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Bridging the Implementation Gap: Addressing Academic and Structural Barriers to Injury Prevention in University-Level Contact Sports

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ABSTRACT

Sports injuries, particularly musculoskeletal injuries, are common among athletes and affect more than 40% of active individuals annually. University athletes are especially vulnerable during training and competition, particularly in contact sports such as football. Although evidence-based prevention strategies, including neuromuscular training and appropriate warm-up and cool-down routines, can significantly reduce injury risk, their implementation remains inconsistent in many university settings. This study aimed to evaluate the knowledge and adoption of injury prevention strategies among student-athletes at the University of the Western Cape (UWC) and identify barriers affecting their implementation. A descriptive study design was employed involving 101 student-athletes selected through purposeful and convenience sampling. Data were collected using validated questionnaires addressing sociodemographic characteristics and preventive practices. Data analysis was conducted using SPSS version 24. The findings revealed that most participants were aged 20–24 years and had 1–2 years of sporting experience. Football was identified as the most common sport among respondents. Doctors, physiotherapists, and coaches were recognized as the primary sources of injury prevention knowledge. However, the practical application of preventive measures was limited by structural and academic barriers. Many

athletes reported skipping warm-up activities due to a lack of time and neglecting cool-down exercises because of exhaustion. The study concludes that despite adequate theoretical knowledge, injury prevention practices among student-athletes remain insufficient. Universities should implement mandatory and integrated safety protocols within training schedules to improve athlete safety and long-term performance.

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Keywords
Injury Prevention
Sports Injuries
Student-Athletes
University Sports
Warm-Up

Introduction

Sports injuries involve harm to the body, predominantly affecting the musculoskeletal system, and typically occur during sports, athletic endeavors, or exercise. They can vary in severity, spanning from sudden injuries to long-term conditions stemming from overuse. Such injuries often lead to pain, inflammation, or temporary disruption of normal function. Sports injuries are quite common, with research showing that over 40% of active individuals sustain an injury each year, varying by sport and activity level [1]. These injuries often involve the knee, ankle, or shoulder and are typically the result of overuse or acute trauma. The incidence is notably higher in contact sports such as football. Football players experience an average injury rate of 8.1 per 1,000 hours of play, which rises significantly to 36 injuries per 1,000 hours during matches [2]. The most frequent types of injuries involve muscles and tendons, accounting for 39.78% to 44.56%, with the majority occurring in the lower extremities. The likelihood of injury during matches is almost ten times greater compared to training sessions [2].

Evidence-based injury prevention strategies, such as neuromuscular training, have been shown to reduce sports injuries by an estimated 50% [3]. Preventing sports injuries involves a balanced approach that combines thorough preparation, correct techniques, and adherence to safety protocols. Important practices include starting with dynamic stretches to warm up, strengthening core muscles for better stability, wearing suitable protective gear, incorporating adequate rest and recovery into your routine, and progressively building up the intensity of your workouts.

Warm-ups play a vital role in preventing injuries, reducing risks through promoting better blood circulation, enhancing tissue flexibility, and improving joint lubrication [4].

Raising muscle temperature and boosting mental focus through proper warm-up routines, particularly dynamic stretching, helps protect against strains, sprains, and ligament damage.

On the other hand, a well-executed cool-down after physical activity can significantly lower the risk of injuries. It achieves this by gradually bringing down the heart rate, preventing blood from pooling in the extremities, and easing muscle stiffness. Additionally, it helps to flush out lactic acid, reduces the chances of dizziness post-exercise, and supports improved flexibility [5].

The University of the Western Cape (UWC), established in 1959, is a renowned public research institution situated in the Bellville suburb of Cape Town, South Africa (Abdelnour, 2008). The UWC is highly regarded as a leader in South African university sports, blending exceptional athletic performance with world-class facilities. The UWC manages a comprehensive sports infrastructure supporting 20 different sporting codes, ranging from recreational to high-performance levels. In addition, the UWC offers a comprehensive system for overseeing sports clubs and addressing sports injuries, supported by its specialized sports department and academic research teams.

Material and Methods

The study was carried out at the UWC in Cape Town, South Africa. The study population consisted of athletes who were registered with sports clubs at UWC. The study utilized both purposeful and convenience sampling methods. The study included a total of 110 students.

