

Sports Injuries Support: Towards a Proposed Intervention Program for Soccer Training

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Abstract: The aim of this study was to explore the relationship between university football students' experiences of sports injuries and rehabilitation support, and the effectiveness of rehabilitation support provided to this group. The study adopted a mixed research method combining quantitative and qualitative methods, and data were collected through questionnaires and semi-structured interviews. The study population consisted of 180 football students from Jiaqing College and Guangzhou Sports Institute. It was found that the students demonstrated high levels of knowledge, preparation, and application of sports injuries, as well as positive attitudes towards all aspects of rehabilitation support (including physical rehabilitation, psychological support, functional recovery, rehabilitation goals and social support). Correlation analyses with the correlation between sports injuries and rehabilitation support showed a significant positive correlation, emphasizing the importance of rehabilitation support in dealing with sports injuries.

Keywords: Football; Sports Injury; Rehabilitation Support; University Students.

1. Introduction

Soccer is a popular sporting activity worldwide that not only inspires millions of people, but also plays an important role in social and cultural exchange. However, soccer is also associated with a range of potential health risks, one of the most prominent of which is sports injuries. These sports injuries have a wide range of impacts on athletes' lives and careers, not only limited to the physical level, but also involving psychological and social dimensions. Therefore, the importance of an in-depth understanding of soccer sport injuries and their rehabilitation support cannot be overstated.

Soccer is a highly competitive sport often accompanied by intense physical contact and high levels of physical activity. This results in soccer players being exposed to potential risks of sports injuries during games and training. For example, injuries such as knee ACL tears, ankle sprains, and muscle strains are very common in soccer (Gao, 2020). These injuries have long-term effects on the lives of athletes, including pain, impaired function, and rehabilitation challenges.

In soccer, various laws, policies, rules and regulations have been developed to ensure that the rights and health of athletes are protected. These regulations cover prevention, diagnosis, treatment and rehabilitation support for sports injuries. For example, the Fédération Internationale de Football Association (FIFA) has developed guidelines on the health and rehabilitation of soccer players to ensure that athletes receive appropriate care and support after an injury (Lin, 2019).

Given the continued growth of soccer and the importance of the issue of sports injuries, current research aims to provide insight into the nature and impact of soccer injuries and the rehabilitation support provided. However, despite the existence of a number of studies on soccer sport injuries and rehabilitation, there are still a number of research gaps that need to be filled.

Currently, existing research focuses primarily on the physical and medical aspects of sport injuries, with less

attention paid to the impact of psychological and social dimensions and perceptions between athletes and rehabilitation professionals. Therefore, the timeliness of this study is such that it contributes to an in-depth understanding of the multidimensional impact of soccer sport injuries and provides guiding recommendations to improve rehabilitation support. To assess the level and nature of sport injuries in soccer players. To understand the multidimensional levels of rehabilitation support including physical rehabilitation, psychological support, functional recovery, rehabilitation goals and social support. Explore the correlation between the level of sport injury and the level of rehabilitation support. To analyze the perceptions of soccer students on rehabilitation support measures. To suggest customized rehabilitation support programs based on the findings to improve the rehabilitation process and quality of life of soccer players.

By providing insight into the multidimensional effects of soccer injuries and the level of rehabilitation support, this study helps to develop more effective rehabilitation programs that will improve the quality of rehabilitation for soccer players. This will help them return to play faster and reduce the risk of re-injury. By providing better rehabilitation support, athletes are more rehabilitated and continue to participate in soccer, thus contributing to the sustainability of the sport.

As a globally popular sport, soccer has a strong social and cultural impact. Millions of people participate in soccer, both at the amateur and professional competitive levels, and the sport is not only a sport but also an important platform for teamwork, leadership development and cross-cultural exchange. However, soccer is also associated with a range of risks of sports injuries that have a profound impact on athletes' health, competitive careers, and quality of life.

