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Barriers to Injury Prevention in University-Level Contact Sports

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ABSTRACT

Injuries affecting the musculoskeletal system impact over 40% of active individuals annually. In university settings, athletes face high risks during matches especially in contact sports like football where injury rates can reach 36 per 1,000 hours. While evidence-based strategies like neuromuscular training and proper warm-up/cool-down routines can reduce injury risk by 50%, implementation remains inconsistent.

This study aimed to explore the knowledge and adoption of injury prevention strategies among student-athletes and to identify barriers to their implementation. A descriptive cross-sectional study design was conducted between September 2016 and September 2017 with 101 student-athletes at UWC using purposive and convenience sampling. Data were collected via validated questionnaires focusing on sociodemographic and preventive practices. Analysis was performed using SPSS version 24.

The sample was predominantly aged 20 – 24 (58.4%), with 1–2 years of experience (65.6%). Football was the most common sport (49.5%). While players recognised doctors/physiotherapists (72.4%) and coaches (50%) as vital knowledge sources, practical application was hindered by structural barriers. Specifically, 59% of athletes skipped warm-ups due to lack of time, and 31% neglected cool-downs due to exhaustion.

Despite trusting medical advice, university athletes skip injury prevention due to time constraints and exhaustion.

Keywords: Injuries, Contact sports, Prevention, Warm-up, Cool-down, University of the Western Cape (UWC).

1. Introduction

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 a 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 (Chowdhery et al., 2025). 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 injuries per 1,000 hours of play, which rises significantly to 36 injuries per 1,000 hours during matches (López-Valenciano et al., 2020). The most frequent types of injuries involve muscles and tendons, accounting for 39.78% to 44.56% of all injuries, with the majority occurring in the lower extremities. The likelihood of injury during matches is almost ten times greater than during training sessions (López-Valenciano et al., 2020). Prevention strategies, such as neuromuscular training, have been shown to reduce sports injuries by an estimated 50% (*STOP Is a Valuable Tool for Local Community and Coaches | AOSSM*, 2023). Preventing sports injuries involves a balanced approach that combines thorough preparation, correct techniques, and adherence to safety protocols. Important practices include starting with dynamic stretching 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.

Various strategies are implemented in sports to reduce the prevalence of injuries. Warm-up strategies in sports play a vital role in preventing injuries, reducing risks through promoting better blood circulation, enhancing tissue flexibility, and improving joint lubrication (*Warm-Up Exercises for Injury Prevention | Precision Performance*, 2025). Raising muscle temperature and boosting mental focus through proper warm-up routines, particularly dynamic stretching, help protect against strains, sprains, and ligament damage. Furthermore, cooling 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 flush out lactic acid, reduce the chances of dizziness post-exercise, and support improved flexibility (Van Hooren & Peake, 2018).

The University of the Western Cape (UWC), situated in the Bellville suburb of Cape Town, South Africa (Abdelnour & Twetwa, 2008), manages a comprehensive sports infrastructure that supports different sporting codes, ranging from recreational to high-performance levels. It offers a comprehensive system for overseeing sports clubs and addressing sports injuries, supported by its specialized sports department and academic research teams. Finally, the study investigates the levels of knowledge and adoption of injury prevention strategies among student-athletes, as well as the barriers to their implementation.

2. Methodology

A descriptive cross-sectional study design was used. 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. Both purposive and convenience sampling methods were utilized. The study included a total of 101 students.

To achieve the aim of the study, questionnaires developed by Nuhu, A. (Nuhu, 2008) for a similar study in Rwanda, titled "Factors Influencing Implementation of Soccer Injury Prevention Strategies in Rwanda," were used for data collection. The questionnaires included questions designed to evaluate sociodemographic characteristics and the adoption of preventive strategies. In addition, they included questions regarding knowledge, attitude, and practices related to injury prevention. 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.

The study duration was between September 2016 and September 2017. During the data collection period, questionnaires were distributed before the start of each training session at the UWC sport department. The Statistical Package for the Social Sciences (SPSS), version 24, was used for descriptive data analysis. Approval to conduct the study was 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.

