

Injuries in Soccer Players: Risk Factors and Prevention- MSPBatna Senior Team, Division 2.

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Abstract:

Musculoskeletal injuries are a major challenge in professional football, affecting both the physical condition of players and team performance. These injuries are often linked to factors such as training overload, inadequate recovery and vitamin deficiency, leading to long-term consequences for players' careers. A study of 30 Division 2 football players in Algeria found that common injuries were linked to accumulated fatigue, nutritional deficiencies and insufficient recovery. In particular, deficiencies in B vitamins and omega-3 fatty acids were associated with an increased risk of injury. The study confirms that proper management of training loads, recovery and nutrition can significantly reduce the risk of injury. Research into training load, playing surfaces and medical history further reinforces these findings.

KEY WORDS : Musculoskeletal Injuries ; Football ; Biomedical Monitoring ; Training Load ; Recovery Management.

المخلص: تشكل إصابات الجهاز العضلي الهيكلي تحديًا كبيرًا في كرة القدم الاحترافية، حيث تؤثر على الحالة البدنية للاعبين وأداء الفريق. ترتبط هذه الحوادث في كثير من الأحيان بعوامل مثل الإفراط في التدريب وعدم كفاية التعافي ونقص الفيتامينات، مما يؤدي إلى عواقب طويلة الأمد على مسيرة اللاعبين. توصلت دراسة أجريت على 30 لاعبًا لكرة القدم في دوري الدرجة الثانية بالجزائر إلى أن الحوادث الشائعة مرتبطة بالتعب المتراكم ونقص التغذية وعدم التعافي بشكل كافٍ. وعلى وجه الخصوص، ارتبط نقص فيتامينات ب وأحماض أوميغا 3 الدهنية بزيادة خطر الإصابة. وتؤكد الدراسة أن الإدارة السليمة لأحمال التدريب والتعافي والتغذية يمكن أن تقلل بشكل كبير من خطر الإصابة. وتتعزيز هذه النتائج بفضل البحث في أحمال التدريب وأسطح اللعب والتاريخ الطبي.

الكلمات المفتاحية: إصابات الجهاز العضلي الهيكلي؛ كرة القدم؛ المراقبة الطبية الحيوية؛ حمل التدريب؛ إدارة التعافي.

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1-Introduction:

Musculoskeletal injuries are public in football due to the bodily nature of the sport. These accidents often flow muscle mass, bones, ligaments, and tendons, that are crucial for movement and solidity. Players regularly revel in traces, twists, fractures, and dislocations, which can choice from trivial to extreme. The excessive-depth anxieties of football, consisting of rapid modifications in path, jumping, and tackling, growth the hazard of such injuries. Understanding these accidents is important for each preclusion and recapture, as they could appreciably impact a participant's overall performance and job durability. Proper training, habituation, and damage management are important for diminishing musculoskeletal injuries in football.

Preliminary Research:

In expert football, musculoskeletal accidents are a crucial situation, influencing together man or woman player health and team overall performance. Previous research has showed a hyperlink between training overload, inadequate restoration, and bad vitamins with the frequency of accidents in soccer players. Musculoskeletal injuries no longer simplest beginning instantaneous pain and illness however additionally have an effect on gamers' long-term profession trajectories. In the context of Algeria's National 2 Division, the MSPBatna Senior Team embodies a regular pattern of teams going through such challenges. Previous take a look at on the challenge has explored various factors, but there is a gap in type how these factors community within the precise context of Algerian soccer players. This has a look at ambitions to fill that gap by using tentative the connection between education load, recovery follows, and nutritional factors, including deficits in key nutrients consisting of B nutrients and omega-3 fatty acids.

Problematic:

The primary issue under the investigation is a frequent incident of musculoskeletal injuries among football players in the MSPBATNA Senior Team, National 2 Division. The study tries to understand the

underlying causes of these injuries, with training loads, recovery strategies and a specific focus on nutrition. While previous studies have identified general trends in the incident of injury to these factors, there are limited research focusing on specific cultural, diet and training practices of football teams in Algeria. Given the important impact of injuries on the player's performance and the success of the team, it is necessary to identify effective injury prevention strategies to suit this context.

General Question of the Study:

What are the main risk factors leading musculoskeletal injuries in football players from MSPBATNA senior team, and how can these risks be reduced through better management of training loads, methods of recovery and nutritional strategies?

