

# Analysis of Sports Injury Knowledge in Ball Games Athletes

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**Abstract**—Sports injury is a condition that worsens the quality of human movement when doing sports, both in training and during competition. As the intensity of exercise increases, it will also increase the risk of injury. Skills are not just technical, physical, mental, and strategic skills that every athlete must-have. Knowledge of sports injuries must also be a concern for all sports players, including athletes. The purpose of this research is to describe the knowledge of sports injuries in big soccer athletes in Malang. This research method uses descriptive quantitative by using a survey approach. The number of respondents in this study was 21 male athletes of soccer, basketball, volleyball and futsal, KONI Malang City using Proportionate Stratified Random Sampling. The results of the study using the IBM SPSS 26.0 analysis technique obtained a mean value of 137.67 and a standard deviation of 15.4. This means that the level of knowledge of respondents in the medium category is 10 or 47.6% of the total respondents. The results of the study can be concluded that the level of knowledge of big soccer athletes regarding sports injuries in KONI Malang is that most of the athletes are in the moderate category. It is necessary to increase understanding of sports injuries and how to treat them, to identify as early as possible the injuries that will occur.

**Keywords**—Knowledge, Injury, Sport Rehabilitation.

## I. INTRODUCTION

Sports injuries occur due to trauma that comes from injuries caused by impact and overuse caused by overtraining. In addition, it does not only contact sports but sports that are a race, namely sports that are one-way without physical contact, also have a risk of injury.

Sports injuries that are in the nature of physical contact are certain to occur because of physical collisions, such as in martial arts, namely, fighting punches or kicks. The mechanism of physical contact injury is divided into direct and indirect contact. Direct physical contact is physical contact in which the type of injury is direct physical contact with fellow athletes, indirect physical contact is a type of contact that does not lead to the injured part but contributes to the chain of injury [1].

Sports, both recreational and achievement sports, are activities that can provide benefits for physical and mental health. However, sports that are carried out without heeding health principles can also have a detrimental impact on the intermediate body among others, in the form of sports injuries. Sports injuries that occur in athletes of performance sports, in addition to disturbing health, can also reduce the athlete's chance to perform optimally.

The risk of injury is higher in performance sports than in sports that are only for fitness. Performance sports are required to meet certain targets so that every sports player or athlete who is included in an achievement sport will try harder whatever the risks are in meeting these targets. In addition, the sport of big ball games is one of the sports with the highest incidence of injury. In terms of injury classification, everything can happen in each classification of this sport. This type of sport requires a good physical fitness component, because in the game sometimes the tempo changes from slow to fast and vice versa.

The results of research conducted at the Telaga Utama Football Association in Yogyakarta show that the level of knowledge of the injuries of most of the participants is 53% in the poor category, 46% in the moderate category and the rest in the good category [2].

The appearance of such achievements of athletes from Malang City will further increase the motivation of other athletes. KONI Malang City also provides a place for prospective athletes to become professionals. With early age coaching through scouting or talent scouting and monitoring of training programs for each sport. From the steps taken by KONI Malang, it is certainly expected to produce many athletes who are superior both physically, mentally, and morally. And be able to compete at the national and even international levels by being equipped with skills. Skills are not just technical, physical, mental, and strategic skills that every athlete must have. Knowledge of sports injuries must also be a concern for all sports players, including athletes.

Based on the above problems, the purpose of this research is to describe the knowledge of sports injuries in big soccer athletes in Malang City.

## II. METHODS

This research method uses descriptive quantitative by using a survey approach.

The number of samples in this study was 21 male athletes with soccer, basketball, volleyball and futsal, KONI Malang City using the Proportionate Stratified Random Sampling technique.

The data collection technique in this study is to use a questionnaire and is presented in the form of google form. The scale in this research questionnaire uses a Likert scale with scale of 5. Data analysis uses the IBM SPSS version 26.0 statistical application, and the categorization of knowledge is based on knowledge norms.

Major soccer athletes in this study were male athletes who participated in the 2019 Porprov event with an age range of 19-22 years. Injury knowledge in question is knowledge of the terms in injury, prevention, first treatment, and rehabilitation of sports injuries. Meanwhile, big football game sports include soccer, basketball, volleyball and futsal.

