher scores indicate greater anxiety. The scale showed Cronbach's α 's = 0.93.
- The short version of Depression, Anxiety, and Stress Scales [DASS-21; (Lovibond and Lovibond, 1995)], adapted in Spanish (Fonseca-Pedrero et al., 2010), was used to measure common symptoms of depression, anxiety, and stress, each of them containing seven items. Each item is scored on a 4-point scale from 0 (Does not apply to me at all) to 3 (Totally applies to me, or most of the time). The scale showed Cronbach's α 's = 0.81.
- The Profile of Mood States (McNair et al., 1971) was used in its Spanish version (Fuentes et al., 1995). The short scale contains 29 items answered on a five-point scale from 0 (nothing) to 4 (very much) which details five mood states: tension (α = 0.83), anger (α = 0.85), vigor (α = 0.83), fatigue (α = 0.82), and depression (α = 0.78).
- The Approach to Coping in Sport Questionnaire [ACSQ-1; (Kim, 1997,1999)] was used in its Spanish version (Kim et al., 2003). This scale contains 28 items answered in Likert-type form from 1 (never) to 5 (always) and aims to find out how often athletes use certain

coping strategies in competitive situations. It assesses five dimensions of coping: emotional calming, active planning/cognitive restructuring, mental withdrawal, seeking social support, and behavioral risk. Internal consistency coefficient was acceptable ($\alpha > 0.7$).

- A two-item questionnaire, created ad hoc, based on the Sports Sleep Questionnaire [CSD in Spanish; (Garcia-Mas et al., 2003)] was used to assess the number of sleep hours and the perceived quality of sleep (measured using a 5-point Likert-type scale from “very bad” to “very good”).

In article 2, a semi-structured interview was developed based on theoretical frameworks related to attributional process and coping strategies. All athletes were asked to state their gender, sport discipline and competition level, history of injury, diagnosis of the high impact injury or illness experience discussed, the severity of their injury or illness, and current state of their injury. Following the demographics, athletes were asked open-ended questions to allow them to express their experiences with minimal direction from the interviewer.

In article 3, the Coaching Behavior Assessment System (CBAS) by Smith et al. (1977), which had previously been adapted to a Spanish version by Conde et al. (2010), was modified to observe and categorize coach instructions and measure nine variables: Praise Contingent with Successful Action, Question Contingent with Successful Action, Mistake-Contingent Encouragement, Mistake-Contingent Instruction, Hostile Feedback, Mistake-Contingent Question, Technical/Tactical Instruction with Ball Out of Play, Technical/Tactical Instruction with Ball in Play and Complaining to Referee.

Procedure

The studies were approved by the Ethical Committees of the University of Trás-os-Montes e Alto Douro (UTAD, Portugal) (code 23/DOC20/CE/UTAD (27/06/2018)) and the University of the Balearic Islands (code 328CER23), and all studies were conducted in accordance with the Helsinki Agreement protocol. All participants agreed to participate in the study voluntarily and signed the confidentiality agreement.

The first study used a cross-sectional design and survey methodology to collect information. The online tool Google Forms was used via online messaging platforms and email participants to answer the survey. The athletes answered the psychological protocol mentioned above throughout the month of April 2020. The data were analyzed using SPSS software.

In article 2, a qualitative interview methodology was developed based on a phenomenological perspective. The interviews were carried out in person and through the Zoom telematics platform (Zoom Video Communications, 2022). The interviews were recorded to be transcribed later with Google AI (Google, 2022). NVivo software was used to analyze the data.

In the third article, an experimental design was implemented (randomized control trial with delayed intervention). Stratified random assignment was applied taking into consideration the sports category of coaching teams to control for age group. The pre-intervention assessment consisted of systematic observation and audio recording of coaches' communication for a 45-minute training session and one half of a competition match. The intervention consisted of a two-hour group session and an hour-long individual feedback session. The group discussion introduced the role of the coach and their communication in the players' personal and athletic development, as well as the potential functions of the observed variables, along with the relevance and applicability of each type of coaching instruction observed. The content of the group session included behavioral guidelines and strategies for enhancing communication skills, with a primary emphasis on responses that emerge after successes and failures to foster a supportive learning environment.