Soccer players suffer from different types of injuries such as ACL tears in the knee, ankle sprains, muscle strains, and head injuries. Each type of injury has its own specific characteristics and treatment needs. Even the same type of injury can have different levels of severity in different situations. Some injuries are just minor strains or sprains,

while others are severe breaks or tears. This means that treatment and rehabilitation programs need to be individualized based on the severity of the injury (Wei, 2019). Soccer players have physical and anatomical characteristics that affect their risk of sustaining an injury. For example, younger athletes whose skeletal growth plates are not closed are more susceptible to specific types of injuries, while older athletes face different challenges such as decreased bone density (Wang, 2018). Each athlete has a different physical condition, athletic history, skill level, and lifestyle, which also affects their risk of sustaining an injury (Xiong, 2020). An experienced athlete is more conscious of taking precautions while a novice is less careful. The rehabilitation process for soccer injuries is usually more complex and lengthy than one would expect (Zhang, 2020). Rehabilitation involves multiple stages of pain relief, restoration of function, and gradual increase in physical activity. Frustration and psychological stress can occur during rehabilitation, which requires professional support (Tang, 2019). Once an athlete recovers and returns to play, they remain at risk of re-injury. Incomplete rehabilitation or early return to play can increase the re-injuryability. Certain soccer injuries can have an impact on an athlete's long-term health. For example, concussions lead to long-term cognitive and neurological problems, while chronic joint problems continue to plague athletes after retirement.

sports injury is not limited to the physical level; they also have a wide range of effects on the psychological and social levels. physically, sports injuries lead to pain, impaired function and rehabilitation challenges. Psychologically, sports injuries lead to mental health issues such as anxiety, depression, and low confidence in recovery. In addition, on a social level, sports injuries lead to disconnection from the team, affecting the athlete's social life and self-identity.

Effective rehabilitation support is critical to the rehabilitation and career of soccer players. Rehabilitation support includes not only physical rehabilitation, but also psychological support, functional recovery, rehabilitation goal setting, and social support. It aims to help athletes return to play as early as possible and reduce the risk of re-injury. However, the quality and comprehensiveness of rehabilitation support varies across regions and teams, which affects the rehabilitation process and outcomes of athletes (Qiu, & Li, 2020).

Although a number of studies have been conducted on soccer sport injuries and rehabilitation support, there are still some limitations. Most of the existing studies have focused on the physical dimensions of sport injuries and less on the psychological and social dimensions (Li & Zhang, 2020). In addition, studies on rehabilitation support also have limitations and lack a comprehensive analysis of multidimensional support (Meng & Wu, 2018). Therefore, there is a need for an in-depth study on the multidimensional effects of soccer sport injuries and their rehabilitation support to fill the gap in this research area.

The importance of this study is that it will provide insight into the multidimensional effects of soccer sport injuries, including physical, psychological and social dimensions, as well as providing comprehensive rehabilitation support. By assessing the level of sport injury, the level of rehabilitation support, and correlations, this study will help to develop more effective rehabilitation programs and improve the quality of athletes' rehabilitation. Also, analyzing the perceptions of soccer students will provide valuable insights for future

rehabilitation professionals to better meet the needs of athletes. Ultimately, this study contributes to improving the physical health and mental health of soccer players and promoting the sustainable development of the sport.

2. Research Design

The purpose of this study is to investigate the relationship between the sports injury experiences of college soccer majors and rehabilitation support, as well as the effectiveness of rehabilitation support provided to this population. To accomplish this goal, the researcher will utilize a mixed research methodology that combined quantitative and qualitative research designs.

The researcher will conduct a cross-sectional study to collect data in a quantitative manner. This will include the use of a structured questionnaire to measure and record information on the knowledge, preparedness and application of soccer sport injuries. The researcher will conduct a comprehensive survey of 180 soccer students from Jiaqing College and Guangzhou Institute of Physical Education to ensure that the data are comprehensive and representative.

In order to gain a more in-depth understanding of the effectiveness of recovery support and the students' experience of recovery, the researcher will use semi-structured interviews. The researcher will select a subset of respondents, with a particular focus on students who have shown particular trends or experiences in quantitative studies, to conduct in-depth interviews. This will enable the researcher to gather detailed information about rehabilitation support, including insights into physical rehabilitation, psychological support, functional recovery, rehabilitation goals, and social support.