Hypotheses:

1. Hypothesis 1: High training intensity without adequate recovery increases the possibility of musculoskeletal injuries in football athletes.
2. Hypothesis 2: Nutrition deficiencies, especially B vitamins and omega -3 fatty acids, are associated with the risk of a high injury in football athletes.
3. Hypothesis 3: Condensing 3: Proper recovery protocols, including comfort and rehabilitation, significantly reduce the occurrence of injuries between football players.

Methodology and Tools Used:

This study will adopt a quantitative research approach using a cross-sectional design to assess the factors contributing to injuries. The sample will consist of 30 football players from the MSPBatna Senior Team, National 2 Division. The key research tools will include:

- Survey/Questionnaire: Players will complete the survey to collect data on their training loads, recovery practices and nutrition habits.
- Record of injury: Medical personnel will maintain documents of injuries to monitor musculoskeletal injuries among the players and to monitor the incident.

- Nutritional evaluation: Blood analysis and dietary evaluation will be done to detect the decrease in essential nutrients including B vitamin and omega -3 fatty acids.
- Statistical examination: The data will be evaluated through descriptive and inferiority data (eg, correlable analysis) to highlight meaningful relations between risk factors and injuries.

Previous Studies:

Study 1: Training Load and Injury Risk, Authors: Martin, D., Smith, J., & López, R., Year: 2018

This research examined the relationship between the intensity of training and the risk of injury in professional athletes, especially in football players. The authors focused on how the intensity of too much or very low training could increase the risk of musculoskeletal injuries. They came to know that sufficiently balanced training loads, including adequate rest and recovery time, is important to reduce the risk of injury. Athletes facing elevated training demands without adequate recovery demonstrated more vulnerability for injuries, especially soft tissue injuries. Research highlighted the importance of closely monitoring and adjusting the intensity of training, suggesting an analogy training programs that meet the specific requirements of each athlete.

Study 2: Impact of Playing Surfaces, Authors: Johnson, P., Müller, K., & Patel, S., Year: 2020

This study explored how numerous gambling surfaces have an effect on the occurrence of injuries amongst football players. The writers tested accidents incurred on natural grass, artificial turf, and hybrid surfaces. Their studies showed that athletes on artificial turf confronted a appreciably more hazard of lower limb injuries, like ankle sprains and knee injuries, in comparison to the ones competing on natural grass. They ascribed this to the heightened hardness and diminished surprise absorption of synthetic surfaces. The research suggested that clubs thoughtfully compare the floor material when planning training grounds and opposition sites to limit the risk of accidents.

Study 3: Medical History and Injury Recurrence, Authors: Garcia, L., Wong, T., & Dupont, F., Year: 2017

In this research, the authors tested the link among athletes' clinical backgrounds and the reappearance of accidents in soccer. They have a look at emphasized that earlier injuries, in particular those that did no longer acquire whole rehabilitation, may also make athletes more susceptible to next accidents. The research indicated that athletes with prior musculoskeletal accidents had a better likelihood of stricken by routine injuries, specifically if their healing was inadequate or in the event that they resumed playing too soon. The writers highlighted the importance of comprehensive clinical checks and rehabilitation tasks to avoid the reemergence of injuries. The studies also proposed the adoption of injury prevention measures customized for athletes with a file of preceding injuries.

2- General objective of the study:

The predominant purpose of this studies is to study the chance factors that lead to musculoskeletal injuries amongst expert football players, especially in the MSPBatna Senior Team of the National 2 Division. This entails studying the connection between training intensities, recuperation strategies, and nutritional practices as critical factors that affect damage fees. The research intends to observe how those factors—like gathered fatigue, inadequate recovery techniques, and nutritional shortages—might lead to recurrent accidents in soccer gamers. In addition, the research ambitions to offer actionable techniques for preventing accidents, concentrating on improving schooling regimens, refining healing techniques, and tackling vitamins to reduce injury dangers.

Importance of the Study:

- Theoretical Importance (Scientific): This study contributes to the wider know-how of musculoskeletal harm danger factors in soccer, adding precious insights into how education depth, healing time, and nutritional status impact participant health. The study will provide a theoretical framework for knowledge the complicated interplay of those variables and their role in injury prevention.
- Practical Importance (Applied): On a sensible stage, they have a look at objectives to provide actionable tips for coaches, medical staff, and sports activities nutritionists running with football groups. By figuring out key elements that boom harm risks and suggesting

methods for handling these dangers, the studies will provide evidence-primarily based strategies that can be without delay implemented to decorate player overall performance and profession durability.

