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Analysis of Sports Injury Management in SSB Bintang Muda Sarimulya Athletesitle

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ABSTRACT

This study aims to analyze the management of sports injuries management experienced by athletes of SSB Bintang Muda Sarimulya in Tebo Regency. Several athletes often experience minor injuries during training or matches. However, the treatment provided is still quite simple, such as giving only light massages, applying cold compresses without standard procedures, or letting the athletes rest without further medical follow-up. This condition forms the background of this research. The research method used is a descriptive qualitative approach with data collected through in-depth interviews with eight athletes aged 13–17 years, observation, and documentation. The data were analyzed using NVivo 12 software with a thematic analysis approach to identify patterns and relationships between variables. The results show that the most common types of injuries experienced by athletes are ankle injuries (87.5%), abrasions (62.5%), bruises (75%), sprains, and strains. The main causes of injuries include improper footing, physical contact between players, and inadequate field conditions. Preventive efforts carried out include warming up before training, muscle stretching, maintaining physical condition, avoiding risky collisions during play, and cooling down after matches or training. Injury management by athletes generally already follows the RICE method (Rest, Ice, Compression, Elevation) quite well, but there are still limitations in terms of supporting facilities and the availability of professional medical teams within the SSB environment. These findings indicate that although injury management has been carried out properly, adequate facilities and medical personnel are still needed to support the safety and performance of young athletes optimally.

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INTRODUCTION

Currently, sports in Indonesia have developed rapidly and shown significant progress, as sports activities are inseparable from human life. Various types of sports have been adapted to current conditions, and one of the most popular sports in Indonesia, and even worldwide, is football. Football is a team sport played by 11 players on each side for 2 × 45 minutes, with victory determined by the number of goals scored.

Each team consists of eleven players, including a goalkeeper. The game is played almost entirely using the feet, except for the goalkeeper, who is allowed to use their arms within the penalty area (Arinda, 2020).

In its development, football can be played outdoors as well as indoors. Football is a sport that requires courage and high sportsmanship, as physical contact frequently occurs and may cause serious harm to oneself, others, and the team. To play football properly, both technical skills and physical condition are required. The main objective of football is to score as many goals as possible into the opponent's net while preventing the ball from entering one's own goal. A team is declared the winner if it scores more goals than the opponent, while a draw occurs if both teams score the same number of goals (Arinda, 2020).

According to surveys, football ranks first as the most favored sport. Among men, football attracts 54% of interest, while among women, it reaches 31% (Nielsen sports, 2018) However, the high interest in football has also led to an increase in injury cases. Each year, approximately 22 million sports-related injuries occur. In the sports domain, physical injuries most often occur in body-contact sports, accounting for 45%. Football is among the sports with the highest potential for physical contact and contributes the largest proportion of injuries, at 23%, followed by rugby (Rahmah Laksmi Ambardini, 2016).

According to Arinda (2020), sports injuries are pains caused by sports activities, which may result in disability, wounds, and damage to muscles, joints, or other body parts. Sports activities today continue to be encouraged not only in the context of professional or competitive sports but also for general physical fitness. Physical fitness provides not only personal benefits but also societal and national advantages. Consequently, sports activities have received increasing attention. However, with the rise of sports participation, the number of injuries has also grown. Unfortunately, such injuries may hinder athletes from improving or maintaining their performance and fitness.

Sports injuries may cause physical impairment, pain, and abnormalities in muscles, joints, or other body parts. Causes include errors in playing techniques, insufficient warm-ups, as well as intrinsic factors such as fatigue and repetitive activities (Putri et al., 2022). Based on the time of occurrence, there are two common types of injuries experienced by athletes: acute trauma and chronic trauma. Acute trauma occurs suddenly, such as ligament tears, muscle or tendon injuries, sprains, and fractures, which require professional treatment. Chronic trauma often occurs due to overuse syndrome, involving repetitive excessive force over a long period. Such injuries may occur during training, in preparation for competitions, or during competitions themselves (Rahmah Laksmi Ambardini, 2016).

The establishment of SSB Bintang Muda Sarimulya aims to provide a platform for the community, particularly young athletes, to develop their talents in football, nurture potential athletes, and support them in achieving accomplishments. However, one of the major challenges faced is sports injuries. Common causes include insufficient warm-ups

before training or matches, improper techniques, poor physical condition, collisions, and inadequate facilities or playing fields. Therefore, this football school requires special attention from the government, sports practitioners, and society, especially those engaged in football, to address these challenges, particularly injury-related issues.

