

Psychological Resilience and Athletic Performance among Injured Athletes in a University in Henan, China



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ABSTRACT: This study assessed the extent to which student athletes employed psychological resilience during injury recovery and examined its impact on athletic performance. The findings indicate that psychological resilience was perceived by respondents to be applied to a very high extent, particularly in the areas of social support and psychological well-being. Respondents rated social support as the most essential factor, followed by psychological well-being, coping strategies, personality traits, and return-to-sport decision-making. Athletic performance was generally rated at a very high level, especially in terms of return-to-play readiness and physical recovery. Statistical analysis revealed that while psychological resilience in coping strategies, social support, and personality traits showed no significant correlation with athletic performance, psychological well-being and return-to-sport decision-making were positively correlated with improved physical recovery, functional movement, and readiness to return to sport. These results highlight the importance of psychological well-being in supporting athletic recovery, suggesting that resilience-building strategies focused on well-being can positively influence performance outcomes in injured athletes.

KEYWORDS: psychological resilience, psychological well-being, athletic performance, injury recovery, student athletes

I. INTRODUCTION

Sport science goes beyond physical performance. It captures the intricate relationship of inner strength and will, especially in challenging times when sports injuries come into play. Injuries occur. This is reality in sports in an undeniable truth. In fact, they often present athlete health challenges on physical as well as psychological levels. Often, an athlete's psychological resilience plays a crucial role in determining their ability to recover from setbacks. Various cognitive, affective, and behavioral domains encompass the concept of resilience, widely identified as the ability to adapt successfully in contexts of risk or adversity.

Psychological skills can help injured athletes cope with the emotional challenges that come with being sidelined from their sport. By learning to manage their emotions and maintain a sense of perspective, athletes can navigate the ups and downs of the recovery process more effectively. It is not uncommon to hire certified Athletic Trainers (ATs) who possess an exceptional capacity to offer psychological support to athletes because to their robust interpersonal connections. Thus, incorporating psychological skills into their rehabilitation routine can lead to a quicker and more successful return to play. (Hamson-Utley, 2008, Zakrajsek et al., 2016)

Injuries can be bound to happen to athletes and this can impose serious obstacles in their training routines, performance potential, and overall health. Because of this, athletes frequently experience significant levels of psychological discomfort, which can make the process of recuperation more difficult for them. These symptoms include anxiety, depression, and the avoidance of fear. Consequently, healing comprises not only the process of physical rehabilitation but also the psychological effect of the damage that has been done. It is impossible for professional sportsmen to recover from injury syndromes if they do not have mental fortitude. Athletes that are resilient have more robust coping strategies, higher levels of drive, and faster recovery times, which makes them at least more bulletproof than their peers who are less resilient. They are able to traverse the process of rehabilitation with better effectiveness and dedication because they are able to view setbacks as transitory challenges rather than obstacles that cannot be overcome. (Mojtahe and Burrichter, 2023)

However, post-injury athletic performance improves with greater psychological resilience. A study found that athletes who were injured longer experienced less imagery use, but 68% used some type of imagery during their rehabilitation. Debilitative images included pre-competition emotions, suggesting that imagery training should verify these images are not perceived as debilitative. Fear of reinjury and anxiety about the unknown were documented return-to-competition emotions. Imagery of previous experiences and MG-Arousal images predicted cognitive anxiety. Athletes who were injured during rehabilitation days did not

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experience anxiety about returning to practice, but rather the use of positive images and confidence in their abilities. Mental preparation is crucial for successful return to play after an injury. (Monsma et al., 2009)

Mindfulness corresponds with psychological resilience. The research of Ragab (2024) demonstrates that mindfulness-based therapies can improve athletic performance by enhancing attentional control, emotional regulation, and stress management. This aids athletes in focusing, managing pressure, and maintaining peak performance in high-stress scenarios. Integrating mindfulness practices into training routines enables athletes to enhance their mental well-being and performance in competitive settings. The integration of mindfulness into athletic training regimens can substantially assist athletes both during competition and in their personal lives. Thus, the ability to cope with adversity, remain positive, and persist in the face of setbacks not only assists rehabilitation but also enhances sports performance post-injury. Sports organizations should focus on psychological resilience, and through targeted interventions, athletes can rise above injuries both in the field as well as in life.

