

## RESILIENCE, STRESSORS AND PROTECTIVE FACTORS IN SPORTS PERFORMANCE

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**Abstract.** *Our study focuses on a meta-analysis related to the concept of resilience and its role in the practice of sports in extreme conditions. We try to understand resilience as a dynamic concept, as well as the related elements such as protective factors, stressors, especially the impact of injury on sports activities. For our research, it is important to have a better understanding of these concepts and their role in sports performance. These features are studied in both athletes and general cohorts. We also aim to better understand the resilience scales and their specificity. At the same time, we try to emphasise the implications of resilience for endurance athletes. In extreme conditions, athletes attract attention, and their performance becomes well known. We look into such experiences and extend our research to stressors and their relationship to injury. Apart from their unique way of expressing themselves, athletes engaged in extreme sports (and their performance) involve important stressors and protective factors. The latter allow athletes to balance their functions and bounce back from aversive events. So, sports in extreme conditions enjoy media coverage and great popularity, but the harsh environment where competitions take place brings challenges and unexpected outcomes. From this point of view, we reflected on the stressors and protective factors, and the lack of statistics and studies on such athletes who often face fatalities.*

**Keywords:** *resilience, extreme sports, stressors, injury.*

### Introduction

The concept of resilience arises from the attachment theory. Bowlby (2011) speaks about the need of a relationship that serves for the human being's survival. Everyone needs a secure relationship with their caregiver, which can fulfil their emotional needs and support their development. On the other hand, resilience is a feature acquired during the lifespan development, which can emerge from such a secure relationship. As long as the human being can rely on a secure relationship, they may face challenges from reality, and later can even thrive no matter how harsh the reality may become, managing to cope with stressful life events. Other researchers (Garmezy, 1991; Rutter, 1985) examine young people who experience living in difficult circumstances and the impact on their development. Youngsters who face poverty or parents' mental issues develop different qualities such as good self-esteem, planning skills, a supportive social system and positive personality. Researchers are interested in the particular characteristics of personality that support the human being to bounce back from adversity and trauma or help them to overcome stressors in a positive way while adapting to environmental demands.

Luthar, Cicchetti and Becker (2000) emphasise the dynamic characteristics of resilience. Rutter (1987) considers that resilience is a human ability to bounce back despite stress or adversity. In Rutter's opinion (2006), resilience is linked to the resistance to environmental risk events, in the sense that individuals have different adaptive responses to the same life events, environmental factors or adversities. Werner and Smith (1982) emphasise the role of social support in their effort to understand the lifespan development for building resilience.

The concept of resilience is being studied more and more in relation to sports performance. Psychologists are trying to discover the main components that make the difference in the athletes' activities related to stressful life events, recovery after injury, training and competitions.

Resilience in sports psychology emphasises the adaptive role of mental processes and behaviour in individual responses to the potential effect of negative stressors (Fletcher & Sarkar, 2012, 2013). Resilient athletes can return to their prior performance level after a perturbation, while non-resilient athletes have negative performance, which is followed by another negative performance. So, their ability to recover after a setback is weaker.

We are trying to provide an overview of the literature regarding the concept of resilience and its role in the activities of athletes, especially those who perform in extreme conditions. Their unique performance has a social impact, and social outcomes provide communities with novelty and meaning.

## **Topic Addressed**

### *Resilience, stressors and protective factors in sports*

Many people report that they have experienced different aversive circumstances during their lifetime. In response to these circumstances, some people seem to be disturbed by such stimuli, while others seem to withstand such difficult challenges. These people are referred to as resilient, meaning that they cope well, finding new strategies to deal with negative emotions, get over the loss and overcome trauma. So, people do not respond in the same way to similar events.

Resilience is important for athletes as a personality trait that helps them to withstand aversive events, stressors, trauma and loss and facilitate their optimal functioning during performance. Athletes represent a special cohort that face more pressure at various stages of their activity than other professional groups. In their studies, Sarkar and Fletcher (2014) focus on different types of stressors and protective factors. In the literature, there are also other authors who have studied the protective factors for the general population. Garmezy (1991) highlights three key main topics related to protective factors: dispositional personality attributes related to each individual, a warm and cohesive family relationship, personal availability and the use of social support.

Rutter (1985) thinks that protective factors can be defined as influences able to change the human response according to environmental hazards, which can otherwise lead to negative outcomes. Dyer and McGuinness (1996) consider protective factors as characteristics or events that cause the process of resilience to occur. Johnson and Wiechelt (2004) establish the difference between protective factors according to each individual and context. They can lead to different outcomes for different people.

Connor and Davidson (2003) studied personal resilience factors such as control, challenge, adaptability, commitment and problem solving. Wagnild and Young (1993) talk about five characteristics of resilience identified at an individual level, such as equanimity, self-reliance, meaningfulness, perseverance and existential aloneness. Other authors address important resilience aspects related to family or community ties. Zautra, Hall and Murray (2008) mention trust as an important element of resilience. Trust can be identified at a personal level but is developed in social interactions or relationships, and its characteristics – cohesiveness and collaborative ties – are defining elements of the construct.