Data were analyzed using knowledge norms as follows:

TABLE I. KNOWLEDGE LEVEL NORMS

No	Norms	Category
1	$M + 1,5 SD < X$	Excellent
2	$M + 0,5 SD < X \leq M + 1,5 SD$	Good
3	$M - 0,5 SD < X \leq M + 0,5 SD$	Moderate
4	$M - 1,5 SD < X \leq M - 0,5 SD$	Bad
5	$X \leq M - 1,5 SD$	Poor

M (Mean), SD (Standar Deviation), X (Score)

And the calculation of the respondent's level of achievement (RLA) uses the following norms

TABLE II. RESPONDENTS LEVEL OF ACHIEVEMENT NORMS

No	Criteria	RLA (%)
1	Excellent	90-100
2	Good	80-89
3	Moderate	70-79
4	Bad	55-69
5	Poor	1-54

**III. RESULTS**

The results of the data explain that the level of knowledge of sports injuries of big soccer game athletes in Malang City has an average or mean of 136.77 and a standard deviation of 15.4. Based on the mean and standard deviation values obtained, then analyzed based on categorical norms, the level of knowledge of sports injuries in big soccer game athletes in Malang City is included in the medium category.

TABLE III. SCALE STATISTIC

Mean	Variance	Std. Deviation	N of Items
137,67	237,4	15,409	40

From the results of table 5, most of the respondents' knowledge level was in the medium category, namely the highest amount, namely 10 or 47.6% of the total respondents. Then the smallest value is in the very low category, namely 1 or 4.8% of the total respondents, while none in the very good category.

And the results of the respondent's level of achievement presented in table 4 can be analyzed that the maximum value of the respondent's achievement is obtained in the preventive factor, while the minimum value is obtained in the terms factor in sports injuries.

TABLE IV. RESPONDENTS LEVEL OF ACHIEVEMENT

No	Factor	RLA (%)	Category
1	Istilah dalam Cedera	63,8	Bad
2	Pencegahan	75,4	Moderate
3	Penanganan	68,9	Moderate
4	Rehabilitasi	68,2	Moderate
RLA (%) Total		69,1	Moderate

The level of achievement of respondents for all sports, it is found that all sports are in the medium category. With the lowest score obtained by the sport of football with an achievement level of 65.9% and the highest level of achievement obtained by the sport of basketball with an achievement level of 71.2%.

TABLE V. KNOWLEDGE LEVEL CATEGORIZATION

Norms	Category	Total	Percentage (%)
$X \leq M - 1,5 SD$	Poor	1	4,8
$M - 1,5 SD < X \leq M - 0,5 SD$	Bad	3	14,3
$M - 0,5 SD < X \leq M + 0,5 SD$	Moderate	10	47,6
$M + 0,5 SD < X \leq M + 1,5 SD$	Good	7	33,3
$M + 1,5 SD < X$	Excellent	0	0
TOTAL		21	100,0

M (Mean), SD (Standar Deviation), X (Score)

**IV. DISCUSSION**

Sports injury knowledge must be mastered by every sports player. Knowledge of the terms factor, prevention, treatment, and rehabilitation of sports injuries is the basis for knowledge of sports injuries. Because this will determine the attitude of sports injuries.

There are still many who consider the ankle and hamstring as one type of injury, even though each of the two is part of the body. This must be considered considering each type of injury, the handling will also be different. The definition of sports injury is a fluid phenomenon. Therefore, sports injuries should not be seen as a health condition in itself but should be seen as an interaction between physical damage and contextual factors [3].

Athletes also do not understand the length of time in the event of a sports injury, are still hesitant in answering an acute injury is an injury that occurs immediately or immediately.

Knowledge of the duration of the injury is very important in determining how severe and how long it will take to recover. Thus, the possibility of taking a stance on sports injuries in athletes will have an effect on physical health conditions. When a sports injury occurs, the athlete will try to suppress the pain received due to the injury which risks becoming severe and puts more emphasis on competing. Athletes do not think about the risks they take about the long-term nature of the injury. This behaviour is based on the competitive nature of athletes that increase with age [4]. This condition can worsen the level of injury if you are forced to play, besides that it can result in a higher cost burden in sports rehabilitation.

Prevention of sports injuries is a factor in terms of efforts to reduce or avoid everything that causes injuries to athletes and themselves. However, in the use of protective equipment or protection is still underestimated by athletes, comfortable equipment and equipment will greatly help prevent sports injuries, help movement in sports more ergonomically. In addition, it also avoids minor inflammation due to the equipment and equipment used. The best chance of reducing sports injuries can be through improved regulation and protective equipment [5].