Research Questions

1. What is the assessment of the athlete respondents on the extent of employing psychological resilience when they were injured in terms of:
 - 1.1. coping strategies;
 - 1.2. social support;
 - 1.3. personality traits;
 - 1.4. psychological well-being; and
 - 1.5. return to sport decision-making?
2. What is the self-assessment of the athlete respondents of their athletic performance when they were injured in terms of:
 - 2.1. physical recovery and rehabilitation;
 - 2.2. functional movement and strength;
 - 2.3. skill retention and development;
 - 2.4. return to play readiness; and
 - 2.5. performance monitoring and evaluation?
3. Is there is significant relationship between psychological resilience and athletic performance among athletes who experienced injury?

II. METHODOLOGY

The study was carried out in a university in Henan, China. It covered the assessment of the relationship between athletes' psychological resilience and their athletic performance when they experienced injury, assessed by athletes from Henan University of Urban Construction. To be specific, athletes' psychological resilience was based on the following: coping strategies, social support, personality traits, psychological well-being, and return to sport decision-making. This variable were correlated with the self-assessment of the athlete respondents of their athletic performance when injured in terms of physical recovery and rehabilitation, functional movement and strength, skill retention and development, return to play readiness, and performance monitoring and evaluation. The data was presented, analyzed, and interpreted using frequency, percentage, mean, standard deviation, independent samples t-test, one-way ANOVA, and Pearson's r correlation.

III. RESULTS AND DISCUSSION

I. Respondents' Assessment on the Extent of Employing Psychological Resilience

It was perceived by the student respondents that employing psychological resilience in terms of social support was of very high extent ranked as first. Psychological well-being was also perceived to be of very high extent which ranked second, followed by the coping strategies, and personality traits. On the other hand, return to sport decision-making was perceived to be of high extent, and was ranked fifth and last among the five indicators. Generally, the result reveals that employing psychological resilience was perceived by the student respondents to be of very high extent.

1.1 Coping Strategies

It was very true to the student respondents that they actively sought out information about their injury to understand it better, and that they sought out social support from friend or family to help them cope with their injury with the highest assessment given interpreted as to a very high extent. Similarly, it was very true to them that they tried to maintain a positive attitude despite their injury, and that they set small, achievable goals for their recovery process interpreted as to a very high extent. On the other hand, it was true to the respondents that they sought out professional help to help them cope with the psychological effects of their injury, and that they engaged in relaxation techniques to manage stress related to their injury interpreted as to a high extent. Though it was true to them that they used visualization techniques to imagine themselves healing and returning to their sport, it was given the lowest assessment interpreted as to a high extent. A composite mean value of 3.59 indicates that employing psychological resilience among the respondents in terms of coping strategies was perceived by the student respondents as to a very high extent.

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1.2 Social Support

It was very true to the student respondents that they received emotional support from their teammates/coaches during their injury with the highest assessment given interpreted as to a very high extent. Likewise, it was very true to them that their friends/family provided practical assistance during their injury, that they received encouragement and motivation from others to keep pushing through their injury, that they felt understood and validated by those around them when discussing their injury, that they felt a sense of belonging and connection within their sports community despite being injured, and that they felt comfortable asking for help when they needed it during their injury interpreted as to a very high extent. On the other hand, it was true to the respondents that they had someone to talk to about their fears and frustrations related to their injury with the lowest assessment interpreted as to a high extent. A composite mean value of 3.75 indicates that employing psychological resilience among the respondents in terms of social support was perceived by the student respondents as to a very high extent.

1.3 Personality Traits

It was very true to the student respondents that they are adaptable and was able to adjust their goals and expectations during their injury with the highest assessment given interpreted as to a very high extent. Similarly, it was very true to them that they are proactive and took initiative in managing their recovery process, that they are patient and was able to tolerate the uncertainties and frustrations of their injury, and that they are resilient and bounce back quickly from setbacks, including injuries interpreted as to very high extent. On the other hand, it was true to them that they are self-disciplined and was able to adhere to their recovery plan despite challenges interpreted as to a high extent. Though it was also true to them that they are generally optimistic, which helped them maintain hope during their injury, and that they are open-minded and was willing to try different approaches to cope with their injury, it was given the lowest assessment interpreted as to a high extent. A composite mean value of 3.59 shows that employing psychological resilience among the respondents in terms of personality traits was perceived by the student respondents as to a very high extent.