The design of this study is sound in that it allowed the researcher to delve into the sports injury experiences and rehabilitation support of soccer majors from multiple perspectives. The quantitative data provided broad generalized information and the qualitative data provided depth of understanding and insight. This mixed-methods approach will help to answer the research questions, reveal the needs and experiences of soccer students with regard to sports injuries and rehabilitation, and provide strong recommendations for future rehabilitation support programs.

3. Population and Sampling Technique

The population of the study will be soccer students from Jiaqing College and Guangzhou Sport University, specifically, 68 soccer students from Jiaqing College and 112 soccer students from Guangzhou Sport University, for a total of 180 students.

This study will utilize a comprehensive survey method, also known as census (Census) sampling technique. This is due to the fact that the total population of the study is relatively small at 180 individuals, thus allowing the entire population to be administered and surveyed. The goal of this study is to obtain detailed information about each soccer major in order to gain insight into their experiences with sports injuries and rehabilitation support. By surveying the entire population, greater data accuracy and reliability can be obtained. A comprehensive survey will ensure that the results of the study are representative of the entire population and will not introduce sampling error due to sample selection.

4. Research Instrument

This study will use a self-edited questionnaire as the main

data collection tool to study the required data and information.

The questionnaire consists of three parts, the first part involves information about the gender, age and grade of the respondents. The second section was the Sports Injury Scale, which included questions about knowledge, preparedness and application. The third section is the Rehabilitation Support Scale, which consists of six dimensions, physical rehabilitation, psychological support, functional recovery, rehabilitation goals, and social support. Each dimension consists of five entries.

During the questionnaire design phase, experts in the field of kinesiology were consulted to ensure that the content of the questions effectively reflected the key variables of the study. The expert review helped to validate the content validity of the questionnaire to ensure that the questions were measuring the concepts to be studied.

In order to assess the reliability of the questionnaire, an internal consistency test will be conducted. Specifically, the researcher used Cronbach's alpha coefficient to measure the internal consistency of the dimensions of the questionnaire. This helps to determine whether the questions in the questionnaire are highly consistent under the same dimension. The researcher will report the results of the Cronbach's alpha coefficient at the data analysis stage.

Pre-testing of the questionnaire will be conducted prior to formal data collection. This involves testing the questionnaire on a group of 20 student respondents to check for clarity, comprehensibility of the questions and feedback from the respondents. Based on the results of the pre-testing, the researcher made some fine-tuning of the questionnaire to ensure its validity and credibility for the formal data collection.

5. ANALYSIS AND INTERPRETATION OF DATA

1.The assessment of sports injury of the student - respondents

Table 1. Summary Table on the level of sports injury of the student - respondents

sports injury	Mean	SD	Qualitative Description	Interpretation
Knowledge	3.08	.549	Agree	Good
Preparedness	3.28	.516	Agree	Good
Application	3.23	.496	Agree	Good
Over-all Mean	3.20	.485	Agree	Good

N=180. Parameter limits: 3.51-4.00 Strongly agree/Excellent; 2.51-3.50 Agree/Good; 1.51-2.50 Disagree/Fair; 1.00-1.50 Strongly disagree/Poor

Table 1 summarizes the overall self-assessment of the students participating in the study in terms of knowledge, preparation and application of sports injuries. The results of the study showed that the overall self-assessment of the students in terms of knowledge, preparation and application of sports injuries was at a high level. The range of means for each indicator was 3.08 to 3.33, while the composite mean was 3.20. This indicates that students demonstrated positive attitudes and high levels of self-assessment in all three areas. The standard deviations ranged from 0.485 to 0.549, which

indicates that students had relatively high levels of consistency in their self-assessment of these dimensions. Smaller standard deviations mean that students were relatively consistent about their performance in the areas of knowledge, preparation, and application of sports injuries.