3. Results

The study population consisted of 101 undergraduate 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.

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

In 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

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

Of the types of sport, football was identified as the most prevalent sport among participants, accounting for 53.4% of the total, followed by Basketball (18.8%). Cricket and Rugby represented 13.8% of the sample (Table 3).

Table 3. Types of sports

Sport	N	%
Rugby	14	13.8
Football	54	53.4
Basketball	19	18.8
Cricket	14	13.8
Total	**101**	**100**

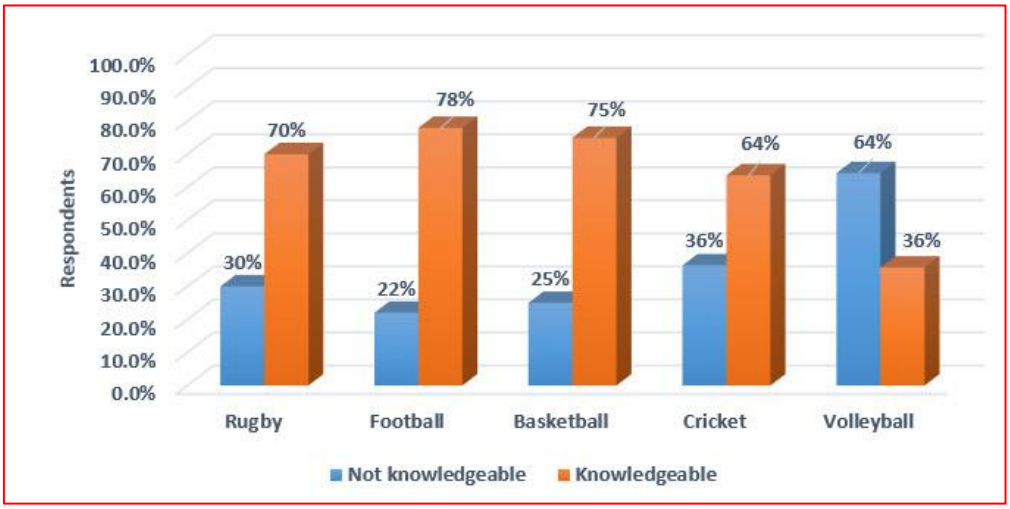

Figure 1. Players' Knowledgeability of Injury Prevention Within the Type of Sports.

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

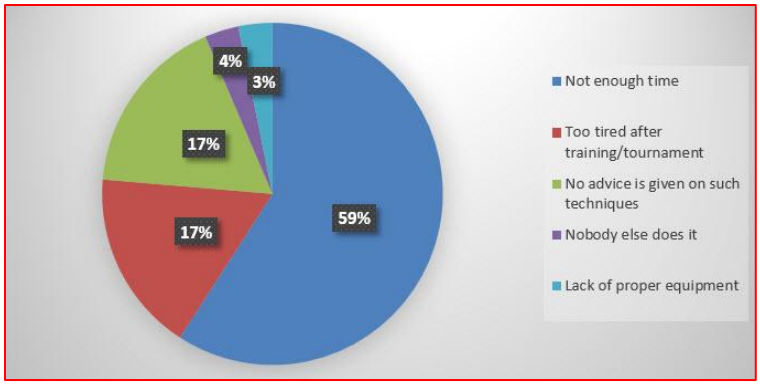

Figure 2. Players' Reasons for Not Doing Warm-up Before Training as an Injury Prevention Strategy.

As shown in Figure 2, 60% of the players do not have enough time to do a warm-up before the training, while 17% did not get any advice to do so. Only 3% lacked proper equipment, and 4% did not do a warm-up before training because nobody else was doing it.

