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UNDERSTANDING SPORTS INJURIES AMONG RUNNING ATHLETES IN GORONTALO; TREATMENT STRATEGIES AND PREVENTION EFFORTS

Arief Ibnu Haryanto[1], Edy Dharma Putra Duhe[2], Mohamad Akil Hunta[3] Wahyu Ramadhan Putra Umadji[4], Exal Garcia-Carrillo[5], Momen Mohamed Abdelgawad Abdelnaser[6]

[1]Universitas Negeri Gorontalo, Pendidikan Kepelatihan Olahraga, Gorontalo, Indonesia
[2]Universitas Negeri Gorontalo, Pendidikan Kepelatihan Olahraga, Gorontalo, Indonesia
[3]Universitas Negeri Gorontalo, Pendidikan Kepelatihan Olahraga, Gorontalo, Indonesia
[4]Universitas Negeri Gorontalo, Pendidikan Kepelatihan Olahraga, Gorontalo, Indonesia
[5]Universidad Bernardo O'Higgins, Escuela de Educación Física y Deporte, Región Santiago Metropolitan, Chile
[6]Alexandria University, Athletics Training, Egypt

*Coressponding Author. Email: arief_haryanto@ung.ac.id
*Email Author: arief_haryanto@ung.ac.id, edhydharma@ung.ac.id, mohamads1kepelatihan@mahasiswa.ung.ac.id, wahyu_s1kepelatihan@mahasiswa.ung.ac.id, exal.garcia@gmail.com, moamen.abdelgawad85@gmail.com

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Abstract
This research aims to explore the understanding of running athletes in Gorontalo regarding sports injuries, including how they treat and prevent these injuries. By understanding the treatment strategies and prevention efforts used by athletes, this research hopes to provide useful insights to improve the well-being and performance of running athletes. This research use descriptive statistics with survey methods. This research was conducted at the Gorontalo City sports stadium (Merdeka Stadium). The population in this study were all running athletes who took shelter in that place. The total population was 20 athletes. The sample in this research was the entire athlete population. The instrument used in this research was a questionnaire whose validity and reliability have been tested by previous research. The data analysis technique uses descriptive statistics using SPSS version 25. After the descriptive data is obtained, it was categorized using the Norm Assessment Reference. The overall result is the largest percentage in the medium category. Based on these results, it suggests the need to increase education and training for athletes regarding sports injuries.
Keywords: Athletics injuries, Track

INTRODUCTION

Running is one of the most natural and easily accessible forms of physical activity for anyone (Haryanto, Kadir, et al., 2021; Haryanto & Fataha, 2021). Rooted in ancient humans' need to hunt and survive, running has developed into one of the most popular sports in the world (Nurkhoiroh et al., 2023; Refiater & Haryanto, 2024). Whether done in nature, city streets, or on a stadium track, running offers a variety of physical and mental health benefits. In addition to strengthening the heart and lungs, running can also improve mood, relieve stress, and provide a feeling of

personal accomplishment. Its growing popularity is reflected in the various marathons and running events that are regularly held in various parts of the world, attracting participation from all ages and backgrounds.

Running athletes are individuals who dedicate themselves to the pursuit of speed and endurance through intensive training and relentless dedication (Haryanto, Gani, et al., 2021). They not only rely on physical strength, but also need mental toughness to face various challenges in each competition (Cooper et al., 2020). These athletes often start their careers from a young age, navigating various stages of development, from local competitions to world championships (Henjilito, 2017). With strict discipline in diet, rest, and training, they chase best times and break records, often inspiring new generations to follow in their footsteps. More than just achievements, their stories of struggle and victory reflect the human spirit in pursuing dreams and transcending one's limits.