Knowledge of sports injuries is important for athletes to anticipate risks, administer first aid effectively, and prevent more severe injuries. The most common treatment method is the RICE technique (Rest, Ice, Compression, Elevation), which has been proven effective in reducing swelling, alleviating pain, and accelerating the healing of soft tissue injuries (Mustofa, 2022). However, its application requires proper technical understanding as well as adequate facilities and infrastructure at the SSB level.

Preventive efforts against injuries can be implemented before, during, and after training. Stretching all involved muscles helps relax them, followed by warming up with movements similar to those required during play. If injuries are not treated quickly and properly, they may cause limitations not only in daily activities but also in the athlete's sports performance (Napitupulu, 2021).

Before conducting this study, preliminary observations were carried out on athletes of SSB Bintang Muda Sarimulya to identify existing conditions and problems. The initial observation, conducted on December 20, 2024, involved discussions with several athlete representatives. The results showed that some athletes experienced minor injuries during training or matches. However, treatments given were still minimal, such as light massages, cold compresses without standard procedures, or simply resting without medical follow-up. This indicates a lack of understanding and application of proper injury management methods. Therefore, analyzing the types of injuries, their causes, and preventive measures is crucial.

Understanding sports injuries, treatment, and prevention is essential for athletes and sports practitioners to anticipate and minimize risks, administer first aid to themselves and others, and integrate injury prevention into training programs. Awareness of injury types and causes helps coaches and athletes develop more effective preventive strategies, including proper warm-ups, correct basic techniques, appropriate equipment use, and monitoring of field conditions.

Based on theory and observations, it is important to conduct a study not only to analyze how injury management is implemented among athletes of SSB Bintang Muda Sarimulya but also to examine the types of injuries commonly experienced, the contributing factors, and strategies to prevent and avoid injuries from an early stage. This research is expected to contribute to improving injury management and education within the SSB environment and serve as a foundation for developing safe, effective, and sustainable coaching strategies for young athletes.

Analyzing injury management among SSB Bintang Muda Sarimulya athletes is necessary to identify the readiness of stakeholders in addressing injuries promptly and effectively. By understanding common injury patterns and existing management practices, this study aims to contribute to the improvement of coaching quality and athlete safety. Furthermore, the findings can serve as a basis for football schools to

design more structured and effective injury management protocols. From these issues, the researcher is interested in conducting a study entitled: "Analysis of Sports Injury Management in Athletes of SSB Bintang Muda Sarimulya."

METHODS

This study employs a qualitative approach that allows the researcher to explore the experiences, perceptions, and perspectives of athletes regarding the injuries they have sustained, as well as the factors influencing the occurrence of such injuries. The type of research used is a case study. The researcher will select several football athletes as case study subjects to analyze their experiences related to injuries. Through this approach, the researcher can identify specific patterns and factors that contribute to the occurrence of injuries, as well as sports injury management and prevention.

The primary data used in this study were obtained through direct interviews with athletes from SSB Bintang Muda Sarimulya, Tebo Regency, regarding the injuries they experienced and the factors influencing those injuries. Meanwhile, secondary data were collected from literature sources such as books, journals, and scientific articles discussing injuries among football athletes.

In addition, data validity was tested using source triangulation. Data obtained through interviews, observations, and documentation were compared with one another to ensure the accuracy of the information collected. The researcher also conducted member checks with the informants to ensure that the interpreted data aligned with the informants' original intentions (Fadli, 2021).

RESULTS AND DISCUSSION

Result

Injury Types and Prevalence

Analysis of interview data using NVivo 12 revealed four primary injury types experienced by SSB Bintang Muda Sarimulya athletes, as shown in Table 1.

Table 1.
Types of Sports Injuries Experienced by Athletes

Injury Type	Frequency (n=8)	Percentage (%)	Affected Positions
Ankle injuries	7	87.5	All positions except goalkeeper
Bruises	6	75.0	Defenders, midfielders
Abrasions	3	62.5	All positions
Wrist sprains	1	12.5	Goalkeeper only

The dominance of ankle injuries (87.5%) aligns with research by Candra et al. (2022), who identified ankle sprains as the most frequent injury accompanied by pain and functional impairment. The goalkeeper's unique injury pattern, experiencing wrist sprains rather than lower extremity injuries, corroborates Dvorak et al. (2010) findings that goalkeepers are more susceptible to upper extremity injuries (20-25% of injuries being sprains from diving or ball-catching activities).