The individual session consisted of a self-confrontational interview to explore the verbal responses of each coach. The main goal was to enhance self-awareness of coaches' behaviors by analyzing audio clips and providing communication strategies to achieve their coaching goals. The sport psychologist presented the data in visual format and a comparison to the sample's average. Behavioral intervention techniques, including modeling and shaping, were applied. The data analysis was conducted using the open-source software Jamovi.

Articles that comprise this thesis dissertation

Article 1. Leguizamo F, Olmedilla A, Núñez A, Verdaguer FJP, Gómez-Espejo V, Ruiz-Barquín R and Garcia-Mas A (2021). Personality, Coping Strategies, and Mental Health in High-Performance Athletes During Confinement Derived From the COVID-19 Pandemic. *Frontiers in Public Health*, 8:561198. DOI: 10.3389/fpubh.2020.561198

3.8 Impact Factor

4.5 CiteScore

Q1

Article 2. Leguizamo F, Núñez A, Gervilla E, Olmedilla A and Garcia-Mas A (2023). Exploring Attributional and Coping Strategies in Competitive Injured Athletes: A Qualitative Approach. *Frontiers in Psychology*, 14. DOI: 10.3389/fpsyg.2023.1287951

5.2 Impact Factor

3.8 CiteScore

Q1

Article 3. Leguizamo F, Núñez A, Gervilla E, Llabrés J, Garcia-Mas A (2023). Effectiveness of a Program to Improve the Verbal Response of Football Coaches: A Delayed-Intervention Experimental Design. *Retos*, 51, 657-665. DOI: 47197/retos.v51.101049

0.319 Impact Factor

3.1 CiteScore

Q2

Discussion

The three scientific articles presented in this dissertation were designed with the aim of examining the impact of intense stressors, whether arising from situations like the strict lockdown measures established during the COVID-19 pandemic or severe sport injuries. Exploring the role of attributions and coping mechanisms in the psychological well-being of high-performance athletes during these unique and challenging circumstances might shed light on the nature of the processes and factors involved. By synthesizing these studies, common themes and interrelated elements emerge, providing valuable insights into the well-being and performance of athletes.

In the first article, the analysis of the emotional response and coping strategies among high-performance athletes in the context of the COVID-19 pandemic revealed significant negative correlations between these strategies and aversive emotional states categorized by the predominant literature as depression, stress, anxiety, and fatigue (Iancheva et al., 2020; Jaenes et al., 2021). The clinical indicators of psychological issues in the studied sample of athletes showed values below the pathological threshold. In line with previous studies, the skills and behavioral repertoire of high-performance athletes, such as dedication to excellence or adherence to rigorous training schedules, might play a role in the effectiveness of coping with setbacks (Hanton et al., 2013; Mosewich et al., 2014). Therefore, and according to the literature, stress management could act as a moderating factor in the form of coping strategies (Kurimay et al., 2017). Athletes who employed strategies like emotional calming and seeking social support seem to have mitigated the adverse psychological impact of demanding circumstances. These findings underline the importance of implementing psychological interventions to enhance athletes' coping mechanisms, particularly during challenging periods.

On the flip side of the same coin, while these environments foster high-level commitment, they might also cultivate low tolerance for errors and inadequate stress-management mechanisms, as observed in athletes employing behavioral risk or avoidance strategies (Carson and Polman, 2009). These kinds of coping mechanisms can potentially hinder both an athlete's performance and their well-being in the long run (Rumbold et al., 2012). It is worth noting, as highlighted by Gorczynski et al. (2017), that high-performance athletes report experiencing depressive symptoms at a similar rate to individuals not involved in sports. Consequently, the assumption that sport practice automatically provide mental

health benefits should be reconsidered. Factors like the pressure exerted by the competition and the sport organization, coach-athlete relationships, injuries, and the lack of enjoyment in competition and training are key contributors to sport abandonment (Marracho et al., 2023; Núñez-Aguilar et al., 2023; Witt and Dangi, 2018). Therefore, the design of interventions oriented to improving coping skills should steer away from one-size-fits-all approaches. Coping could be understood as an adaptation to the context, taking into consideration the individual characteristics and specific circumstances of each athlete. Due to the variations in athletes' attributions, coping skills, and responses to stressors, what works for one athlete may not necessarily be suitable for another. Hence, preventive programs should prioritize the acknowledgment of the unique needs and learning history of athletes, ensuring that the coping strategies trained are both relevant and effective. By tailoring interventions to each athlete's unique behavioral repertoire and the specific circumstances they face, it becomes possible to provide more precise and meaningful assistance.