The questionnaires developed by Nuhu [6] for a similar study in Rwanda, titled "Factors Influencing Implementation of Soccer Injury Prevention Strategies in Rwanda," were used for data collection purposes. The questionnaires included questions designed to evaluate sociodemographic characteristics and the adoption of preventive strategies. A pilot study was conducted with 15 players from various sports clubs at UWC, who were not part of the main study. Each participant took 15 minutes to complete the questionnaires, and no issues were reported.

During the data collection period, questionnaires were distributed before the start of each training at the UWC sports department. The Statistical Package for the Social Sciences (SPSS), version 24, was used for descriptive data analysis.

Ethical approval to conduct the study had been obtained from the University of the Western Cape Humanities and Social Sciences Research Ethics Committee (Ethics Reference Number: HS 16/5/44). The Manager of Student Administration at UWC approved the inclusion of students in the study. The researcher distributed consent letters to the participants, asking them to voluntarily take part in the study.

Results

The study population consisted of 101 participants. As shown in Table 1, the majority of respondents fell within the 20-24 age group (58.4%), followed by those aged 14-19 (29.7%).

Table 1. Age Distribution

Age	N	%
14-19	30	29.70
20-24	59	58.40
25-29	12	11.90
Total	101	100

Regarding professional experience (Table 2), a significant portion of the sample is relatively new to their sport, with 65.6% having 1-2 years of experience, while only one participant reported 7 or more years in the field.

Table 2. Years of Experience Distribution

Years	Frequency	%
1-2	66	65.6
3-4	28	27.7
5-6	6	5.9
≥ 7	1	1
Total	101	100

Football was identified as the most prevalent sport among participants, accounting for 49.5% of the total, followed by Basketball (15.8%) and Cricket (10.9%). Rugby represented 9.9% of the sample (Table 3).

Table 3. Types of sports

Type	N	%
Rugby	10	9.9
Football	50	49.5
Basketball	16	15.8
Cricket	11	10.9
Total	101	100

Fig. 1 illustrates the levels of knowledge regarding injury prevention across the different sporting disciplines. To acquire this knowledge, players rely on various figures.

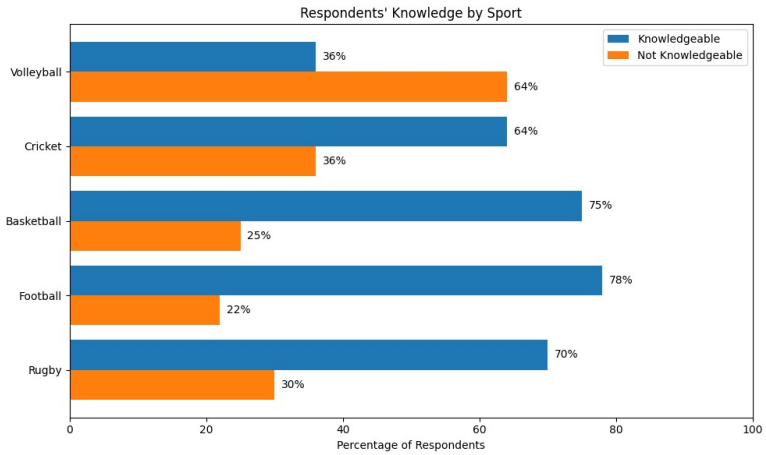


Fig. 1. Players' knowledge of injury prevention within the type of sports

In Table 4, Doctors and Physiotherapists are viewed as the most vital source, with 72.4% of players ranking them as "Most Important." Coaches also play a significant role, rated as "Most Important" by 50% of the players. Conversely, the media was largely regarded as the "Least Important" source (65.3%).

Table 4. Sources of players' knowledge of injury prevention

Learned about injury prevention		Frequency	Percentage
Doctor/ Physiotherapist	Most important	71	72.4
	Important	24	24.5
	Least important	3	3.1
Media	Most important	8	8.2
	Important	26	26.5
	Least important	64	65.3
Coaches	Most important	49	50.0
	Important	44	44.9
	Least important	5	5.1

Fig. 2 shows that 59% of the players do not have enough time to do a warm-up during the training sessions, while 17% did not get any advice to do so before training or were too tired. Only 3% cited a lack of proper equipment, and 4% did not do a warm-up before training because nobody was doing it.

