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Original Article Research

Exploring Understanding of Sports Injuries Among Beginning Athletes: A Study of Students

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Abstract

The urgency of this research stems from the fact that even professional athletes still have a moderate level of knowledge regarding sports injuries. What about novice athletes who have only recently entered the world of athletics? This is a significant question that must be answered with evidence from academic research. This study aims to identify and analyze the level of understanding of sports injuries among novice track and field athletes at Gorontalo State University. Using a descriptive survey method, the study involved 24 students who had participated in basic athletic training for at least two months. The instrument used in this study has been proven valid with an r table value of 0.514 and a significance level of 5% and a reliability of 0.922 consisting of 33 questions. The data analysis technique is descriptive statistics using SPSS version 25. After the descriptive data is obtained, it is categorized using the Five Scale Conversion (KSL) formula. The results indicate that athletes' understanding of sports injuries is generally moderate, with most having a sufficient understanding of the types of injuries. However, knowledge regarding injury management and prevention remains low. Based on descriptive statistics, most participants had a poor understanding of injury prevention measures. A deeper understanding of sports injuries, management, and prevention is crucial for reducing injury risk and improving athlete performance. This study suggests the need for better education regarding sports injuries to optimize the safety and effectiveness of athletic training.

Keywords: injury understanding; novice track and field athletes; students

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1. INTRODUCTION

Sports are a popular activity, especially among students (Nurkhoiroh et al., 2025). Athletics, as a sport that requires physical endurance and high technical skills (Haryanto,

Suardika, et al., 2024; Kubukeli et al., 2002), s often the primary choice for those seeking to develop themselves in this field. However, as with all sports, track and field athletes are not immune to the risk of injury (Edouard et al., 2023; Erlangga et al., 2024). In fact, a study in the UK concluded that 111 athletes in a national program were prone to hamstring injuries, Achilles tendinopathy, and soleus muscle strains (Kelly et al., 2022). Sports injuries are also a major problem faced by athletes, especially those just starting out.

Based on previous research, sports injuries in athletes are often caused by a lack of knowledge about proper injury prevention and management (Simatupang et al., 2022; Triyanita & Pambudi, 2023). Beginner athletes tend to lack experience or understanding of the potential risks of injury, as well as how to avoid them (Plaikari & Yusuf, 2025; Siregar & Nugroho, 2022). Furthermore, their understanding of injury mechanisms and their impact on the body is often limited. This, of course, poses risks not only to their physical health but can also affect their performance and motivation to continue training.

Previous research was conducted by researchers in 2024 with the same theme but different subjects. The previous study used professional athletes who were members of clubs and trained at Merdeka Stadium in Gorontalo Province, concluding that the overall results were the highest percentage in the moderate category (Haryanto, Duhe, et al., 2024). Another question arose in the researchers' minds: even professional athletes have a moderate level of knowledge. What about beginners? This certainly needs to be proven, especially since the research subjects are university students. This provides a gap in this research to address these possibilities.

A preliminary study conducted by the researchers using interviews with coaches and students involved in athletic training revealed that some students still had unresolved chronic injuries but continued to train, resulting in pain during high-intensity training. Some even admitted that they immediately went to a massage therapist when they sprained their ankles. This wasn't always the case, but given that some students still lacked an understanding of sports injuries, the researchers sought to ascertain the understanding of these novice athletes and identify solutions.

With the increasing number of college students involved in sports, particularly athletics, it is important to understand their understanding of sports injuries. Therefore, this study aims to identify and analyze the level of understanding of novice athletes, particularly college students, regarding sports injuries. This research is expected to provide insight into the importance of sports injury education in preventing and managing potential injuries.

A good understanding of sports injuries is not only important for athletes but can also improve the quality of their training and endurance. Therefore, this research is expected to make a significant contribution to the development of safer and more effective training programs, as well as provide useful information for coaches, mentors, and students involved in athletics.