Causative Factors

Three primary causative factors emerged from the thematic analysis, as presented in Table 2.

Table 2.
Primary Causes of Sports Injuries

Causative Factor	Report (n)	Representative Quotes
Physical Contact	7	"The main factor is usually dueling with opponents"
Poor Field Conditions	6	"The field has many holes, sometimes uneven"
Incorrect Landing	3	"Sometimes wrong foot placement during training or matches"

Physical contact emerged as the leading cause (87.5%), consistent with Nurcahyo's (2015) observation that football, as a direct body-contact sport, has high injury potential. Field conditions (75% reporting) support Hadi & Sari (2023) identification of environmental factors as external triggers for acute and overuse injuries. The chord diagram visualization revealed complex interconnections between these factors, with poor field conditions often exacerbating injury risk during physical contact situations.

Prevention Strategies And Management Practices

Athletes demonstrated comprehensive understanding of injury prevention. All participants emphasized four key prevention components warm-up, maintaining physical condition, reducing physical contact, and cool-down.

Warm-up

Interview responses highlight the crucial role of warm-up exercises in preventing sports injuries:

"To avoid injury, I usually do proper warm-up and cool-down, maintain my physical condition, and try to reduce risky duels with opponents."

"It's more about avoiding high-risk duels, strengthening and maintaining physical fitness, as well as doing proper warm-up and cool-down."

These statements emphasize the importance of warming up in injury prevention. This is supported by Mustofa (2022), who states that warm-up is an essential part of preventing musculoskeletal injuries, accompanied by technical guidelines for both warm-up and cool-down in practice.

Maintaining physical condition

Sustaining optimal physical fitness is essential in preventing injuries. A structured and consistent training program to maintain overall fitness is strongly emphasized. Six athletes shared similar views regarding the importance of maintaining physical condition:

"Doing proper warm-up and cool-down, keeping the body fit, avoiding risky duels, and being careful if the field conditions are poor."

"Doing warm-up and cool-down, maintaining physical condition, and reducing high-risk duels with opponents."

These statements underline the significance of physical fitness in minimizing injury risks. Weda (2021) also highlights that adequate physical condition helps players withstand the demands of competition and reduces the risk of injuries caused by fatigue.

Reducing physical contact

All interviewed athletes expressed the same perspective regarding the importance of reducing or minimizing physical contact to prevent injuries:

"Reducing risky duels, keeping the body fit, and doing proper warm-up and cool-down."

"Focusing more on strengthening physical fitness, avoiding high-risk duels, and being more cautious if the field conditions are poor."

These responses demonstrate that limiting physical contact significantly contributes to lowering the risk of injuries. Mustofa (2022) also notes that technical skills, behavioral strategies, and body-contact control are important elements of injury prevention in contact sports.

Cool-down

Cooling down after physical activity is equally as important as warming up. The cool-down process helps the body gradually return to its resting state, reduces lactic acid buildup in muscles, and maintains flexibility. It also prevents post-exercise muscle stiffness and injuries associated with improper recovery. The interviews revealed that seven athletes shared the same view:

"To avoid injury, I usually focus on proper warm-up and cool-down, maintaining fitness, avoiding risky duels, and being cautious during matches."

"To avoid injuries, I prefer proper warm-up and cool-down, maintaining physical condition, and reducing high-risk duels with opponents."

These responses highlight the equal importance of warm-up and cool-down in preventing sports injuries. Ferdi et al. (2025) further emphasize that cooling down plays a vital role in gradually restoring heart rate and body temperature, preventing blood pooling, reducing muscle soreness, and minimizing injury risks after physical activity.

These findings align with (Mustofa, 2022) framework for musculoskeletal injury prevention. Notably, athletes showed sophisticated understanding of risk management, with one participant stating: "I do proper warm-up and cool-down, maintain physical condition, avoid high-risk duels with opponents, and am more careful when playing."

RICE Method Implementation

All eight athletes demonstrated proper knowledge and application of the RICE method for initial injury management. NVivo analysis revealed "METODE RICE" as the dominant child node under "PENANGANAN" (Management), indicating its central role in injury response protocols.