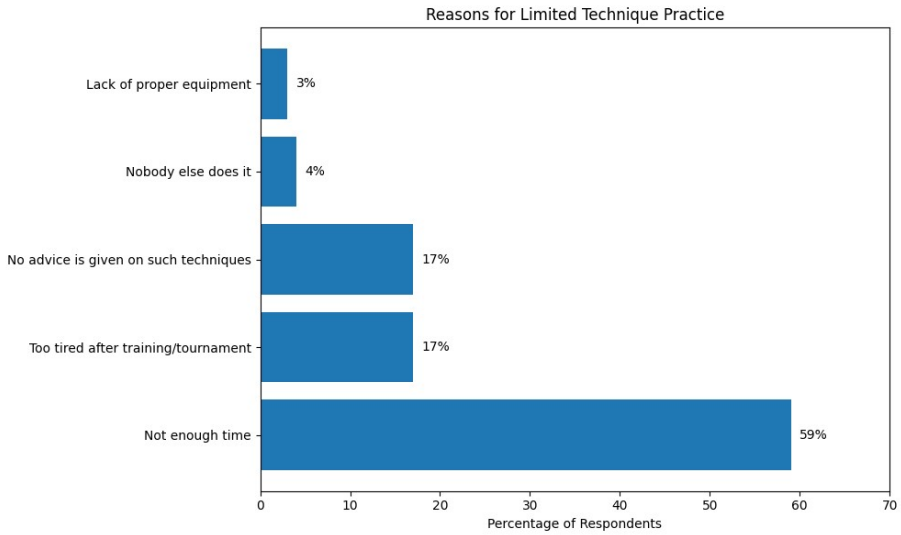


Fig. 2. Players' reasons for not doing warm-up during training as an injury prevention strategy

Fig. 3 depicts that during training, 31% of the players did not do a cool-down due to tiredness after training or competition. Some players indicated a lack of enough time (24%), do not believe it is necessary (22%), nobody else does it (18%), lack of proper equipment (4%), and no advice given as a reason why they did not cool down during training as an injury prevention strategy.

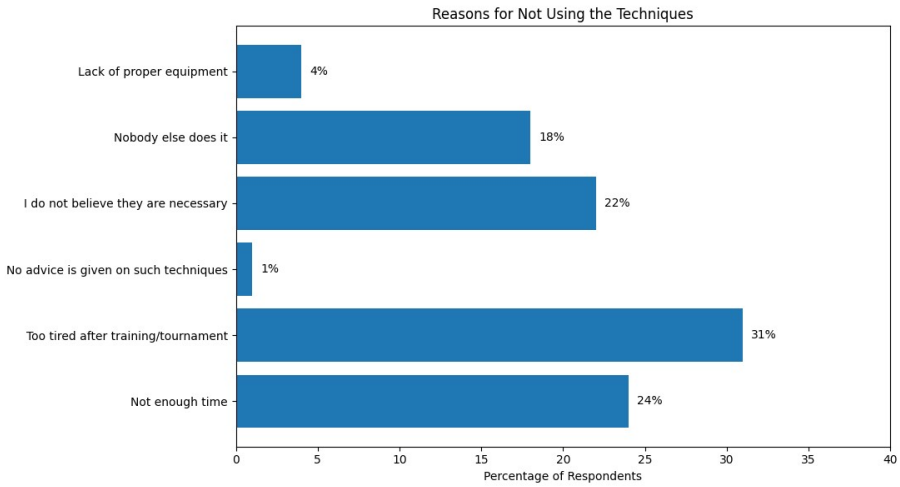


Fig. 3. Players' reasons for not doing cool-down during training as an injury prevention strategy

Discussions

The demographic analysis reveals a participant profile predominantly aged between 14 and 24 years, with a significant concentration in the 20–24 age bracket. This distribution aligns with the traditional university-aged population in South Africa, particularly within institutions such as the UWC. Furthermore, the sample indicates a concentration of athletes in the nascent stages of their competitive careers, with most participants reporting only one to two years of experience. This suggests that university sports clubs function primarily as foundational environments for athletic initiation rather than hubs for long-term professional specialization. These findings are consistent with the "initiation" and "development" phases of the holistic athletic career model, wherein student-athletes explore diverse sporting disciplines during their transition into higher education [7].