1.4 Psychological Well-being

It was very true to the student respondents that they experienced personal growth and development as a result of their injury experience with the highest assessment given interpreted as to a very high extent. Similarly, it was very true to them that despite their injury, they felt a sense of purpose and meaning in their life, that they was able to maintain a positive self-image despite their limitations due to injury, that they felts resilient and capable of overcoming the difficulties posed by their injury, and that they felt emotionally stable and able to regulate their emotions during their injury, interpreted as to a very high extent. On the other hand, it was true to the respondents that they experienced moments of joy and contentment despite the challenges of their injury interpreted as to a high extent. Though it was also true to them that they felt a sense of inner peace and acceptance despite the uncertainties of their recovery, it was given the lowest assessment interpreted as to a high extent. A composite mean value of 3.70 shows that employing psychological resilience among the respondents in terms of psychological well-being was perceived by the student respondents as to a very high extent.

1.5 Return to Sport Decision-Making

It was true to the student respondents that they weighed the potential impact of returning to sport on their long-term health and well-being with the highest assessment given interpreted as to a high extent. Similarly, it was true to them that they carefully considered the risks and benefits of returning to sport after their injury, that they sought input from trusted mentors or advisors in their sport community about returning to sport, that they considered alternative ways to stay involved in their sport if returning immediately was not feasible, that they listened to their body and trusted their instincts when deciding to return to sport, and that they consulted with medical professionals to make an informed decision about returning to sport interpreted as to a high extent. Though it was also true to them that they balanced their desire to return to sport with the need to prioritize their physical and mental health, it was given the lowest assessment interpreted as to a high extent. A composite mean value of 3.28 indicates that employing psychological resilience among the respondents in terms of return to sport decision-making was perceived by the student respondents as to a high extent.

II. Respondents' Assessment of their Athletic Performance When they were Injured

Respondents' athletic performance when they were injured was found to be of very high level in terms of return to play readiness which was ranked first. Second in rank was in terms of physical recovery and rehabilitation, third in rank in terms of skills retention and development, while fourth in rank was on functional movement and strength. Their athletic performance in terms of performance monitoring and evaluation was found to be of high level indicating that this was the least assessed athletic performance of students. An over-all mean value of 3.66 indicates that respondents have a very high level of athletic performance in general when they were injured.

2.1 Physical Recovery and Rehabilitation

It was very true to the student respondents that they maintained a positive mindset throughout their recovery process, believing in their body's ability to heal, with the highest assessment given interpreted as to a very high level. Similarly, it was very true to them that they adhered to prescribed rest periods and avoided activities that could exacerbate their injury, that they consistently attended rehabilitation sessions and actively participated in exercises, that they adjusted their lifestyle and daily routines

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to support their physical recovery, that they effectively communicated with their healthcare team about any concerns or setbacks during rehabilitation, and that they diligently followed their physical therapy or rehabilitation program to aid in their recovery interpreted as to a very high extent. On the other hand, it was true to the respondents that they sought out additional treatment modalities to enhance their recovery with the lowest assessment interpreted as to a high extent. A composite mean value of 3.73 shows that respondents have a very high level of athletic performance when they were injured in terms of physical recovery and rehabilitation.

2.2 Functional Movement and Strength

It was very true to the student respondents that they noticed improvements in their range of motion and flexibility as they progressed through rehabilitation, that they focused on proper technique and form during exercise to prevent re-injury, and that they actively monitored their progress in terms of functional movement and strength throughout their recovery with the highest assessment given interpreted as to a very high level. Likewise, it was also very true to them that they gradually reintegrated sports-specific movements without pain or limitation interpreted as to a very high level. On the other hand, it was true to the respondents that they can consistently engaged in cross-training activities to maintain overall fitness, and that they felt confident in their ability to perform basic functional movements without pain/ limitation. Though it was also true to them that they regained strength in the injured area and surrounding muscles over time, it was given the lowest assessment interpreted to be of high level of performance. A composite mean value of 3.66 indicates that respondents have a very high level of athletic performance when they were injured in terms of physical recovery and rehabilitation.