2. METHOD

2.1 Participants

The participants of this study consisted of 24 students from Universitas Negeri Gorontalo who had participated in a basic athletics training program for a minimum duration of two months, covering events in running, throwing, and jumping. Participants were selected purposively based on their active involvement in the athletic training sessions. This purposive technique uses certain

considerations that are in accordance with the criteria desired by the researcher (Sugiyono, 2017). All participants provided informed consent prior to their inclusion, and their responses were treated confidentially in accordance with ethical research principles.

2.2 Research Design

This study employed a quantitative descriptive design using a survey method. This design aims to describe the characteristics of a particular population or sample based on data collected through surveys with instruments such as questionnaires (Sugiyono, 2017). Specifically, it aims to describe and analyze the level of understanding of sports injuries among novice athletes without manipulating any variables. This approach was considered appropriate to identify trends, patterns, and categorical distributions of participants' understanding regarding sports injury concepts.

2.3 Instruments

The research instrument used in this study was a structured questionnaire previously tested for validity and reliability by (Suranto, 2021). The validity test showed that all items met the criteria with r-count ≥ r-table (0.514) at a 5% significance level ($p < 0.05$). The instrument demonstrated a high level of reliability, indicated by a Cronbach's Alpha value of 0.922.

The questionnaire consisted of 33 items distributed across three domains: factors causing sports injuries, injury management, and injury prevention. Each item was designed using a Likert scale to measure the respondents' level of understanding toward each domain.

Here is the questionnaire:

Table 1.

Questionnaire Questions

No	Questions
1.	Sports injuries are injuries that occur to the muscles and body's movement system caused by sports activities which can cause discomfort and pain as well as impaired function in the injured part.
2.	Swelling, increased temperature, redness and pain as well as decreased function in the injured area are signs of chronic injury.
3.	Muscles, joints and bones are parts of the body that are at high risk of injury due to sports activities.
4.	Various types and kinds of injuries are often found in physical activities such as sports, but in general the types of sports injuries are bruises, injuries to muscles or tendons and ligaments, dislocations, broken bones, muscle cramps, bleeding in the skin, and fainting.
5.	Reduced blood flow, oxygen, and glucose are signs of bruising.
6.	Sprain is an injury that occurs to the ligament caused by pulling or stretching beyond normal limits.
7.	A fracture is a condition where there is a crack, break or break in either the bone or cartilage.

8.	Fatigue when doing physical activities such as exercise can cause the accumulation of metabolic waste such as lactic acid in the muscles which causes muscle performance to be disrupted so that the muscles and nerves are stimulated, resulting in muscle cramps.
9.	Dislocation is an injury characterized by a joint falling out of its proper place. Dislocation is an injury characterized by a joint falling out of its proper place.
10.	Injuries to the shoulder joint that often occur are luxation or subluxation, this cannot be separated from the shoulder joint which is globeoid in nature (the joint head enters less than halfway into the joint cup) which increases the risk of shoulder joint displacement.
11.	The injury in the image below is called a sprain. 
12.	The image below shows a fracture injury based on the continuity of the fracture, namely a complex and stress fracture. 
13.	A lump caused by the presence of mucus in the enlarged joint covering as shown in the picture is called a ganglion. 
14.	Based on the severity, sports injuries are classified into three, namely grade I, grade II and grade III.
15.	Grade I bruises, abrasions and sprains can be classified as minor injuries.
16.	Partial tears of tendons, muscles, or ligaments can be classified as minor injuries.
17.	Treatment of acute injuries using the RICE method (Rice, Ice, Compression, Elevation)
18.	Applying ice to the injured area serves to widen the blood vessels (vasodilation).
19.	The principle of treating acute injuries is to reduce signs of inflammation and pain.
20.	Massage and exercise therapy are among the methods of treating sports injuries.
21.	For serious injuries such as grade III sprains and strains and fractures (broken bones), the correct treatment is surgery.