The high prevalence of football among participants underscores its status as a cornerstone of university sporting culture. This dominance mirrors global trends where football is recognized as a "universal sport" characterized by low economic barriers and minimal equipment requirements, enhancing accessibility for diverse student cohorts [8]. Within the university ecosystem, football serves as a critical mechanism for social cohesion, fostering institutional pride and community engagement across academic and cultural divides. The sport's adaptability—spanning informal recreational play to structured competitive leagues—further explains its disproportionate representation relative to more specialized athletic disciplines.

The empirical data demonstrate a definitive hierarchy regarding the perceived credibility of information sources for injury prevention. The overwhelming reliance on physicians and physiotherapists as the most critical sources aligns with evidence suggesting that student-athletes prioritize clinical expertise to safeguard their "dual-career" longevity [9].

The professionalization of university support staff has cultivated a culture wherein athletes seek medical validation to manage the physiological demands of competition.

While coaches are viewed as a "first line of defense," their secondary ranking behind medical professionals suggests that athletes distinguish between performance-based instruction and clinical safety protocols. Coaches remain pivotal in the knowledge translation process; although they may lack clinical credentials, their role in implementing preventive measures during daily training is essential for adherence [10]. Conversely, the dismissal of media as a credible source reflects a critical skepticism toward unverified sports health trends and the "infodemic" of digital misinformation [11]. This preference for face-to-face institutional expertise suggests that centralized, expert-led prevention programs are likely to achieve higher compliance than decentralized digital campaigns [12].

The data identifies "time pathology" as the primary systemic barrier to injury prevention, with participants frequently citing insufficient time for warm-up protocols. This is a critical concern, as truncated or omitted warm-ups significantly escalate the risk of acute soft-tissue injuries [13]. In the university context, the pressure to balance rigorous academic schedules with limited facility availability often results in "temporal crowding," where tactical training is prioritized over physiological preparation [14].

Furthermore, reports of physical exhaustion and a lack of professional advice indicate deficiencies in technical supervision and workload management. The absence of coach-led directives for warm-ups reflects a deficit in the organizational "safety culture" [7]. When athletes are too fatigued to engage in preparatory exercises, it suggests a failure to monitor internal training loads, which increases vulnerability to overtraining and injury [15]. Because barriers appear to be structural and educational rather than material, university programs must transition toward mandatory Integrated Neuromuscular Training (INT) protocols that are strictly embedded within the allocated training duration [16].

Previous studies have similarly emphasized the high prevalence of sports injuries among university athletes and the urgent need for structured prevention strategies. Research conducted by Abdelnour [17] at the University of the Western Cape reported a considerable burden of musculoskeletal injuries among volleyball players, highlighting the vulnerability of university athletes to repetitive strain and competition-related trauma. Evidence from a systematic review by Ding et al. [18]and colleagues further demonstrated that neuromuscular training programs significantly reduce musculoskeletal injury risk and improve athletic performance outcomes. In addition, adolescent and university athletes increasingly rely on digital platforms and mobile devices for sports health information, although professional healthcare providers remain the most trusted knowledge source [19]. The growing influence of social media in sports medicine presents both opportunities and risks, as misinformation

may negatively affect athlete decision-making and injury prevention behaviors [20]. These findings reinforce the importance of integrating evidence-based education, clinical supervision, and structured injury prevention protocols within university sports programs to ensure athlete safety and long-term performance development.

Conclusion

The study suggests that athletic safety is frequently compromised by temporal crowding and academic pressures, which lead to the omission of essential warm-up protocols and inadequate load management. To mitigate these risks, university athletic departments must move beyond elective safety guidelines and institutionalize mandatory Integrated Neuromuscular Training (INT). By embedding clinical safety standards directly into the tactical training schedule, institutions can overcome structural barriers, address physical exhaustion, and cultivate a more robust safety culture that protects the dual-career longevity of the student-athlete.

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Conflict of Interest

The authors declare no conflict of interest.

