

The Effects of Recovery Resilience on Self-management and Perceived Athleticism in Skiers

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Abstract: Skiing is booming in Northeastern China, and skiers from Jilin, Liaoning, and Heilongjiang provinces have achieved success in domestic and international events. With the increase in training intensity, the recovery resilience of skiers has gradually become a key factor affecting their competitive performance and long-term development. This paper takes registered skiers from three provinces as the research object to explore the impact of recovery resilience on self-management ability and cognitive athletic ability and focuses on analyzing how to improve athletes' self-management ability and enhance their decision-making and concentration by balancing training and rest and regulating their psychological state. At the same time, this paper also proposes specific methods to optimize recovery flexibility, which can provide strong support for ski athletes to improve their competitive performance.

Keywords: Skiers; Recovery resilience; Self-management; Cognitive athleticism

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1. Introduction

Northeast China has become a major winter sports center in the country, thanks to its cold climate and high-quality skiing resources. According to the 2022 China Ice and Snow Sports Development Report, Jilin, Liaoning, and Heilongjiang provinces have the highest ski participation rates and the most advanced skiing facilities in the country, which has led to skiers from these regions winning several domestic and international events. In Jilin Province, for example, the number of registered skiers has grown dramatically in recent years, exceeding 1,500, accounting for more than 25% of the total number of registered skiers in the country. Meanwhile, several outstanding skiers have emerged from Heilongjiang and Liaoning provinces, and the number of participants in international competitions has increased year by year. With the continuous improvement of training intensity, how to help ski athletes better recover their physical and psychological state and prolong their competitive career has become an important direction of current scientific research on skiing. Data show that recovery resilience is highly correlated with athletes' self-management and competitive

performance, especially in terms of recovery after high-intensity training and intense competitions and that scientific recovery strategies can effectively avoid sports injuries and improve decision-making ability and concentration. This research background provides a solid foundation for the in-depth analysis of this thesis.

2. Impact of resilience on self-management skills

2.1. Balance training and rest

Skiing is a high-intensity, high-risk sport, and the intensity of training is often extremely taxing on the athlete's body. Athletes with good recovery resilience can find the right balance between training and rest, avoiding fatigue or potential injuries caused by over-training, thus prolonging their careers and improving their long-term performance. A scientific recovery process that includes proper rest, physical therapy, and modification of training intensity can help athletes maintain optimal performance and build up energy and focus for subsequent training. In this way, athletes can ensure that they can perform well in every game, improve their self-management, and maintain continuous improvement.

2.2. Regulate emotional regulation and control mental states

Skiing competitions are full of unforeseen challenges and pressures, and the mental state has a direct impact on an athlete's performance. Athletes with good resilience can adjust quickly to emotional fluctuations or stress, avoiding performance failures caused by psychological burdens. They use meditation and mental training to effectively manage emotional fluctuations and remain calm and focused amid intense competition, even turning pressure into motivation. Recovering resilience also equips athletes with greater mental toughness, helping them to recover quickly and get back on track when faced with failures or setbacks, and ultimately helping athletes enhance their mental management skills and laying the foundation for their long-term development.

3. Effects of recovery resilience on cognitive athleticism

3.1. Improved split-second decision-making and response capabilities

Skiing is a high-speed sport in which athletes need to make quick judgments and adjustments in a rapidly changing environment, all of which rely on a synergistic response from the brain and body. Good recovery resilience means that athletes can quickly regain neurological acuity and maintain brain clarity and responsiveness after intense training and competition. Conversely, poor recovery may lead to delayed or incorrect decision-making by the athlete at critical moments, affecting the outcome of the game. Therefore, enhancing recovery elasticity not only shortens the fatigue period of athletes but also improves the brain's reaction speed to external stimuli, helping athletes make more precise and decisive split-second decisions during competition.