Protective factors have been identified by different authors. Thus, Horton and Wallander (2001) talk about hope, others about explanatory style or social support (Brown, 2008); these protective factors are assessed by various resilience scales. Sarkar and Fletcher (2014) focus on the protective factors that are important in sports performance research, while other researchers have developed resilience scales for the non-sport environment. According to Fletcher and Sarkar (2012), there are five main categories of protective factors based on which athletes manage to overcome adversities.

One category involves positive personality traits such as positive cognitive processing, adaptive perfectionism, hope, proactivity, competitiveness, optimism. Adaptive perfectionism refers to the balance between high performance standards and little concern for errors and hesitations. Optimism is understood in two ways: as an expectation for success (Scheier & Carver, 1985) and as a perspective of mentalising events. Hope is a state of mind related to positive outcomes and success, being studied in both ordinary people and athletes. The latter report lower perceived burnout and develop their ability to self-organize in order to reach their goals. Sarkar and Fletcher (2014) conclude that hope and the ability to overcome adversity are associated in sports competitions. Competitiveness is understood as a feeling of success, and self-perceived anxiety is a supportive factor of sports performance. Adaptive perfectionism is a concept related to high standards, but low levels of anxiety about failure; it is a flexible and positive approach to performance. Proactive behaviour is a goal-oriented attitude and a planning strategy related to sports performance. Proactive athletes are those who take initiatives look for solutions and meaning in their activities.

Confidence is the feeling that someone has in own abilities and a positive perspective on the results of future sports performance. Confidence is a concept that is explored in competitive sports and lifelong athletic training. Vealey and Chase (2008) make a distinction between general sports confidence and robust confidence. General sports confidence is not considered critical for sports performance, while robust confidence is. Perceived social support is a subjective perspective related to the emotional participation of the athletes' social network in their performance. Perceived social support is a reliable element of the resilience-stress-performance relationship. Fletcher and Sarkar (2012) indicate that social support may come from family, teammates, coaches and support staff. Emotional support brings a sense of security and comfort, which makes us think of attachment ties. So, by

trying to find the protective factors, we return to the starting point in our discussion about the attachment theory and its role in emotional growth, as it is understood as the basis for the human being's survival (Wallin, 2010).

Alongside the protective factors, researchers underline the role of stressors in the resilience process in sports. Stressors are referred to as environmental demands or stimuli. After studying different papers on stressors in sports psychology, Sarkar and Fletcher (2014) organized stressors into three categories: competitive, organizational and personal stressors. Personal stressors are demands related to life events, family problems or the loss of a significant person. Managing the time schedule and planning, as well as fulfilling personal and professional commitments, are considered to be stressful by professional athletes. Organizational stressors are attached to the institutional settings to which athletes belong (Arnold & Fletcher, 2012).

Competitive stressors are related to different environmental elements of the sports competition. They refer to low performance, expectations, self-presentation, injuries, pressure and rivalry. Sports injuries are studied and involve a lot of aspects related to the risk of injury (risk of injuring an opponent or being intentionally injured by an opponent, risk of re-injury), the act of being injured and its consequences (lack of training and loss of performance level, low performance, period of transition, missed competitions, etc.). Stressors caused by injury largely influence the mood and behaviour of athletes.

Wiese-Bjornstal, Smith, Shaffer and Morrey (1998) studied the emotions experienced by athletes before and after injury. They have found that their emotional response to injury is related to depression, helplessness, shock, anger and anxiety, while their emotional response to the recovery process is related to guilt, frustration, relief, jealousy and apathy.

In our work, we try to identify the stressors for athletes performing in extreme conditions and their injury risk level, which is much higher than in traditional sports competitions. Injuries may occur because of an adverse natural environment, and stress is caused by the lack or limited access to medical assistance in case of emergency.

For these specific activities in which athletes are involved, it is important to highlight the role of resilience scales when performing measurements. A scale can be an important tool that highlights the assessed aspects of human resilience. For example, Fernandes, Amaral and Varajão (2018) talk about the Wagnild and Young's Resilience Scale (WYRS) and its validation to Information Systems Students. This scale studies the possible correlation between health and its influence on individual resilience. Hence, WYRS is a reference tool for educators, who can review the resilience level of students to promote and support them to cope with aversive events and identify those who need more appreciation and encouragement.

The importance of resilience for individuals and its measurement are nowadays debated in several research studies. For example, Daniilidou and Platsidou (2018) highlight the application of a different type of scale to 136 teachers in Greek secondary education. The Teachers' Resilience Scale (TRS) is an integrated instrument that assesses internal and external protective factors of individuals. Sarkar and Fletcher (2014) talk about stressors as factors that originate from environmental elements or life circumstances. On the other hand, many authors that study resilience do not find the same type of stressors and do not come to the same conclusions as regards stressors. Thus, stressors may vary from an author to another and from an assessment scale to another.