Sports injuries are an inevitable risk for running athletes, often becoming a stumbling block that tests their physical and mental endurance (Loudon & Parkerson-Mitchell, 2022; Sugimoto et al., 2019; Tenforde et al., 2023). When trying to reach peak performance, running athletes are vulnerable to various injuries such as shin splints, plantar fasciitis, and stress fractures which can hinder their progress (Kozinc & Šarabon, 2017; Ridwan et al., 2023; Riedl et al., 2022). These injuries not only have a physical impact but also an emotional burden, because they force athletes to reduce training intensity or even temporarily stop competing. Recovery from injury takes time, proper treatment, and careful rehabilitation strategies. However, track athletes' fighting spirit is often seen in the way they recover from injury, showing incredible resilience and dedication in pursuing their peak performance again.

Understanding sports injuries, treatment and prevention efforts are crucial aspects that every running athlete must master to maintain the continuity of their career. This knowledge allows athletes to recognize early signs of injury, so they can take appropriate precautions before the injury develops into a more serious problem. Athletes who are aware of the importance of a proper warm-up, proper running technique, and the importance of rest and recovery, can significantly reduce their risk of injury. Additionally, an understanding of injury management, such as the use of ice, compression, and elevation, as well as when to seek professional medical help, allows them to treat injuries quickly and effectively. Thus, education about sports injuries not only helps in recovery but also in maintaining optimal performance and ensuring a long and successful running career.

Previous research has been carried out with the theme of understanding sports injuries which had as research subjects sports students (Suranto, 2021), junior high school students (M. R. Kusuma et al., 2017), Futsal players aged 16-23 years (Oktavian & Roepajadi, 2021), sports activist

(Zubaida & Anugrah, 2021), volleyball athlete (Siregar & Nugroho, 2022), Pencak Silat athlete (K. C. A. Kusuma et al., 2023), Physical Education teacher (Bambang Priyonoadi, 2015). These studies never discussed the understanding of running athletes, especially in Gorontalo.

Researchers conducted observations at the Merdeka Stadium in Gorontalo City, targeting athletes and running coaches in Gorontalo City. Researchers conducted interviews with the head coaches of track athletes. As a result, it turned out that most of the athletes who had been trained by him had experienced sports injuries while running. The injuries vary, some include muscle overuse, sprains, strains, and also falls on the track. Then the researchers also conducted interviews with athletes who train under the supervision of the City of Gorontalo. The results were the same, all of the athletes had experienced injuries while running. This is what makes researchers ask what athletes do when they suffer an injury. Apparently, one of the athletes answered that the last time he was injured, he immediately carried out a massage at that time. This is what makes this research even more interesting, because of the fact that there are still athletes who do not take the correct actions when treating injuries.

METHODOLOGY

This research employed descriptive statistics with survey methods. This research was conducted at the Gorontalo City sports stadium.The population in this study were all running athletes who took shelter in that place. The total population is 20 athletes. The sample in this research is the entire population. The instrument used in this research uses a questionnaire whose validity and reliability have been tested by previous research (Suranto, 2021). The research instrument is valid with the condition that r count ≥ r table (r product moment price), with r table worth 0.514 and a significance level of 5% or 0.05. Meanwhile, the reliability level is 0.922 for the Cronbach's Alpha value.The data analysis technique uses descriptive statistics using SPSS version 25. After the descriptive data is obtained, it is categorized using the following formula:

Table 1. Value category norms

No	KSL Formula	Value
1	Mean + (1,5.SD) and above	Very High
2	Mean + (0,5.SD) and above	High
3	Mean – (0,5.SD) and above	Medium
4	Mean – (1,5.SD) and above	Less
5	Mean – (1,5.SD) and below	Very Poor
SD = Standar Deviation		

RESULTS

The descriptive statistical table 2 above provides an overview of the total and three main aspects related to sports injuries, namely understanding sports injuries, treating sports injuries, and preventing sports injuries. The Overall Total has an average (mean) value of 21.30, with a standard deviation of 3,420, indicating quite moderate data variation around the mean. The minimum value recorded was 15 and the maximum value was 27, indicating a fairly wide range of data distribution.