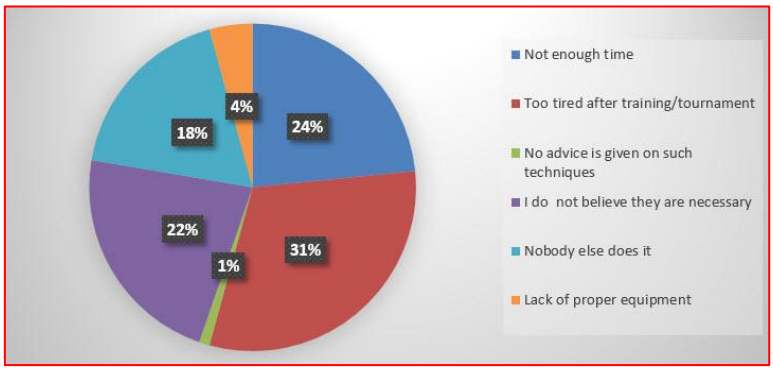

Figure 3. Players' Reasons for Not Doing Cool-down After Training as an Injury Prevention Strategy.

As shown in **Figure 3**, during training, 32% of the players did not do a cool-down because they were tired after training. Some players indicated 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 was given as reasons why they did not cool down after training.

In **Table 4**, doctors and physiotherapists are viewed as the most vital source, with 72.4% of players ranking them as "most important" Source. Coaches also play a significant role, rated as "most important" by 50% of the players. Conversely, 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

4. Discussion

The participant profile predominantly comprised individuals aged between 14 and 24 years, with a significant concentration in the 20–24-year age group. This distribution aligns with the traditional university-aged population in South Africa.

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 as hubs for long-term professional specialisation. 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 (Wylleman, 2019). The high prevalence of football among participants underscores its status as a cornerstone of university sporting culture. This dominance mirrors global trends, in which football is recognised as a "universal sport" characterised by low economic barriers and minimal equipment requirements, enhancing accessibility for diverse student cohorts (Giulianotti, 2015). 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 specialised athletic disciplines.

The 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 prioritise clinical expertise to safeguard their "dual-career" longevity (Bolling et al., 2020). The professionalisation of university support staff has cultivated a culture in which athletes seek medical validation to manage the physiological demands of competition. While coaches are viewed as a "first line of defence," 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 to adherence (Geertsema et al., 2021). Conversely, the dismissal of media as a credible source reflects a critical scepticism toward unverified sports health trends and the "infodemic" of digital misinformation (Wang et al., 2026).

This preference for face-to-face institutional expertise suggests that centralised, expert-led prevention programmes are likely to achieve higher compliance than decentralised digital campaigns (Whalan et al., 2020). The data identify "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 (Ding et al., 2022). In the university context, the pressure to balance rigorous academic schedules with limited facility availability often results in "temporal crowding," where tactical training is prioritised over physiological (Whalan et al., 2020). Furthermore, reports of physical exhaustion and a lack of professional guidance indicate deficiencies in technical supervision and workload management. The absence of coach-led warm-up directives reflects a deficit in the organisational "safety culture" (Read et al., 2018). When athletes are too fatigued to engage in preparatory exercises, this suggests a failure to monitor internal training loads, which increases vulnerability to overtraining and injury (Soligard et al., 2016). Because these barriers appear to be structural and educational rather than material, university programmes must transition toward mandatory Integrated Neuromuscular Training (INT) protocols that are strictly embedded within the allocated training duration (Bolling et al., 2018).

5. Limitation

The study's small sample from a single institution limits generalisability, while its exclusive reliance on descriptive statistics prevents hypothesis testing. Adding inferential analysis and a broader cohort would strengthen the paper.

6. Conclusion

This study shows that university athletes are mostly young beginners, with football dominating the sports culture. While players highly trust doctors and physiotherapists for injury-related advice, a major gap exists between their knowledge and actual practices. Severe time constraints and physical exhaustion act as the primary structural barriers, forcing athletes to skip critical warm-up and cool-down protocols. Since these issues stem from poor scheduling and workload management rather than a lack of equipment, university clubs must transform their safety culture. Moving forward, sports administrations must integrate mandatory, expert-led neuromuscular training directly into standard practice times. Finally, coaches must receive better training to monitor player fatigue and enforce safety compliance in coordination with medical staff.

Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Data Availability

No data was used for the research described in the article.

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