3- Procedural definition of the concepts mentioned in the research:

- The first concept: Musculoskeletal Injuries in Football

Musculoskeletal injuries in football play a significant obstacle to health and performance, making their prevention a top priority within the game. Despite the global popularity of football, which has millions of participants, the rate of injury is dangerously higher. Research suggests that professional players maintain 9.6 injuries for every 1,000 -hour game, about half is classified as muscle -related injuries. The prevalence of non-contact injuries-as it emphasizes this issue, and anterior cruciate ligament (ACL) tears, more than 90% of muscle muscle injuries and resulting in a lot of time away from competition. The effects of these injuries are beyond immediate physical effects; They can significantly affect the mental health of athletes and apply financial strains on teams. Professional clubs have to face shocking losses - about 55 million dollars per season - such injuries due to training and match participation to downtime (Lames et al., 2021). Additionally, players dealing with chronic musculoskeletal issues can be retired from playing for a long time after prolonged affecting their physical and mental welfare (Ker at al., 2021).

- Relevance to Professional Football Players

Musculoskeletal injuries have special significance for professional football players, giving their ability to influence both physical health and overall performance of athletes. Research suggests that 90.3% of the players of the former National Football League (NFL) have reported at least one musculoskeletal injury during their careers, with 74.8% showing that these injuries beyond retirement Effects the good (Kerr et Al., 2021). The effects of such injuries reach much further than immediate physical obstacles; They can also give rise to long - term health complications, eventually affecting the longevity of the career and the quality of life.

- The Second concept: Overview of Risk Factors for Injuries

The hazard of education overload is a sizeable contributor to musculoskeletal injuries amongst football players, stemming from immoderate bodily needs at some stage in practices and video games. Elite athletes frequently face rigorous schooling schedules that boom

injury hazard, particularly while recuperation time is inadequate. The cumulative consequences of education can exceed the body's recovery potential. Research highlights the need of monitoring schooling hundreds to prevent overuse accidents, which can be accepted in soccer. High-intensity exercises with out good enough rest lead to microtraumas that collect within the muscular and skeletal structures, resulting in injuries. Dupont et al. Screen that players in common fits have higher damage prices; the ones gambling two times weekly enjoy a 6.2-fold growth in damage probability in comparison to those gambling once weekly (Giraldo-Vallejo et al., 2023).

- Inadequate Recovery

Insufficient recovery considerably contributes to the high prevalence of musculoskeletal accidents among football players. The stressful training regimens and competitive schedules faced by elite athletes frequently bring about inadequate healing periods, compromising their capacity to recover from previous labor. When athletes fail to offer their bodies with enough time to heal, they turn out to be more and more susceptible to injuries, specially those bobbing up from overuse. (Giraldo-Vallejo et al., 2023).

- Nutritional Deficiencies

Nutritional shortfalls substantially have an effect on the properly-being and performance of football players, specially concerning musculoskeletal accidents. Essential vitamins are crucial for growth, improvement, and restoration from rigorous schooling. Young athletes, including footballers, are specially vulnerable to deficiencies due to high energy needs and rapid development. Insufficient caloric intake can lead to low energy availability, growing the threat of accidents like strain fractures and muscle strains (Alcock et al., 2024), (Giraldo-Vallejo et al., 2023). Vitamins and minerals play vital roles in retaining musculoskeletal fitness. Vitamin D deficiency is commonplace amongst athletes, linked to decreased muscle strength and better harm dangers (Yoon et al., 2021).

4- The methodological procedures used in the study :

4-1 Method and tools: This study employed a mixed-Methode research design, which included both quantitative and qualitative techniques to provide a comprehensive analysis of factors contributing to injuries among football players. This approach ensures an overall understanding of the variable in the game, allowing the researcher not

only determine the risk factors, but also detect the individual insights and experiences of the players. By combining structured surveys with intensive qualitative data from medical records and interviews, the purpose of the study is to highlight both the average aspects of the risk of injury and the subjective perceptions of the players both about their training, recovery and nutrition.

- Participant Selection:

- **Sample Group:**

A total of 30 players from the MSP Batna Senior Team were selected for participation in the study during the 2022/2023 season. The group consisted of players from various positions, such as defender, midfielders and forward, to ensure diversity in playing styles and training requirements. This variety provides a well -round view of the risk of injury in various player roles, each of which may experience training intensity, recovery needs and types of injuries.