Understanding Sports injuries shows an average incidence of 9.95 with a standard deviation of 2.139, indicating that the data is relatively more spread around the average compared to other aspects. The minimum value recorded was 3 and the maximum value was 12, indicating that injury frequency can vary widely. Understanding of handling Sports Injuries has an average of 6.65 with a standard deviation of 0.988. This suggests that the variation in understanding of injury management is relatively small, with the data more centered around the mean. The minimum value recorded was 5 and the maximum value was 8, indicating a narrower distribution range compared to the sports injury aspect.

Understanding Sports Injury prevention had a mean of 4.70 and a standard deviation of 1.342, indicating moderate variation around the mean. The minimum score recorded was 2 and the maximum score was 7, indicating variation in injury prevention practices. Overall, this table shows that there is significant variation in the understanding of sports injuries, while the understanding of injury management is more consistent. Understanding of injury prevention has moderate variation, reflecting differences in the approach or implementation of preventive practices in various settings. This analysis provides important insights for planning sports health and safety programs, especially in terms of mitigating injury risks and improving treatment and prevention.

Table 2. Descriptive Statistics

	Total	**Understanding Sports Injuries**	**Understanding Sports Injury Management**	**Understanding Sports Injury Prevention**
Mean	21.30	9.95	6.65	4.70
Std. Deviation	3.420	2.139	0.988	1.342
Minimum	15	3	5	2
Maximum	27	12	8	7

The table 3 depicts the frequency distribution and percentage of the overall total scores in the five assessment categories: Very High, High, Medium, Poor, and Very Poor. The value interval for each category provides an overview of the distribution of data and the frequency of occurrence.

The Very High Category (> 26) has only one case, representing 5% of the total. This shows that very little data reaches the highest level in the overall assessment. The High Category (23-26) shows a frequency of 7, which is 35% of the total. This indicates that more than a third of the data is in the high value category, indicating overall good performance in this segment. The Medium category (20-22) is the most common with 8 cases, representing 40% of the total. This indicates that most of the data is at the medium performance level, which is the dominant category in the value distribution. The Less Category (16-19) and the Very Low Category (< 16) each had 2 cases, each accounting for 10% of the total. This shows that there is a small portion of data that is below the expected standard.

Overall, this distribution shows that the majority of the data converges in the moderate to high category, with very few reaching very high levels or falling into the poor and very poor categories. This reflects relatively consistent performance with a positive trend towards higher values. This analysis can be a basis for planning further improvements, especially in increasing the number of cases reaching the very high category and reducing the number in the low and very low categories.

Table 3. Overall Total

No	Value Interval	Frequency	Value	Percentage
1	> 26	1	Very High	5
2	23-26	7	High	35
3	20-22	8	Medium	40
4	16-19	2	Less	10
5	< 16	2	Very Poor	10

The table 4 depicts the distribution of sports injury understanding among a group of individuals based on value intervals, frequency, qualitative values, and percentages. In the "Very High" category with a value interval of more than 13, there are no individuals who fall into this category, so the percentage is 0%. The "High" category with a value interval of 11-13 has 10 individuals, which is half of the total sample with a percentage of 50%. The “Medium” category with a value interval of 9–10 includes 7 individuals, which corresponds to 35% of the total sample. For the "Poor" category with a value interval of 7-8, there are 2 individuals, representing 10%. Finally, the “Very Poor” category with a score below 7 consists of only 1 individual, which corresponds to 5% of the total sample. From this table, it can be concluded that the majority of individuals have a high and moderate level of understanding of sports injuries, while very few are at a very poor level.

Table 4. Understanding Sports Injuries

No	Value Interval	Frequency	Value	Percentage
1	> 13	0	Very High	0
2	11-13	10	High	50
3	9-10	7	Medium	35
4	7-8	2	Less	10
5	< 7	1	Very Poor	5

The table 5 shows the distribution of understanding of sports injury management based on value intervals, frequency, qualitative values, and percentages. In the "Very High" category with a value of more than 8, no individuals are included, so the percentage is 0%. The "High" category with a value interval of 7-8 includes 14 individuals, representing the majority with a percentage of 70%. The "Medium" category with a value of 6 has 2 individuals, which corresponds to 10% of the total sample. For the "Poor" category with a value of 5, there are 4 individuals, accounting for 20%. Finally, no individuals fell into the "Very Poor" category with a score below 5, so the percentage is 0%. From this table, it can be concluded that the majority of individuals have a high level of understanding of sports injury management, while none are at a very high or very poor level.