The indicator with the highest mean was in the area of coping with sports injuries, i.e., "I follow the advice and plans of healthcare professionals regarding rehabilitation after injury" with a mean of 3.33, indicating that students showed the highest level of self-awareness and motivation in accepting the advice and plans of healthcare professionals. The indicator with the lowest mean was in the area of knowledge of sports injuries, i.e. "I understand the treatment of different injuries in football" with a mean of 2.86. This indicates that the students' knowledge of treatment methods is relatively weak and requires more in-depth training. Overall, the composite mean was 3.20, indicating that students demonstrated overall positive attitudes and competence in relation to sports injuries. This is key for sport students and athletes as they need to be equipped not only with the knowledge to prevent injuries, but also to be able to cope and rehabilitate effectively after an injury. These results provide guidance for future education and training to continue to improve the overall level of student performance in relation to sports injuries.

Students' knowledge of treatment methods was relatively weak, a finding consistent with Qiao's (2020) study, emphasising the relative lack of knowledge amongst athletes regarding injury treatment methods. Students had a positive attitude towards taking preventive measures and possessed a good level of preparedness to prevent sports injuries. This is consistent with Tan et al's (2022) study, which emphasised the importance of adequate warm-up, appropriate sports equipment, etc. for injury prevention. In particular, the best performance was in the area of "I follow the advice and plans of healthcare professionals regarding post-injury rehabilitation". This is in line with Wang's (2018) study and emphasises the importance of professional treatment for post-injury rehabilitation. They need to have the knowledge to not only prevent injuries, but also to be able to cope and rehabilitate effectively after an injury.

Table 2. Summary Table on the level of Rehabilitation support of the student - respondents

Rehabilitation support	Mean	SD	Qualitative Description	Interpretation
physical Rehabilitation	3.12	.586	Agree	Effective
Psychological support	3.02	.602	Agree	Effective
Functional recovery	3.18	.539	Agree	Effective
Rehabilitation goals	3.15	.542	Agree	Effective
Social Support	3.17	.533	Agree	Effective
Over-all Mean	3.13	.509	Agree	Effective

N=180. Parameter limits: 3.51-4.00 Strongly agree/Very Effective; 2.51-3.50 Agree/ Effective; 1.51-2.50 Disagree/ Not Effective; 1.00-1.50 Strongly disagree/ Strongly Not Effective

These findings provide guidance for future education and

training to continue to improve the overall level of student performance in relation to sports injuries.

2.The assessment of the level of Rehabilitation support of the student - respondents

Table 2 summarizes aspects of student rehabilitation support, providing a quantitative description of the level of rehabilitation support through means and standard deviations.

The mean student rating of physical rehabilitation support was 3.12 with a standard deviation of 0.586. this indicates that students generally found physical rehabilitation support to be effective, with a high mean and low fluctuation in ratings, reflecting consistent agreement in this area. Students' ratings of psychological support averaged 3.02 with a standard deviation of 0.602. this implies that students overall agreed that psychological support was effective, although there was a slight fluctuation in student agreement in this area compared to the other areas. In terms of functional recovery, students' mean rating was 3.18 with a standard deviation of 0.539. This shows that students generally agreed with the support in terms of functional recovery and the relative consistency of the ratings suggests that students felt positively supported in the functional rehabilitation programme. Students' ratings of rehabilitation goals averaged 3.15 with a standard deviation of 0.542. This indicated general agreement with the validity of the rehabilitation goals and relatively consistent ratings, reflecting positive perceptions of setting and achieving rehabilitation goals. In terms of social support, students' mean rating was 3.17 with a standard deviation of 0.533. Students' perceptions of social support were overall positive with relatively consistent ratings, indicating that support from family, team, and peers positively impacted the recovery process. The overall mean of the table is 3.13 with a standard deviation of 0.509. this indicates that students' perceptions of

the overall level of rehabilitation support are positive with a high mean and relatively consistent ratings.