22.	Exercise therapy is carried out in stages, and it is not recommended to proceed to the next stage if there are still problems or disturbances in the previous stage.
23.	It is not recommended to treat bleeding on the skin by massage.
24.	The Re-integration (Transition) phase in rehabilitation aims to restore and increase the range of joint motion or ROM and restore the muscle's ability to relax and stretch from its previous size (extensibility) as well as increase muscle endurance data.
25.	Destroying residual deposits such as lactic acid found in muscles, improving blood flow, stretching joints and returning injured joints to their original position are the benefits of treating injuries using exercise therapy methods.
26.	Friction, effleurage, traction and reposition are methods of massage.
27.	Prevention is the earliest anticipation carried out by sportspeople or athletes in facing the possibility of sports injuries.
28.	Excessive movement can increase the risk of sports injuries.
29.	Knowledge about sports injury prevention is only for sports instructors.
30.	Selecting sports facilities that are appropriate to the characteristics of the sport being carried out is an effort to prevent sports injuries.
31.	Warming up is one way to prevent sports injuries.
32.	Improving sports skills is not included in sports injury prevention efforts.
33.	Managing food and nutrition during exercise is not part of the effort to prevent sports injuries.

2.4 Procedures

The study was conducted through several phases. First, the researcher informed participants about the study's purpose, procedures, and confidentiality agreement, followed by obtaining their informed consent. Second, participants independently completed the questionnaire within the allotted time. Third, the researcher reviewed the responses for completeness before proceeding to data analysis. Throughout the data collection process, the researcher acted as a facilitator to ensure the participants' proper understanding of each question. All research procedures were carried out ethically and did not interfere with the participants' regular athletic training activities.

2.5 Data Analysis

Data were analyzed using descriptive statistical analysis with the assistance of SPSS version 25. The analysis produced the mean and standard deviation values, which were used to categorize participants' understanding levels. The following classification formula was applied:

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Table 2.

Value Category Norms

No	KSL Formula	Value
1	Mean + (1,5.SD) or above	Very High
2	Mean + (0,5.SD) or above	High
3	Mean – (0,5.SD) or above	Moderate
4	Mean – (1,5.SD) or above	Poor
5	Mean – (1,5.SD) or below	Very Poor

The resulting descriptive data were interpreted to evaluate the level of understanding of novice athletics athletes regarding the causes, management, and prevention of sports injuries.

3. RESULTS

The data obtained through the questionnaire was then processed using SPSS to conduct descriptive statistical analysis. This process aimed to determine the distribution and trends of students' understanding of sports injuries experienced by novice athletes. The following descriptive statistical data are presented:

Table 3.

Descriptive Statistics

	Total	Sports Injuries	Injury Treatment	Injury Prevention
Mean	22.67	10.92	6.58	5.17
Std. Deviation	3.266	1.767	1.018	1.308
Minimum	17	8	4	3
Maximum	30	15	8	7

The table presents descriptive statistics describing novice athletes' understanding of sports injuries, injury management, and injury prevention. The average overall understanding score for participants was 22.67, with a significant range of scores, ranging from 17 to 30. This indicates differences in understanding levels between participants. Specifically, understanding of sports injuries recorded an average score of 10.92, indicating a better understanding than that of injury management and prevention. However, variation among participants was also quite high, with a standard deviation of 1.767.

In the sports injury management category, the average understanding of participants was only 6.58, indicating that their understanding of injury management steps is still relatively low. Variation in this category was smaller than that of sports injuries, with a standard deviation of 1.018. The knowledge score regarding sports injury prevention was the lowest, with an average of 5.17, indicating that the majority of participants lacked understanding of the steps that can be taken to prevent injuries. However, the difference in understanding between participants in this category was relatively small, reflected in the standard deviation value of 1.308.

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Overall, the results of this descriptive analysis suggest that although novice athletes possess a basic understanding of sports injuries, they still need to deepen their knowledge regarding injury management and prevention. This is important to note, given that injury prevention and management are vital to maintaining athlete health and performance. Furthermore, to provide a more in-depth assessment, an analysis will be conducted based on the established scoring categories.