Table 5. Understanding of Sports Injury Management

No	Value Interval	Frequency	Value	Percentage
1	> 8	0	Very High	0
2	7-8	14	High	70
3	6	2	Medium	10
4	5	4	Less	20
5	< 5	0	Very Poor	0

The table 6 presents the distribution of understanding of sports injury prevention based on value intervals, frequency, qualitative values, and percentages. In the "Very High" category with a value of more than 7, no individuals are included, so the percentage is 0%. The "High" category with a value interval of 5-7 includes 11 individuals, representing the majority with a percentage of 55%. The "Medium" category with a value of 4 has 5 individuals, which corresponds to 25% of the total sample. For the "Poor" category with a value of 3, there are 3 individuals, accounting for 15%. Finally, the "Very Poor" category with a score below 3 includes only 1 individual, which is equivalent to 5%. From this table, it can be concluded that most individuals have a high level of

understanding of sports injury prevention, while none have a very high level, and only a few have a very poor understanding.

Table 6. Understanding of Sports Injury Prevention

No	Value Interval	Frequency	Value	Percentage
1	> 7	0	Very High	0
2	5 -7	11	High	55
3	4	5	Medium	25
4	3	3	Less	15
5	< 3	1	Very Poor	5

The table above presents the distribution of understanding of sports injury prevention based on value intervals, frequency, qualitative values, and percentages. In the "Very High" category with a value of more than 7, no individuals are included, so the percentage is 0%. The "High" category with a value interval of 5-7 includes 11 individuals, representing the majority with a percentage of 55%. The "Medium" category with a value of 4 has 5 individuals, which corresponds to 25% of the total sample. For the "Poor" category with a value of 3, there are 3 individuals, accounting for 15%. Finally, the "Very Poor" category with a score below 3 includes only 1 individual, which is equivalent to 5%. From this table, it can be concluded that most individuals have a high level of understanding of sports injury prevention, while none have a very high level, and only a few have a very poor understanding.

DISCUSSION

Sports injuries are a major challenge faced by athletes, especially for those involved in intense physical activities such as running. A good understanding of sports injuries, treatment strategies and prevention efforts is essential to ensure athlete well-being and maintain their performance. This study aims to evaluate the level of understanding of running athletes in Gorontalo regarding sports injuries, as well as the strategies they use to treat and prevent these injuries. It is hoped that the results of this research will provide useful insights in efforts to improve education and training for athletes in the context of sports injuries.

The discussion in this research findings will be explained based on the facts in the field. This explanation is of course related to athletes' understanding of sports injuries, treatment strategies, and even prevention.The discussion about understanding sports injuries focuses on high categorization which reaches 50%. Previous research which had as subjects physical education and health teachers in Bantul District also had a high categorization reaching 50% (Bambang

Priyonoadi, 2015). This fact is also the same as the findings from this research, meaning it can be concluded that athletes already understand the sports injuries that often occur among athletes. Track athletes must understand about possible sports injuries because this knowledge allows them to recognize early signs of injury and take appropriate preventive measures. By understanding the risks of injuries such as sprains, shin splints, tendinitis, and stress fractures, athletes can manage their training intensity and volume wisely, use proper running technique, and ensure adequate recovery. This knowledge also helps them to know when to seek medical help and how to make an effective recovery, thereby reducing the risk of re-injury and ensuring a longer and more successful running career.

The discussion regarding understanding of handling strategies focuses on high categorization which reaches 70%. Previous research which had as its subjects the Satria Muda Indonesia Panji Anom Unit fighters achieved a mean score of 89 which is considered high (K. C. A. Kusuma et al., 2023). This research is entitled "Understanding of Running Athletes in Gorontalo Regarding Sports Injuries: Treatment Strategies and Prevention Efforts". Of course, this is specifically done in Gorontalo. The discussion in this research findings will be explained based on the facts in the field. This explanation is of course related to athletes' understanding of sports injuries, treatment strategies, and even prevention.