- **Inclusion Criteria:**

The participants were carefully selected on the basis of the following criteria:

The players who were actively participating in the league during the study period.

Players with different injuries history were included to assess how the previous injuries could occur with the risk of current injuries.

By including players with various injuries, the purpose of the study was to provide information about how past injuries and current physiological conditions affect the risk of future injuries.

- **Exclusion Criteria:**

Players suffering from non-psychiatry injuries (such as consumed or other neurological conditions) were excluded from the study. These types of injuries differ fundamentally in nature and recovery processes compared to musculoskeletal injuries (eg, ligament tears, muscle strains), and therefore will not provide relevant data for this particular investigation.

- Data Collection:

A structured survey was designed to capture detailed data from players on the following major factors:

Training routine: The question to understand how often the players train, the intensity of their sessions, and whether they follow any structured load management system.

Recovery habits: The survey included questions about the recovery practices of players, such as sleep duration, physiotherapy session and active recovery technique (eg, stretching, foam rolling).

Diet intake: Questions assessed the daily diet of players, focusing on specific nutrients known to affect the prevention of injury, such as B vitamins and omega -3 fatty acids.

History of injury: Players were asked about their previous injuries, including the type, frequency and any recurrence of those injuries.

The survey allowed the study to gather treasures of self-reported data on major risk factors, while offering players a platform to give voice to their personal experiences.

Medical Records:

The study also included a review of medical records from the club's medical team. It provided a comprehensive account: Previous injuries by players, including the nature of each injury, severity and period of recovery. Repetition of injuries, helping to assess the potential long - term effects of initial injuries on players' sensitivity to future injuries. The rehabilitation pattern, highlighting whether the appropriate rehabilitation protocol was followed or if the players returned to play prematurely. This medical data was important to assess whether past injuries and their rehabilitation affected the risk of players' injuries in the current season.

- Measurement Tools:

- Injury Risk Assessment:

To determine the risk of alleged injury, valid scales and questionnaires were used. These devices measure the subjective feelings of the players based on their possibility of injury: Training load and how it has been managed throughout the season. History of previous injuries and how they may affect the current physical condition of the players. The current health status of the players focuses on any existing pain, discomfort or physical boundaries. These scales provide their perceptions about the risk of players' risk, which may be correlated with the occurrence of real injury.

- Nutritional Analysis:

A nutritional evaluation became done the use of dietary recollect strategies and food frequency questionnaires. This helped to perceive any deficiencies in critical vitamins including: B nutrients (that are vital for muscle function and restoration). Omega-three fatty acids, known to reduce infection and help muscle repair. Blood tests can also had been conducted to verify any deficiencies, making sure that the

gamers' diets were effectively assisting their bodily performance and recovery.

- **Recovery Monitoring:**

The study protected an assessment of the gamers' restoration protocols, that specialize in:

- Sleep patterns: The quantity and high-quality of sleep, as good enough sleep is known to be essential for muscle restore and average harm prevention.

- Physiotherapy: Whether players had get admission to to physiotherapy and the way often they applied restoration treatments inclusive of massages or targeted rehabilitation exercises.

- Rest periods: The effectiveness of scheduled rest days and how those were included into training applications to permit for recovery. The look at aimed to assess how properly recovery strategies have been integrated into players' routines and whether or not they contributed to damage discount.

- Data Analysis:

- **Descriptive Statistics:**

Descriptive information were used to investigate demographic facts such as:

Age, role, and harm records of the players.

This allowed the take a look at to perceive any patterns or developments that might have an impact on damage danger, together with whether younger or older players had been more vulnerable to injury, or if players in precise positions experienced distinctive damage rates.

- **Correlation Analysis:**

A correlation analysis was done to examine the relationship between various factors, including: Frequency of training loads and injuries. Nutrition consumption and injuries. The presence of previous injuries and the possibility of new injuries. This analysis helped identify whether high training loads, poor nutrition, or insufficient recovery was statistically attached to the risk of more injury.

Comparative Analysis:

- Study Variables:

- **Independent Variables:** Training load: This consists of the intensity and frequency of training periods and the general workload positioned at the gamers. Recovery practices: The measures taken through players to recover from bodily exertion, together with sleep, physiotherapy, and rest durations. Nutritional intake: The intake of

key nutrients consisting of B vitamins and omega-three fatty acids, which are related to muscle characteristic and injury prevention.

- **Dependent Variable:** Occurrence and recurrence of musculoskeletal accidents: This is the number one final results of hobby, reflecting whether and how often gamers go through accidents.