Table 4.

Total

No	Interval Value	Frequency	Value	Percentage
1	> 28	3	Very High	12,5
2	24-28	4	High	16,7
3	21-23	13	Moderate	54,2
4	18-20	3	Poor	12,5
5	< 18	1	Very Poor	4,2

The table shows the frequency distribution and percentage of participants' understanding of sports injuries, their treatment, and prevention, based on predetermined score ranges. The data shows that most participants had moderate understanding, with 13 (54.2%) falling within the 21-23 score range. This indicates that the majority of novice track and field athletes have sufficient understanding, but still have room for improvement.

In the high category, four participants (16.7%) scored between 24 and 28, indicating that this group has a better understanding than the other groups. Conversely, only three participants (12.5%) scored above 28 in the very high category, indicating a small percentage of participants have a very good understanding of this topic. However, there were also 3 participants (12.5%) who were in the less category with scores between 18 and 20, and 1 participant (4.2%) who was in the very less category with a score of less than 18. This shows that although the majority of participants have sufficient or high understanding, there is still a small portion who need to be given more attention in developing their knowledge regarding sports injuries.

Table 5.

Understanding Sports Injuries

No	Interval Value	Frequency	Value	Percentage
1	> 14	1	Very High	4,2
2	12-14	8	High	33,3
3	10-11	12	Moderate	50,0
4	8-9	3	Poor	12,5
5	< 8	0	Very Poor	0,0

The table illustrates the frequency distribution and percentage of participants' understanding of sports injuries, based on predetermined scoring intervals. The data shows that

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the majority of participants, 12 (50.0%), fell into the moderate category, with scores between 10 and 11. This indicates that half of the participants had a sufficient understanding of sports injuries, although there was still room for further improvement.

Eight participants (33.3%) had a high understanding, with scores between 12 and 14, indicating that this group had a better understanding of sports injuries. On the other hand, three participants (12.5%) fell into the poor category, with scores between 8 and 9, indicating limited understanding in this area. No participants had a very poor understanding, with scores below 8, indicating that all participants had at least a basic understanding of sports injuries.

Overall, these results indicate that the majority of participants had a sufficient understanding, with a small number having a better or limited understanding of sports injuries.

Table 6.

Understanding Sports Injury Management

No	Interval Value	Frequency	Value	Percentage
1	> 8	0	Very High	0,0
2	7-8	16	High	66,7
3	6	4	Moderate	16,7
4	5	3	Poor	12,5
5	< 5	1	Very Poor	4,2

The table shows the frequency distribution and percentage of participants' understanding of sports injury management. Based on the data obtained, the majority of participants, 16 (66.7%), fell into the high category, with scores between 7 and 8. This indicates that most novice athletes have a fairly good understanding of sports injury management.

However, only 4 participants (16.7%) fell into the moderate understanding category, with a score of 6, indicating they possess basic knowledge of injury management but lack in-depth understanding. Three participants (12.5%) fell into the poor category, with a score of 5, and one participant (4.2%) fell into the very poor category, with a score below 5. This indicates that although most participants have a good understanding of sports injury management, some still need to improve their knowledge and understanding of this topic.

Table 7.

Understanding Sports Injury Prevention

No	Interval Value	Frequency	Value	Percentage
1	> 7	0	Very High	0,0
2	6-7	11	High	45,8
3	5	2	Moderate	8,3
4	3-4	11	Poor	45,8
5	< 3	0	Very Poor	0,0

The table illustrates the frequency distribution and percentage of participants'

understanding of sports injury prevention. The data shows that most participants fell into two categories: high and low. Eleven participants (45.8%) had a high understanding of sports injury prevention, with scores ranging from 6 to 7. However, the low category also included 11 participants (45.8%) with scores ranging from 3 to 4, indicating that nearly half of the participants still had limited understanding of injury prevention measures.