The discussion about understanding sports injuries focuses on high categorization which reaches 50%. Previous research which had as subjects physical education and health teachers in Bantul District also had a high categorization reaching 50% (Bambang Priyonoadi, 2015). This fact is also the same as the findings from this research, meaning it can be concluded that athletes already understand the sports injuries that often occur among athletes. Track athletes must understand about possible sports injuries because this knowledge allows them to recognize early signs of injury and take appropriate preventive measures. By understanding the risks of injuries such as sprains, shin splints, tendinitis, and stress fractures, athletes can manage their training intensity and volume wisely, use proper running technique, and ensure adequate recovery. This knowledge also helps them to know when to seek medical help and how to make an effective recovery, thereby reducing the risk of re-injury and ensuring a longer and more successful running career.

The discussion regarding understanding of handling strategies focuses on high categorization which reaches 70%. Previous research which had as its subjects the Satria Muda Indonesia Panji Anom Unit fighters achieved a mean score of 89 which is considered high (K. C. A. Kusuma et al., 2023). This fact is also the same as previous research, that athletes understand how to treat initial injuries that often occur in athletes. Running athletes should understand how to treat sports injuries that may occur because this allows them to immediately treat problems that arise, prevent the injury

from getting worse, and speed up the recovery process. Knowledge about injury management such as the RICE (Rest, Ice, Compression, Elevation) method, proper stretching, and the use of assistive devices such as kinesio tape or braces, helps athletes continue to train safely. With this understanding, they can reduce the time spent recovering, maintain physical fitness, and return to peak performance faster. In addition, the ability to deal with injuries independently also gives athletes a sense of confidence and independence in facing challenges during running.

The discussion about injury prevention efforts also focuses on high categorization which reaches 55%. Previous research which had as subjects female junior volleyball athletes in Medan City also had a very good level of understanding of sports injury prevention through jogging warm-up 82.8% and gym cool-down 90%, included in the very good knowledge scale category because it was more than 80% (Siregar & Nugroho, 2022). Running athletes must understand sports injury prevention to minimize the risk of injuries that can interfere with performance and hinder the achievement of training or competition targets. With this knowledge, they can implement effective warm-up and cool-down techniques, perform appropriate strength and flexibility exercises, and choose the right shoes to reduce stress on joints and muscles. Understanding prevention also helps athletes plan a balanced training schedule, avoid overtraining, and ensure the body gets enough rest. In this way, athletes can maintain consistent training, improve performance sustainably, and extend their running careers without being hampered by injuries that could have been avoided.

The overall total of this research is slightly different from the discussion of existing factors because it has the highest categorization at 40%. Previous research which had sports students as subjects had a high level of categorization knowledge of 34% (Suranto, 2021). Running athletes must understand all aspects of sports injuries from risk, treatment, to prevention because this knowledge is key to maintaining their health, performance and career sustainability. With in-depth understanding, athletes can recognize early signs of injury, implement effective preventative measures, and take appropriate treatment when an injury occurs. This allows them to organize optimal exercise programs, avoid overtraining, and ensure the body gets enough rest. This knowledge also gives athletes the ability to adjust the technique and equipment used, reducing the risk of re-injury and speeding recovery. Overall, this thorough understanding helps athletes stay in peak condition, maintain training consistency, and achieve their best performance with minimal risk of injury.

CONCLUSION

The findings derived from this research suggest the need to increase education and training for athletes regarding sports injuries. More in-depth educational programs and structured training

can help improve understanding and implement more effective injury management and prevention strategies. Future research can focus on developing and evaluating education and training programs for running athletes in Gorontalo. In addition, a more detailed study of the factors that influence the understanding and implementation of injury management and prevention strategies could also help in designing more effective interventions.

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