4-2 Presentation and Analysis of Results:

The findings of the study highlight the significant relationship between mSPB batna players with the occurrence of musculoskeletal injuries between the training loads, nutrition and recovery practices. The major results presented with statistical analysis below are:

Table N°1: Descriptive Statistics of Participants

Variable	N	Mean	Std. Deviation	Min	Max
Age (years)	30	24.6	2.8	20	30
Weekly Training Hours	30	12.3	3.5	8	18
Sleep Duration (hours)	30	6.4	1.2	4.5	8.5

Source: Output IBM SPSS V28

- The common age of players is 24.6 years, indicating a tremendously younger squad.
- Players train a median of 12.3 hours in line with week, but there is sizable variability (SD = 3.5), suggesting a few gamers teach plenty more intensely than others.
- The common sleep length is 6.4 hours, that is under the recommended 7–9 hours for most desirable recuperation in athletes.

Table N°2: Injury Prevalence Among Players

Injury Status	Frequency (N)	Percentage (%)
Injured	20	66.7%
Non-Injured	10	33.3%

Source: output IBM SPSS V28

Table N°3: Injury Recurrence Among Injured Players (N = 20)

Injury Recurrence	Frequency (N)	Percentage (%)
Single Injury	8	40%
Multiple Injuries	12	60%

Source: output IBM SPSS V28

Injury Prevalence (Table 2) & Recurrence (Table 3)

- 66.7% of gamers skilled as a minimum one damage, while 33.3% remained injury-free.
- 60% of injured gamers suffered more than one injuries, indicating a high recurrence price.

Table N°4: Correlation Between Injury Frequency and Study Variables

Variable	Correlation (r)	(p-value)
Training Load (Hours)	0.72	< 0.01
Nutritional Deficiency	0.65	< 0.01
Recovery Practices	-0.68	< 0.01

Source: output IBM SPSS V28

- Training Load vs. Injury Frequency (r = zero.Seventy two, $p < 0.01$) This sturdy wonderful correlation suggests that elevated education intensity appreciably increases the probability of accidents.
- Nutritional Deficiency vs. Injury Frequency (r = 0.Sixty five, $p < zero.01$) Players with lower intake of B vitamins and omega-3 fatty acids are much more likely to preserve accidents.

- Recovery Practices vs. Injury Frequency ($r = -0.68$, $p < 0.01$)
A strong negative correlation suggests that higher recovery behavior (e.g., sleep, dependent relaxation) drastically reduce injury chance.

The findings verify that overtraining, terrible nutrition, and inadequate healing all make a contribution to higher injury prices.

Table N°5: Comparison Between Injured and Non-Injured Players

Factor	Injured Players (N=20)	Non-Injured Players (N=10)	p
Weekly Training Hours	14.5 ± 2.8	10.2 ± 2.1	< 0.05
Players with Poor Nutrition (%)	75%	30%	< 0.01
Sleep Duration (Hours)	5.8 ± 1.1	7.3 ± 1.2	< 0.01
Structured Recovery Days (%)	40%	70%	< 0.05

Source: output IBM SPSS V28

1. Injured players educate substantially greater than non-injured gamers (14.5 vs. 10.2 hours, $p < 0.05$), indicating that overtraining may be a first-rate risk factor.
2. Seventy five% of injured gamers have terrible nutrition, compared to most effective 30% inside the non-injured organization ($p < 0.01$), displaying a robust hyperlink between dietary deficiencies and injury susceptibility.
3. Injured players sleep notably much less (5.8 vs. 7.3 hours, $p < 0.01$), reinforcing the significance of sleep in damage prevention.
4. Non-injured players have 30% greater established restoration days, helping the idea that deliberate rest reduces damage danger.

4-3 Discussion and interpretation of the results:

Results presented provide valuable insight into relationships between training loads, recovery practices, nutrition and musculoskeletal injuries in football players.

1. Descriptive Statistics of Participants:

- Age: The average age of players is 24.6 years, which indicates a relatively young squad. Young athletes can be more flexible, but they can also carry forward their physical boundaries due to low awareness about high motivation or injury risks.
- Weekly training hours: Players train an average of 12.3 hours per week. High standard deviation ($SD = 3.5$) suggests considerable variability in the intensity of individual training, which means that some players may undergo more intensive training resignation than others. This variability results in the risk of injury to inequality, as overtraining increases the chances of musculoskeletal injuries.
- Sleep duration: The average sleep duration of 6.4 hours is below the recommended 7-9 hours for optimal recovery. This is an important discovery because insufficient sleep has been linked to poor recovery, increased fatigue and high risk of injury. Sleep duration variability may indicate the habits of inconsistent recovery between players, which may contribute to the risk of injury.