2.3 Skill Retention and Development

It was very true to the student respondents that they watched footage of past performances or games to analyze and learn from their mistakes with the highest assessment given interpreted as to very high level. Likewise, it was also true to them that they focused on developing skills that were not directly impacted by their injury to maintain progress, that they received coaching or guidance on technical aspects of their sport to improve despite their inquiry, that they worked on maintaining and refining their sports-specific skills during their injury layoff, and that they remained actively engaged in team activities and discussions to stay connected to their sport interpreted to be of very high level. On the other hand, it was true to the respondents that they visualized themselves performing skills and techniques to enhance mental rehearsal, and that they sought out alternative ways to practice and simulate game situations despite being injured with the lowest assessment given both interpreted as to a high level of performance. A composite mean value of 3.68 shows that respondents have a very high level of athletic performance when they were injured in terms of skill retention and development.

2.4 Return to Play Readiness

It was very true to the respondents that they communicated openly with their coach or trainer about their readiness and concerns regarding return to play with the highest assessment given interpreted as to a very high level. Likewise, it was also very true to them that they felt confident in their ability to perform at a competitive level of returning to play, that they felt physically prepared to return to sport after completing their rehabilitation program, that they listened to their body and adjusted their training, that they gradually increased the intensity and duration of their training session to assess readiness, and that they participated in simulated game scenarios or practice matches to evaluate their readiness interpreted as to a very high level. On the other hand, it was true to the respondents that they received clearance from medical professionals before attempting to return to full sport participation with the lowest assessment given interpreted to be of high level of performance. A composite mean value of 3.75 shows that respondents have a very high level of athletic performance when they were injured in terms of return to play readiness.

2.5 Performance Monitoring and Evaluation

It was very true to the student respondents that they sought feedback from coaches, teammates, or trainers on areas of improvement with the highest assessment given interpreted to be of very high level. Likewise, it was also very true to them that they reflected on their performances and identified lessons learned to inform future trainings strategies interpreted also as to a very high level. On the other hand, it was true to the respondents that they adjusted their training and performance goals based on feedback and self-assessment, that they used technology or tools to monitor their performance, that they regularly tracked their performance metrics during rehabilitation, and that they compared their current performance levels to pre-injury benchmarks to gauge progress interpreted as to a high level of performance. A composite mean value of 3.49 indicates that respondents have a high level of athletic performance when they were injured in terms of performance monitoring and evaluation.

III. Relationship Between Psychological Resilience and Athletic Performance Among Athletes who Experienced Injury

The result shows that the extent of applying psychological resilience when athletes were injured in terms of coping strategies, social support, and personality traits were not found to be significantly correlated with the athletic performance who experienced injury in terms of physical recovery and rehabilitation, functional movement and strength, skill retention and development, return to play readiness, and performance monitoring and evaluation. This goes to show that applying psychological resilience in terms of coping strategies, social support, and personality traits do not significantly affect the performance of athletes who experienced injury.

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On the other hand, the result shows that the extent of applying psychological resilience to athletes who have experienced injury in terms of psychological well-being was found to be significantly correlated to a high degree, while to a moderate degree in terms of return to sport decision-making, with the athletic performance who experienced injury in terms of physical recovery and rehabilitation, functional movement and strength, skill retention and development, return to play readiness, and performance monitoring and evaluation. This is taken to mean that applying psychological resilience in terms of psychological well-being, and return to sport decision-making give a impact on the performance of athletes who experienced injury. Generally, it can be said that applying psychological resilience to athletes who have experienced injury could affect positively their athletic performance.

CONCLUSION

The study reveals that student respondents perceived the application of psychological resilience—particularly in terms of social support, psychological well-being, coping strategies, and personality traits—as highly significant during their injury experience. The respondents indicated that social support was the most crucial factor, followed by psychological well-being and coping strategies. Athletic performance among injured respondents was reported to be high, especially in return-to-play readiness, physical recovery, and skill retention. However, despite the extensive application of resilience, only psychological well-being and return-to-sport decision-making were significantly correlated with improved athletic performance metrics, particularly in physical recovery, functional movement, and readiness to play. These findings suggest that fostering psychological resilience—especially psychological well-being—can positively influence athletic recovery and performance, underscoring its value in sports rehabilitation practices.

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