Athletes frequently encounter inevitable setbacks and challenges, such as injuries and illnesses, which can significantly affect their careers and lead to adjustments in their interactions and behavioral repertoire (e.g., Russell et al., 2017). Thus, the exploration of individualized experiences of athletes who face the process of injury towards recovery provided insights to the nature of their unique circumstances due to their learning history, sport discipline, injury severity, attributions, and psychosocial context, among other factors. Consistent with prior studies, severe injuries requiring prolonged rehabilitation periods can lead to intense adverse experiences, including disruption of the athletic career, aversive mood states, deterioration of social relationships, the establishment of unhelpful rules of behavior, irreversible physical impairments, and, in some cases, the decision to quit the sport (for a review, see Forsdyke et al., 2016). A series of stress management interventions demonstrated better performance outcomes and diminished stress responses in sport participants who received reappraisal instructions (Holt and Dunn, 2004; Liu et al., 2019; Rumbold et al., 2012).

The attributions an athlete makes regarding the cause of their injury significantly influence their recovery process and the coping strategies they employ. For instance, athletes who believe they could have prevented their injuries reported some degree of control over the circumstances of the sport injury. In the case of athletes who reported relief from the

constraints and pressures from competitive sports, a similar pattern to what some athletes encountered during the COVID-19 pandemic can be identified, partially explaining the results of the first study. The coping mechanisms adopted during the recovery process, including cognitive restructuring, emotional regulation strategies, and seeking social support, seem to play a pivotal role in the athlete's progression back to training and competition. Both problem-focused and emotion-focused coping mechanisms play a critical role in the recovery process following a sports injury (Brewer, 2017). Athletes' attributions and coping strategies can significantly influence their responses in favor or against recovery. Studying athletes' emotional responses to injuries and implementing appropriate coping techniques might enhance recovery and return to sports activities (Smith et al., 1990). From a behavioral perspective, cognitive restructuring can be understood as the shaping and reinforcement of more adaptive verbalizations to describe the causes and consequences of the sport injury (Froxán, 2020). Therefore, attributions and coping mechanisms in athletes can be modified through reinforcement of successive approximations of “rational” beliefs or rules of behavior, punishing or extinguishing the “irrational” ones, and redirecting efforts to actions that increase the probability of successful outcomes.

Since behavioral rules can be learned and transmitted through modeling and observation as well, it becomes paramount to develop comprehensive psychological interventions that address a sensible use of language in delicate areas of concern for athletes. Congruent with previous research, our qualitative exploration into athletes' experiences revealed misconceptions related to medication consumption, psychological support, and common myths in sport performance that might predispose athletes to behavioral risk and injury (Arvinen-Barrow et al., 2014; Brewer et al., 1994; Renton et al., 2021; Wiese-Bjornstal, 2010). In light of these findings, it is crucial to emphasize the pivotal role that coaches, medical professionals, and a supportive team environment play in facilitating recovery and preventing premature withdrawal from sports. Recognizing these fundamental principles, the benefits of involving sport psychologists in the design and implementation of protocols for prevention, intervention, and support of setbacks in the sport practice become evident.

In the third study, a brief behavioral intervention tailored for coaching teams showed promising results in the improvement of the delivery of technical-tactical instructions, emphasizing the significance of aligning training dynamics with the athlete's learning process rather than focusing merely on desired competitive outcomes. The results of the