An exercise program is also important in addition to improving performance and prevention of the occurrence of injury. Without a clear exercise program, the risk of sports injuries in exercising can be worse. Other strategies such as training load, well-being monitoring, sleep or nutrition can be used as education for athletes and coaching staff as strategies to reduce sports injuries [6].

Handling sports injuries is a factor that requires very good insight because if the first handling of the injury is wrong, the sports injury suffered will be very severe and even risk permanent disability. Early prompt administration and wound management must be given as soon as possible to avoid complications arising from injuries [7].

The results showed that many athletes thought that it was the right thing to insert the bone that came out during an open fracture. While this is strictly prohibited in medicine because the bone that comes out has been infected by germs or viruses, the first correct snack is that it should only be a splint. Irrigation and debridement of wounds, reduction and stabilization of fractures, prophylaxis of infection by antibiotics and initial soft tissue coverage are important steps of treatment [8].

Athletes' understanding of dealing with sprain injuries is still low. Athletes are more likely to use heating creams or balms when dealing with sprain injuries. RICE is the first method of treatment that aims to relieve swelling and regulate blood flow to the injured area. As a combined therapy modality, the use of RICE plus multimodal physiotherapy compared to RICE alone is of no additional benefit. Both methods provide pain reduction, improve function and reduce swelling in the sprain [9].

Other results indicate that the athletes of big soccer games in Malang City do not fully understand sports rehabilitation. they still do not understand the procedures used in undergoing exercise in sports rehabilitation. Understanding the phases of

training needs to be used as a reference for undergoing training in sports rehabilitation. Many athletes answer that the phases of training can be carried out alternately or not coherently, but the training phases in sports rehabilitation must be coherent and carried out in each phase based on the training objectives. The findings in this study were that many considered athletes to be able to return to training to the field or on the team after surgery by doctors. This assumption is completely wrong because after surgery the athlete has to fulfil the phases of recovery training. The initial phase of recovery is the phase to reduce inflammation or injury symptoms. The sub-acute phase involves Range of Motion (ROM) restoration and muscle strengthening. The Transition Phase is the phase of improving the performance according to the sport and the level of each athlete. Its development must be continuous with functional criteria based on time to be able to determine the next stage [10].

Injuries are a common phenomenon in sports, both in contact sports and non-physical contact sports. And if not handled properly and quickly it can result in disabilities in athletes. Rehabilitation is the process of fully restoring the function of the injured athlete. It consists of various therapeutic modalities such as exercises and health practices that are carried out immediately after the injury and progress to full recovery [11].

Past research has shown that resistance exercise is most effective at developing strength in joints and weak muscles and thus plays an important role in rehabilitation. The use of deep loads The exercise is generally used through several movements from extension to flexion of the affected arm and leg. This exercise can use weight support, rope, or can use body weights.

Before an athlete enters the return to sport phase, it is necessary to test for psychosocial factors including trauma and discomfort when doing movements. This really underlies the decision for athletes to train back on the field and be included in the team list to compete. Testing must also include specific movements related to athletes with intensity and speed near the maximum [12].

Rehabilitation programs should restore movement and proprioception, maintain cardiovascular fitness, and increase muscle strength, endurance, and strength, especially through closed-chain exercises. Measurement of rehabilitation outcomes focuses on the level of individual damage before and after rehabilitation.

Thus the decision for athletes to continue training in the team can be obtained from the results of these tests. For maximum results and prevent injury, do not recur when starting the competition.

## V. CONCLUSION

Based on the results of the research, the results of processed data show that the level of knowledge of big football athletes regarding sports injuries in KONI Malang is that most of the athletes are in the moderate category, while the rest are in the very low, low, good category, and none of them is athletes. which falls into the very good category. There

needs to be an increased understanding of sports injuries and how to treat them, in order to identify as early as possible the injuries that will occur. Furthermore, athletes can get an accurate picture of the injury and take into account the prevention, first treatment, and rehabilitation of sports injuries.

Researchers' suggestions based on the results of the research are: (a) For the Indonesian National Sports Committee (KONI) Malang City, it is better to provide the latest studies on sports injuries and increase safe promotion of sports injuries, (b) For the Sports Coach of Big Ball Game Malang City, it is better to provide the theoretical understanding and practice about sports injury knowledge, (c) For Athletes in Big Football Game of Malang City, it is better if they continue to improve their understanding of sports injuries starting from the terms in injuries to sports rehabilitation so that the risk of sports injuries can be minimized in the future.

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