References

[1] A. Chowdhery, A. Agarwal, and A. Saini, "Prevalence of sports injuries among athletes in the Lucknow region: A cross-sectional study," *Cureus*, vol. 17, no. 8, Art. no. e90266, 2025.
[2] A. S. Bejan and P. Lucaci, "Epidemiology of injuries in professional and amateur football men (Part I): A systematic review," *Journal of Clinical Medicine*, vol. 12, no. 19, Art. no. 6293, 2023.
[3] *American Orthopaedic Society for Sports Medicine*, "STOP is a valuable tool for the local community and coaches," *Sports Medicine Update*, 2023.
[4] *Precision Performance & Physical Therapy*, "The importance of warm-up: Key to injury prevention," Aug. 20, 2025.
[5] M. Cretu and S. Cicericä, "The importance of cool-down in sports training," *Journal of Sport and Physical Education*, vol. 11, no. 1, pp. 12–18, 2024.
[6] A. Nuhu, "Factors influencing implementation of soccer injury prevention strategies in Rwanda," Master's dissertation, University of the Western Cape, 2008.
[7] P. J. Read, P. Jimenez, J. L. Oliver, and R. S. Lloyd, "Injury prevention in male youth soccer: Current practices and perceptions of practitioners and community coaches," *Physical Therapy in Sport*, vol. 48, pp. 1–9, 2021.
[8] R. Giulianotti, *Sport: A Critical Sociology*, 2nd ed. Cambridge, U.K.: Polity Press, 2023.
[9] A. Nixon and C.-M. Roberts, "Credibility of information sources for injury prevention: A study of student-athletes' perceptions," *Journal of Sport & Exercise Psychology*, vol. 45, no. S1, pp. S105–S106, 2023.
[10] L. Geertsema, C. Geertsema, A. Farooq, R. Whiteley, and R. Bahr, "Injury prevention knowledge, beliefs and strategies in elite female football across six continents," *British Journal of Sports Medicine*, vol. 55, no. 20, pp. 1140–1145, 2021.

[11] A. Naderi, H. Degens, and M. H. Rezvani, "Health literacy and injury prevention knowledge among university athletes: A cross-sectional study," *Journal of Sports Science and Medicine*, vol. 21, no. 3, pp. 450–458, 2022.
[12] O. M. Olagbegi, S. Sanni, and A. L. Oyeyemi, "Attitudes towards sports injury and injury prevention among university athletes," University of Manitoba MSpace Repository, 2024.
[13] L. Ding, L. L. Lau, K. Herman, M. T. Gross, and A. S. Cheng, "Effectiveness of warm-up programs in preventing sports injuries: A systematic review and meta-analysis," *Journal of Science and Medicine in Sport*, vol. 25, no. 1, pp. 45–52, 2022.
[14] M. C. Minnig *et al.*, "Barriers and facilitators to the adoption and implementation of evidence-based injury prevention training programmes: A narrative review," *BMJ Open Sport & Exercise Medicine*, vol. 8, no. 3, Art. no. e001374, 2022.
[15] S. L. Halson and P. Hellard, "Implementation of monitoring systems to prevent overtraining and injury," *International Journal of Sports Physiology and Performance*, vol. 16, no. 6, pp. 760–765, 2021.
[16] A. Nixon and C.-M. Roberts, "Barriers to and promotion of injury prevention: A focus on the university student-athlete," *Frontiers in Sports and Active Living*, vol. 7, Art. no. 1566208, 2025.
[17] H. Abdelnour, "Prevalence and pattern of injuries among players at the University of the Western Cape Volleyball Club," MSc dissertation, University of the Western Cape, 2008.
[18] L. Ding, P. Wang, H. Cao, Y. Zhu, and S. Tang, "Effectiveness of neuromuscular training on the prevention of musculoskeletal sports injuries: A systematic review and meta-analysis," *Journal of Sports Science and Medicine*, vol. 21, no. 1, pp. 120–131, 2022.
[19] C. Geertsema, L. Geertsema, A. Farooq, J. Vosloo, and J. Adriaakse, "Device use and sources of knowledge regarding sports injury prevention among adolescent athletes," *International Journal of Sports Physical Therapy*, vol. 16, no. 6, pp. 1432–1440, 2021.
[20] A. Naderi, H. Degens, and A. Rezischmidt, "Social media and sports medicine: A double-edged sword for athlete health," *Journal of Medical Internet Research*, vol. 24, no. 3, Art. no. e34211, 2022.

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