Representative quotes illustrate consistent application:

"I check first if the injury is severe or not. If not severe, I usually just use the RICE method because the coach taught us"

"If I get injured during a match or training, I immediately compress with ice, then at home use the RICE method taught by the coach"

This universal adoption reflects effective coaching education, though athletes noted limitations in available resources and absence of professional medical support at the SSB level.

Discussion

This study comprehensively identifies that athletes of SSB Bintang Muda Sarimulya routinely experience various types of sports injuries, with ankle sprains being the most common, followed by wrist sprains, particularly among goalkeepers. This finding aligns with Dvorak et al., (2010) , who emphasized the vulnerability of goalkeepers to upper extremity injuries. In addition, bruises and abrasions frequently occur due to physical contact and friction, consistent with the results of Rahmaniar et al. (2018) and data from the FIFA Medical Assessment and Research Centre (F-MARC), which reported that minor injuries such as abrasions account for approximately 10–15% of total minor injuries during a competitive season.

The causes of these injuries vary. Intrinsic factors include biomechanical errors or improper foot placement during movement, as explained by Sumartiningsih (2012)**,** who highlighted the risks of sudden movements or incorrect landings. Meanwhile, extrinsic factors such as inadequate field conditions—including uneven, slippery, or perforated surfaces—directly contribute to injury risks, as confirmed by Hadi & Sari (2023). Furthermore, the intensity of physical contact between players, a fundamental characteristic of football, is another major cause of injuries, as emphasized by Nurcahyo (2015), who noted the high potential for injuries caused by player collisions.

These findings reinforce the general theory of sports injury etiology, which divides risk factors into intrinsic (such as poor technique and physical condition) and extrinsic (such as equipment, environment, and player interactions), as discussed by Mustofa (2022) and Sudirman et al. (2021).

In terms of prevention, athletes demonstrated a high level of awareness by consistently performing warm-up exercises, which, according to Mustafa (2020), prepare muscles and joints before physical activity. This is followed by cool-down sessions that support recovery and prevent muscle stiffness (Ferdi et al., 2025). Athletes also prioritize maintaining optimal physical fitness as a foundation for injury prevention (Weda, 2021) and consciously attempt to minimize high-risk duels or physical contact.

These preventive measures are consistent with established principles in sports science, which emphasize adequate physical preparation, adaptation to sport-specific demands, and behavioral modification to reduce risk. Injury prevention theory, as outlined by Mustofa (2022), further includes aspects of skill development, nutrition, proper equipment use, and the role of coaches in ensuring athlete readiness—most of which have already been practiced by the athletes of this football school.

Regarding injury management, a key finding is that athletes have been able to correctly implement the RICE method (Rest, Ice, Compression, Elevation) as first aid.

This practice is crucial and aligns with the theoretical basis of acute injury management: *Rest* prevents further damage, *Ice* reduces inflammation through vasoconstriction, *Compression* helps control swelling, and *Elevation* minimizes blood flow to the injured area, as explained by Prayoga Harmianto et al. (2024). The rationale behind RICE is to minimize the initial inflammatory response and accelerate soft tissue healing (Mustofa, 2022).

The proper application of RICE indicates an adequate level of injury education among the athletes, although modern injury management also includes more complex phases of rehabilitation and reintegration (Prasetyo, 2015). Other interventions—such as kinesiotaping (Yuliawan & Setiawan, 2019) or massage therapy (Yarmani & Ilahi, 2024) may not yet be fully available or systematically implemented at the football school level.

CONCLUSION

Based on the results of the study on the analysis of sports injury management in athletes of SSB Bintang Muda Sarimulya, it can be concluded that sports injuries are commonly experienced by the athletes, with the most frequent types being ankle injuries, sprains, bruises, and abrasions. The factors causing these injuries include insufficient warm-ups, improper playing techniques, inadequate field conditions, and physical contact. To prevent injuries, athletes need to perform warm-ups, muscle stretching, maintain physical fitness, avoid excessive collisions, and carry out cool-down exercises after training. The athletes of SSB Bintang Muda Sarimulya have been able to manage injuries appropriately using the RICE method (Rest, Ice, Compression, Elevation). Understanding and applying this method properly helps accelerate the recovery process and prevents injuries from becoming more severe.

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