experiment showed the effectiveness of personalized interventions in the reduction of hostile feedback and verbal instructions when the ball is in play and the increase in positive feedback given by coaches, echoing the approach supported by Smoll et al. (2009). Hostile feedback and overwhelming players with technical-tactical instructions during executions were found to be detrimental to performance (Buceta, 2020; Maxwell et al., 2000), increasing the risk of unsportsmanlike interactions and undermining the perceived social support within the athlete-coach relationship (Bryan et al., 2023; Rutten et al., 2007). In another qualitative study, athletes reported that being poorly coached distracted them from task execution, prompted self-doubt, lack of confidence in their skills and anticipation of failure (Gearity and Murray, 2011). The conclusions of these studies align with the results of our intervention, highlighting the imperative to diminish the use of hostile feedback and accentuating the significance of placing athlete well-being above win-loss considerations. In fact, even though teams experience both victories and defeats at various stages of their careers, much of the research on effective coaching has primarily focused on high winning periods. However, studies have shown that athletes' views of what makes a coach great, and their perception of support are primarily influenced by the coach's actions instead of their track record of wins and losses (Becker and Wrisberg, 2008; Smith et al., 1990). Rather than blaming coaches for the adverse outcomes associated in the literature to these communication styles, these findings underline coaches' capacity to enhance athletes' coping strategies and develop their comprehension of the contextual factors influencing behavioral responses in sports.

The capacity to positively impact attributions and consequent coping strategies is not the responsibility of the coaching staff alone. Perception of social support could also be facilitated by teammates, family, and social circles outside of sport. Dixon et al. (2017) explored the relationships between challenge and threat appraisals and coaching behaviors in football coaches, finding that coaches with a tendency to appraise stressors as challenges are more likely to offer social support to their athletes. Social support with a focus on development and fun instead of winning, has emerged as a key factor in the athlete's enjoyment of sports. For instance, parental participation characterized by praise and understanding promotes an increase of players' enjoyment of and motivation for sport in early stages of sport development.

These insights have the potential to boost participation in physical activity and sports, ultimately benefiting athletes' psychosocial development, particularly during their formative career stages.

Coping strategies, whether during a global pandemic, injury recovery, or training dynamics, emerge as a critical factor in promoting athlete well-being and performance. Athletes' attributions regarding their experiences, be it the cause of injury or the nature of challenges faced, significantly influence their emotional response, decision-making process, and actions.

This thesis dissertation highlights the integral role of coping strategies and social support, including that provided by coaches and other staff professionals, in athletes' ability to navigate challenging circumstances effectively. The coach-athlete relationship emerges as a pivotal element in the athlete's journey, affecting both recovery and performance outcomes. However, when it comes to analyzing behavior, focusing on the form of coping rather than the function can pose challenges. Stress responses and coping strategies are often categorized into predefined interaction patterns according to the characteristics of the model studied. Yet, behavioral analysis has consistently emphasized the need for individualization and specificity in functional analysis, tailoring the identification of contextual stimuli to better understand and predict individuals' operant responses (Froxán, 2020; Martin, 2019; Skinner, 1974). For example, a coach's behavior graph in our research might initially suggest an aggressive and hostile coaching style. Nonetheless, by identifying the function of these strategies (e.g., managing personal activation, emulating a role model from their learning history), it became possible to reinforce an alternative and incompatible verbal response that better aligned with their coaching objectives.

In order to evaluate the changes in attributions and coping strategies object of improvement, it is recommended to employ multiple measures of the dependent variables over the course of the intervention, instead of relying solely on self-reported measures or pre-post assessments. Continuous monitoring of critical aspects of individual athletes' performance in both training and competitions allow comparison of changes in athletes' behaviors to their own baseline before and after the intervention, enhancing the value of such designs for coaches and athletes (Martin, 2019). By using multiple baseline designs across coaches and athletes when analyzing the effects of a treatment package on coping

strategies, researchers can have more confidence that an experimental effect has genuinely occurred when the results align with existing data and well-established behavioral theories (Martin et al., 2004).

Collectively, these findings prioritize the importance of addressing athletes' psychological needs and developing tailored interventions to support their psychological health. As the sporting landscape evolves, professionals in sport psychology, coaching, and medical care can draw from these insights to foster healthier and more successful athlete experiences. Future research should continue to explore the complex interactions between psychological factors and athlete well-being, contributing to a more comprehensive understanding of this multifaceted field.

Limitations

1. **Sampling Methods:** The use of opportunistic sampling across the three studies might lead to selection bias. In particular, the reliance on self-reported measures in the Study 1 and participants' self-selection might have impacted the validity and generalizability of the findings. Employing randomized selection methods could have improved the representativeness of the samples.