Physical rehabilitation plays a key role in the rehabilitation process and helps to accelerate students' physical recovery through professional physiotherapy and individualised training programmes. Huang (2021) study has highlighted the effectiveness of physical rehabilitation especially in the rehabilitation of athletes to restore their motor skills and physical condition. Psychological support plays an important role in rehabilitation and includes psychological counselling, psychological rehabilitation programmes and emotional support from coaches and teammates. Xiong (2020) study has shown that positive psychological support promotes emotional adjustment, self-confidence and rehabilitation outcomes in athletes. Positive perceptions of functional recovery indicated that students perceived rehabilitation programmes focusing on the gradual restoration of athletic ability and strength to be critical to their recovery. Tsai and Chen (2020) study highlighted the critical nature of functional recovery, emphasising that gradual, individualised rehabilitation programmes are essential to the success of an athlete's recovery. Liu (2021) study demonstrated that clear rehabilitation goals could motivate and self-discipline athletes, promote better participation in the rehabilitation process, and improve rehabilitation outcomes. The impact of social support, including support from family, team, and peers, on the rehabilitation process is well established in research. Students' perceived social support promotes their emotional state, self-confidence and commitment to the rehabilitation programme.

3.The relationship between level of sports injury of the student - respondents and the level of rehabilitation support

Table 3. Relationship between sports injury and rehabilitation support

		Knowledge	Preparedness	Application	sports injury
physical Rehabilitation	r	.812	.734	.798	.840
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant
Psychological support	r	.670	.594	.635	.681
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant
Functional recovery	r	.752	.745	.781	.815
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant
Rehabilitation goals	r	.744	.715	.721	.781
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant
Social Support	r	.699	.660	.697	.736
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant
physical exercises	r	.808	.757	.797	.846
	sig	0.000	0.000	0.000	0.000
	Decision on Ho	Rejected	Rejected	Rejected	Rejected
	Interpretation	Significant	Significant	Significant	Significant

N=180. Level of Significance: *is noteworthy at the 0.05 level. (2-tailed)

Table 3 presents the correlation coefficient (r-value) and the significance of the correlation (p-value) between sports injuries and rehabilitation support. The table includes the relationship between different aspects of rehabilitation support, such as knowledge, preparation, application, social support, and physical activity, and sports injuries.

All correlation coefficients (r-value) showed significant positive correlation. This means that in this study, as the number of sports injuries increased, the aspects of rehabilitation support increased accordingly. Specifically, rehabilitation support related to sports injuries included physical rehabilitation, psychological support, functional rehabilitation, rehabilitation goals, social support, and physical exercise. It can be noted that the correlation coefficients (r-values) are relatively high, indicating that these associations are strong. In addition, the p-value is less than the level of significance, thus this study rejects the null hypothesis that these associative relationships are significant.

Xiong and Huo (2022) study have emphasised the need for integrated rehabilitation support. Integrated interventions in physical rehabilitation, psychological support, social support and rehabilitation goals help to improve rehabilitation outcomes. Emotional state and level of social support play a key role in the rehabilitation process for sports injuries, positively influencing the psychological well-being and rehabilitation outcomes of the injured person. This is in line with the findings of Zhang et al (2021) study that moderate physical exercise is essential for rehabilitation and functional recovery. Proper exercise promotes muscle strength and joint flexibility, which helps to improve the rehabilitation of those with sports injuries. Understanding the needs of students with sports injuries in all aspects of the rehabilitation process, especially in terms of knowledge, preparation, application, social support, and physical activity, can help provide more targeted and effective support to facilitate their recovery process (Zhou & Xu, 2019).

This finding is critical to understanding the comprehensive rehabilitation support needed for students with sports injuries. Comprehensive interventions in multiple areas such as physical rehabilitation, psychological support, and social support are vital to their recovery process.

6. Conclusion

In terms of the level of sports injuries, students demonstrated a high level of knowledge, preparation and application of sports injuries, showing a concern for sports injuries and an awareness of active prevention. In terms of rehabilitation support, students showed positive performance in physical rehabilitation, psychological support, functional recovery and social support, which contributed to their overall recovery. correlation analyses revealed a significant positive correlation between the level of sports injuries and the level of rehabilitation support, emphasizing the importance of rehabilitation support in dealing with sports injuries.

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