Only two participants (8.3%) had a moderate understanding, with a score of 5, indicating basic knowledge of injury prevention, although further development is needed. No participants scored in the very high or very low categories, indicating that most participants had quite varied understanding, with a large proportion falling between high and low levels. This suggests that sports injury prevention is an area that still needs improvement for the majority of participants.

4. DISCUSSIONS

Sports injuries are a common problem at all levels of physical activity, especially among novice athletes (Aqobah et al., 2023; Suardika et al., 2024). Novice athletes are often more susceptible to injury due to limited experience, lack of honed technique, and physical unpreparedness for high-intensity training (Hariyanto et al., 2018). Common types of injuries include muscle, ligament, and joint injuries, which can be caused by muscle strains, incorrect movements, or a lack of adequate warm-up (Abdullah et al., 2020; Pembayun et al., 2023). Proper management, including proper recovery and prevention, is crucial to prevent more serious injuries later. Effective injury prevention in novice athletes involves adequate education on correct technique, adequate warm-up, and training load management appropriate to individual abilities (Bahr & Holme, 2003). A good understanding of sports injuries is crucial for athletes to improve their performance and prevent further injury (Soni & Vora, 2025). By understanding the types of injuries and their causes, athletes can avoid technical errors and perform training more safely. Furthermore, understanding proper injury management allows athletes to take immediate action, reducing the risk of serious injury and accelerating recovery. This contributes to improved endurance and overall athletic performance.

Based on data obtained, novice athletes frequently experience muscle, ligament, and joint injuries, generally caused by imperfect technique, a lack of warm-up, and a sudden increase in training intensity. Injuries such as ankle sprains, muscle strains, and knee injuries are most common among novice athletes (Prieto-González et al., 2021). Most novice athletes tend to view injuries as normal and part of the learning process, although some are beginning to recognize the importance of proper injury management (Lee & Chang, 2023; Nam & Chang, 2020). According to other research, although injuries are considered common, many novice athletes lack an understanding of the risks and the importance of proper recovery to prevent further injury (Bank et al., 2022). Therefore, education and awareness regarding sports injuries are urgently needed among novice athletes.

Based on data obtained, novice athletes frequently experience muscle, ligament, and joint injuries, generally caused by imperfect technique, a lack of warm-up, and a sudden increase in training intensity. Injuries such as ankle sprains, muscle strains, and knee injuries are the most common among novice athletes (Halabchi & Hassabi, 2020). Most novice athletes tend to view injuries as normal and part of the learning process, although some are beginning to recognize the importance of proper injury management. Despite this perceived commonness, many novice athletes lack an understanding of the risks and the importance of proper recovery to prevent

further injury.

In general, the relationship between injury knowledge and injury behavior aligns with previous research findings (Hastuti, 2017). his will undoubtedly impact novice athletes, who, despite careful training, still experience injuries. However, a better understanding of the risks of injury during sports can reduce the risk.

These findings indicate that the understanding of novice athletes at Gorontalo State University is moderate, with the lowest level of understanding of injury prevention. This finding aligns with previous research at Yogyakarta State University, which also reported limited prevention knowledge (Suranto, 2021). Compared with previous research in Gorontalo with a sample of professional athletes (Haryanto et al., 2021), the findings of this study show a similar pattern: suboptimal outcomes. This indicates that education regarding sports injuries is not yet optimal at the coaching level.

5. CONCLUSIONS

According to this study, novice athletes from Gorontalo State University had a moderate understanding of sports injuries, with prevention being the weakest aspect. This indicates poor injury literacy. These results suggest that to reduce injury risk, education on prevention and load management should be incorporated into basic training programs. This study only examined one athletic discipline and used a single survey method, so the results cannot be broadly generalized. To achieve a more comprehensive research contribution, comparative studies across athlete levels, expanded coverage of sports, and the development of solutions for injury education are needed.

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