In another perspective, Lu, Hsu, Chan, Cheen and Kao (2012) mention the validation of another assessment tool. The College Student-Athletes' Life Stress Scale is an initial measurement and validation tool suitable for student athletes. Regarding their social environment, Etzel (2006), as well as Johnson and Ivarsson (2011), specify that they face overwhelming events such as hard training, difficult competitions, injuries and staff pressure. Other sports researchers talk about other scales and stress factors. For example, in the Daily Analysis of Life Demands for Athletes (DALDA), the source of stressors comes from the diet and sleep schedule and, of course, health (Nicholls, Backhouse, Polman, & McKenna, 2009; Rushall, 1990). Few research studies mention that injuries can be a stress factor for athletes and hinder their performance development process. In extreme sports, injuries are more common than in traditional sports such as basketball, football or volleyball, because of the environmental challenges. Researchers, athletes, specialists in sports science and applied sports psychology consider that extreme sports attract more attention and interest due to dangerous demands (accident, injury or even death) (Immonen, Brymer, Davids, Liukkonen, & Jaakkola, 2018).

#### *Extreme sports and injuries*

Buckley (2018) states that extreme sports can be defined in a non-circular way, independent of athlete psychology. This author says that extreme sports can be a suitable tool to examine thrill, which is related to sensation-seeking or thrill-seeking. According to previous research (Lyng, 1990; Elmes & Barry, 1999), thrill-seeking changes behavioural patterns, which can be considered abnormal, addictive, dangerous or even criminal.

From another point of view, Breivik, Johnsen and Augestad (1994) studied the link between high risk and extreme sports. Both terms are related to any sport where an athlete might face physical and emotional distress, potential severe injuries or death as a result of performance. For example, in BASE jumping, the rate of fatal events is 0.4 in 1000 jumps (Soreide, Ellingsen, & Knutson, 2007). On the other hand, in 2001, The Council of Europe defined sport as a physical activity aimed at the development of physical fitness and well-being in order to achieve performance at all competition levels and create social relationships with other peers. Traditional sports involve lower risk of injury than extreme sports. However, Turner and McCory (2006) claim that several traditional sports, such as cheerleading and horse riding, may cause fatal injuries yearly.

Injuries occur in extreme sports as well and become important stressors. According to Laver, Pengas and Mei-Dan (2017), higher injury rates are noted in new and inexperienced athletes who have just engaged in extreme sports. Competitions involve pressure and certain demands that increase the likelihood of injury. In common team sports, statistics show different types of injuries, but in extreme sports, statistics show fatalities quite often, along with different types of injuries. In the interviews conducted by Evans, Wadey, Hanton and Mitchell (2012) with golfers and rugby players, they talk about the risk of injury, but never about the risk of death. Among stressors in extreme sports, we should take into account the extreme conditions and the lack or limited access to medical assistance, which may cause serious consequences and even death because of sports injuries. Human errors are identified as the leading cause of the fatalities in extreme sports. In traditional sports competitions, there are lots of injuries, but also fatalities. Mei-Dan, Monasterio, Carmont and Westman (2013) show a high rate of fatalities (49%) in wingsuit jumpers between 2008 and 2011. So, the most dangerous extreme sports is wingsuit BASE jumping, considering fatality rates.

Even if extreme sports involve a high risk of injury and death, they have enjoyed increasing popularity in recent times, being practiced as leisure or professional sports activities. Extreme sports benefit from increased media coverage, fashion and marketing, and therefore a lot of popularity.

## **Conclusion**

Studying resilience in endurance athletes or extreme sports athletes is challenging. In the last decade, more and more researchers have become interested in the internal process of overcoming stress, trauma or loss. The process of bouncing back from aversive events in sports performance has been recently studied, while assessment scales are still to be created for the specific group of athletes. So, researchers exploring the resilience topic face limited theoretical resources and methodological tools.

Studies conducted over the years focused on athletes, elite athletes and college athletes rather than extreme sports athletes. From this point of view, the body of knowledge is limited regarding resilience in endurance or high-risk sports performance. One of the characteristics of extreme sports is related to the risk of injury and even death. The literature talks about injuries and there are many researchers who study the risk of injury or injury-related stressors. Studies show that, in case of injury, resilient athletes have a positive response to environmental demands. Reviewing studies on stressors, we have found that lack of medical assistance and the risk of death are not listed among stressors. Therefore, future studies should also examine these factors in extreme sports.

Resilience studies focus on stressors and protective factors. Protective factors balance the emotional charge of athletes who face an injury or other types of stressors. In order for athletes to thrive after extreme events, they need to rely on protective factors. However, each author who studies resilience identifies different protective factors. There is no common understanding of protective factors. Injury management is based on both protective factors and resilience assessment. From this point of view, the study of protective factors should be continued so that specialists can create a sport-specific resilience scale that will provide significant information on endurance and extreme performers.

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