2. **Cross-Sectional Design:** The cross-sectional design utilized in Study 1 and Study 2 presents limitations in establishing causal relationships between variables. This design does not allow a temporal sequence of certain events, limiting the depth of insight into causality.

3. **Small Sample Sizes:** The sample sizes in Study 2 and Study 3 were relatively small, potentially affecting the generalizability of the findings. Although Study 2 adhered to standards for data saturation, the limited sample size may restrict the scope of the insights. A larger sample in Study 3 would have enhanced the statistical power and robustness of the results.

4. **Bias Concerns:** Memory bias in Study 1 and Study 2 could have influenced the accuracy of self-reported data. Additionally, social desirability bias is a potential concern particularly in Study 3, where coaches were made aware of the observed behaviors during the intervention, possibly affecting their verbal responses during post-intervention assessment.

5. Demographic Data: Study 2 and Study 3 could have benefitted from the inclusion of more comprehensive demographic information. In Study 2, additional data about participants' experiences in high-performance sports could have offered a more nuanced understanding of their attributions and coping strategies. Similarly, Study 3 could have provided further insights by including information about the coaches' experience in competitive football, which may have influenced their behavior.

6. Confounding Variables: The presence of confounding variables might partially explain differences in emotional responses in Study 1 and verbal responses of coaches in Study 3. For instance, in Study 1, factors such as the specific rules of confinement of each country and the athletes' individual contexts, including their housing and job situations, could have influenced their emotional response and coping strategies used. In Study 3, competitive results and the position of the football team in the league may have affected the coaches' verbal responses.

Future lines of research

1. Assess Players' Perception of Coaching Behavior and Perceived Support: Future research should consider the players' perception of the verbal response of coaches and the extent of support provided. By incorporating the perceptions of the athletes themselves, we can gain a more comprehensive understanding of the impact of the intervention in the teams' dynamics.

2. Study the Effects of the Program on Perceived Support and Emotional Climate: It is desirable to investigate the lasting effects of the program on athletes' perceived support and the emotional climate within their sports environment. This would shed light on the program's long-term effectiveness and the potential of these brief interventions to create a supportive atmosphere for athletes' development.

3. Incorporate Ecological Momentary Assessment (EMA): The use of Ecological Momentary Assessment (EMA) as the next step in evaluation and assessment is a promising avenue for future research. Transitioning from self-reported measures (quantitative) to qualitative data (potentially biased), EMA offers a context-related response by capturing real-time, in-the-moment data from athletes and coaches. This approach can provide a more accurate understanding of the coping strategies employed and the coach-athlete interactions.

4. Longitudinal Data and Personalized Coaching Sessions: To gain a more comprehensive perspective, future research should consider increasing the number of observations and implementing more personalized coaching sessions with coaches. This would allow for the establishment of goals, ongoing follow-up, and an assessment of coaches' perception of their own verbal responses over time. Expanding the research to encompass a broader spectrum of teams, clubs, and sport disciplines would further enhance the generalizability of the findings.

Conclusions

This thesis dissertation provides a behavioral perspective on the critical role of coping strategies and attributions in enhancing the well-being and performance of high-performance athletes. Whether the challenges arise from a global pandemic, sports injuries, or the dynamics of training, the findings from these studies collectively feature the need for tailored interventions to train the use of appropriate coping mechanisms in the context of competitive sports. The coach-athlete relationship and perceived social support are two factors that can be modified through behavioral interventions but there is a need for consistent monitoring and assessment to track changes in performance and well-being related psychological variables. By challenging the notion that a high-performance environment automatically benefits an athlete's mental health, focus can be directed towards athletic well-being at institutional levels, rather than just win-loss outcomes.

This research aims to advance our understanding of the complex interactions between psychological factors and athlete performance and well-being. It calls for continued research in this multifaceted field to further enhance the support and resources available to high-performance athletes. Hopefully, these pages would encourage professionals in sport psychology, coaching, and medical care to prioritize the psychological welfare of athletes and develop interventions that consider the unique needs and circumstances of each individual, creating together healthier contexts for all those involved in the sport practice.

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