3.2. Enhance concentration and stress resistance

Ski racing not only tests athletes' physical fitness but also places extremely high demands on their mental stability under high-pressure conditions. Athletes with good resilience can recover quickly from psychological and physiological fatigue, and thus maintain their concentration for a long time during the race, without being affected by external interference or race pressure. In addition, in the face of fierce competition and competition pressure, good recovery resilience enables athletes to remain calm and rational under pressure, avoiding losing

control of the game due to nervousness or anxiety. Thus, recovery elasticity is not only the key to improving physical fitness but also directly related to athletes' concentration and stress resistance, which determines their overall competitive performance on the field.

4. Recovery resilience strategies for skiers

4.1. Optimizing physical recovery methods after training

Skiing is a high-intensity whole-body sport, and athletes need to endure great physical exertion and muscle fatigue during training. Adopting scientific body recovery strategies can effectively prolong an athlete's athletic career and avoid injury problems caused by fatigue accumulation. First of all, cold body and stretching is a necessary step, many athletes often ignore this link after the end of training, but in fact, cold body stretching can accelerate the metabolism of lactic acid, and reduce muscle stiffness and soreness. In addition, physical therapy such as massage, cold compresses, and hot compresses can also effectively promote blood circulation and help relieve muscle tension. Skiers should reasonably choose appropriate physiotherapy to allow the body to recover fully. Proper hydration and electrolyte balance after exercise should also not be ignored, as heavy sweating during ski training can lead to loss of water and electrolytes in the body. Timely replenishment of electrolytes can help athletes maintain the normal function of their muscles, preventing cramps and other discomforts. These methods may seem simple, but if adhered to, will be able to significantly improve the recovery of athletes' resilience and physical fitness.

4.2. Enhancing psychological recovery and stress management

Skiers are not only challenged physically but the psychological pressure cannot be ignored. High-intensity training and competition often puts athletes under tremendous mental stress, not only from the expectation of performance but also from the psychological fluctuations before and after the race. Therefore, skiers need to use a range of mental recovery strategies to regulate their emotions and cope with stress. First, mental exercises such as meditation and mindfulness exercises can be used to help athletes quickly free themselves from the stress of competition after a race. During deep breathing exercises, athletes can relax their nerves and regain their composure. Of course, psychological counseling is also key for skiers to improve their mental recovery. Know your enemy and know yourself, and professional counseling allows athletes to better recognize their mood swings and learn how to cope with stress and anxiety during a race. Team support is also indispensable. The support of coaches, teammates, and family members can provide athletes with a sense of psychological security, allowing them to have enough mental toughness to quickly adjust their state and move on in the face of failure or setbacks.

4.3. Rationalize diet and nutritional supplementation

Reasonable diet and nutritional supplementation are the basis for skiers to maintain a high level of competitive status. In high-intensity training and competition, skiers have great energy consumption and serious loss of nutrients needed in the body, therefore, dietary arrangements must be carefully planned to provide the body with sufficient energy and nutrition. Athletes should pay attention to the intake of carbohydrates because carbohydrate is an important source of energy for the body, especially in the hours before the race, so the intake of the right amount of supplementation is equally essential. Ski athletes should try to consume high-protein foods such as eggs, lean meat, or dairy products within 30 minutes after training to accelerate muscle

recovery. In addition, attention should also be paid to the appropriate supplementation of vitamins and minerals, vitamin C can help repair the free radical damage produced during exercise, while minerals such as calcium and magnesium can strengthen bone and muscle function. Overall, the diet of skiers should be as diversified and balanced as possible, focusing on the matching of staple foods, but also ensuring a comprehensive nutritional intake, avoiding partiality or eating too much of a single diet, to provide sufficient support for daily training and competition.

5. Conclusion

In summary, recovery resilience plays a key role in skiers' self-management and cognitive athletic ability. Good recovery resilience not only helps athletes maintain the best physical condition but also provides strong psychological support to enhance athletes' performance in high-pressure environments. Whether through balancing training and rest or through emotional regulation and psychological state control, recovery resilience provides an important guarantee for athletes' competitive level. However, there is still much room for optimization of existing recovery strategies, and skiers should develop more personalized recovery plans based on individual differences to improve competitive stability and maintain continuous progress.

Disclosure statement

The authors declare no conflict of interest.

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