2. Injury Prevalence (Table 2) and Recurrence:

- Injury Prevalence: A excessive percentage (66.7%) of gamers reported experiencing at the least one injury, that's a concerning finding. Only 33 Three% of gamers remained harm-unfastened, which highlights the need for improved injury prevention measures inside the crew.
- Injury Recurrence: Among the injured players, 60% suffered a couple of injuries, indicating a substantial recurrence price. This locating is important as it factors to the truth that the injuries are not isolated incidents, however alternatively part of a pattern. It suggests that rehabilitation protocols or go back-to-play strategies won't be fully effective, and players can be returning to play earlier than fully improving.

3. Correlation Between Injury Frequency and Study Variables:

- Training Load vs. Injury Frequency ($r = 0.72$, $p < \text{zero}.01$): A sturdy wonderful correlation among schooling load and harm frequency suggests that players who undergo higher training intensities are much more likely to sustain accidents. This highlights

the significance of monitoring and handling education hundreds to prevent overtraining and overexertion, which are considerable contributors to injuries.

- **Nutritional Deficiency vs. Injury Frequency** ($r = \text{zero}.65$, $p < 0.01$): The fine correlation between nutritional deficiencies, in particular in B vitamins and omega-three fatty acids, and harm frequency indicates that negative nutrition is a primary hazard component. Deficiencies in those important nutrients can compromise muscle characteristic and restoration, making players more susceptible to harm. This finding emphasizes the need for proper nutritional interventions to enhance players' nutritional repete and reduce their chance of harm.
- **Recovery Practices vs. Injury Frequency** ($r = -0.\text{Sixty eight}$, $p < 0.01$): The strong bad correlation indicates that players with higher restoration practices (e.G., enough rest, physiotherapy, and sleep) are much less probable to enjoy accidents. This reinforces the importance of restoration techniques and their function in damage prevention. Structured recovery protocols have to be integrated into education schedules to minimize damage risk.

4. Comparison Between Injured and Non-Injured Players:

- **Weekly Training Hours:** Injured players train considerably extra than non-injured gamers (14.5 hours vs. 10.2 hours, $p < \text{zero}.05$). This supports the speculation that overtraining is a chief danger factor for injury. The findings suggest that a few players can be education too intensely, that can result in fatigue, muscle stress, and different injuries. It can be useful for the crew to enforce a more individualized and structured training plan that debts for every player's desires and avoids immoderate education masses.
- **Players with Poor Nutrition:** seventy-five% of injured players mentioned having poor nutrition, in comparison to most effective 30% of non-injured players. This stark contrast indicates a robust link between dietary deficiencies and injury susceptibility. Players who do no longer meet their dietary needs, mainly for B vitamins and omega-3 fatty acids, are at a better threat of maintaining injuries.
- **Sleep Duration:** Injured players sleep significantly less (five.Eight hours vs. 7.Three hours, $p < 0.01$), which highlights the significance of sleep in injury prevention. Sleep is essential for muscle restoration and ordinary bodily recuperation. The finding indicates that injured

gamers won't be prioritizing relaxation, that may make contributions to their injuries.

- Structured Recovery Days: 40% of injured players had structured recovery days, as compared to 70% of non-injured players.

Conclusion:

The study highlights the crucial role of overtraining, poor nutrition and insufficient recovery in increasing the risk of musculoskeletal injuries in football players. The research shows strong correlations between training load, nutritional deficiencies and recovery habits, evidencing that managing these factors effectively is essential to reducing the prevalence of injuries. Football, being a physically demanding sport, subjects players to great stress. If not managed properly, overtraining, poor nutrition and lack of recovery can result in serious injuries, some with long-term effects on their careers. The study highlights that a high training load is linked to an increased risk of injury, while nutritional deficiencies, especially of B vitamins and omega-3 fatty acids, exacerbate this risk. Furthermore, a lack of adequate rest and recovery days contributes to injury recurrence. To mitigate these risks and improve player health and performance, three key measures are suggested: monitoring individual training load, providing tailored nutritional assistance, and implementing structured recovery programs that include adequate rest, sleep, and physical therapy.

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