

KNOWLEDGE OF SPORTS INJURY PREVENTION AND MANAGEMENT AMONG STUDENT ATHLETES IN UNIVERSITY OF NIGERIA NSUKKA

**John .E. Ogugua, Victoria N. Onwubiko, Fabian C. Ugwueze, Chukwuebuka N. Bosah,
Umar J. Badaru & Godfrey C. Nji**

Department of Human Kinetics and Health Education
Faculty of Education, University Of Nigeria, Nsukka.

Abstract

The study was conducted to investigate the knowledge of sport injury prevention and management among student athletes in University of Nigeria Nsukka. Three specific objectives with three corresponding research questions and two hypotheses were postulated to guide the study. Descriptive survey research design was used for the study. The population for the study consisted of 386 Students athlete in University of Nigeria, Nsukka. There was no sample because the population was a manageable size. The instrument for data collection was 16-item self-structured questionnaire on knowledge of sport injury prevention and management (KSIPMQ). The split- half method was used to test the reliability of the instrument and a reliability co-efficient of .82 was obtained. Frequencies and percentages were used to analyze and answer research questions while Pearsons Chi-Square was used to test the null hypothesis at 0.05 level of significance. The results revealed among others that Student athletes in the University of Nigeria Nsukka have knowledge of sport injury prevention (73.3%) and knowledge of sports injury management (77.1%). That both Male and Female student athletes in UNN have knowledge of sport injury prevention (86.6%) and (82.1%), sports injury management (79.2%) and (74.1%) respectively. Also, there was no significance difference in knowledge of sport injury prevention among student athletes in University of Nigeria Nsukka based on gender ($\chi^2 = 1.427$, $p = .232 > .05$) and there was no significant difference in knowledge of sports injury management among student athletes in university of Nigeria Nsukka based on gender ($\chi^2 = 1.213$, $p = .271 > .05$). The study recommended that coaches should equip student athletes with outlines on prevention and management of sports related injuries.

Keywords: sports injury, knowledge, prevention, management

Introduction

Participating in sports and physical activities is not only an integral part of a student's educational experience but also crucial for their physical and mental well-being. However, it comes with a level of risk, as sports-related injuries are common occurrence among student athletes (Prieto-González, Martínez-Castillo, Fernández-Galván, Casado, Soporki & Sánchez-Infante, 2021). These injuries can range from minor sprains to severe, potentially life-altering conditions. As responsible educators, coaches, and parents, it is their duties to ensure the safety of the student athletes while nurturing their athletic talents. The global landscape of knowledge of sports injury prevention and management is marked by a growing awareness of the importance of safeguarding athletes' health and well-being. According to the Centers for Disease Control and Prevention (CDC, 2019), high school athletes account for an estimated 2 million injuries, 500,000 doctor visits, and 30,000 hospitalizations each year in the United States alone. These numbers are not just statistics; they represent the pain and suffering of young athletes and the burden on our healthcare system. One of the barriers to the effectiveness of a preventive program is lack of consideration regarding interrelations

between physical, biological, economic and social aspects (Bolling, van Mechelen, Pasman, & Verhagen, 2018).

In Sub-Saharan Africa, resource constraints often limit the implementation of comprehensive knowledge of sports injury prevention and management. An Injury Prevention Program is a comprehensive approach to reducing the risk of injuries, illnesses, and harm in various settings, such as sports, workplaces, or communities. This however has been proven in scientific studies to significantly mitigate the burden of injuries and reduce time-loss in football (Al Attar, Soomro, Pappas, Sinclair & Sanders, 2016). Knowledge of sports injury prevention and management in Nigeria, like in many countries, are essential to ensure the health and safety of student athletes and promote sports participation. There is a dearth of information on the epidemiology of sports injuries in Nigeria (Owoeye, 2010). Knowledge is the awareness, understanding, or familiarity with information, facts, descriptions, or skills acquired through experience, education, or reasoning. It involves the possession of information, facts, or ideas about a particular subject or topic (Andersen, 2018). In the context of this study, knowledge refers to the understanding, awareness and familiarity with the concepts, principles and practices related to prevention and managing sports injuries. By possessing knowledge on sports injury prevention and management, student athletes, coaches, and healthcare professionals can work together to create a safer sporting environment.

Sports play a pivotal role in societies worldwide, serving as a source of physical fitness, recreation, and competitive spirit. Engaging in sports activities helps individuals develop physical skills, enhance overall health, and build discipline through regular practice and training (Kohl, Cook & Board, 2013). Additionally, sports foster social connections and teamwork, as many sports are team-based, requiring effective communication and cooperation among participants. Sporting events, whether at the amateur or professional level, draw diverse audiences and contribute significantly to the entertainment industry, with millions of fans passionately following their favorite athletes and teams (Popescu et al., 2020). Segrave and Conger (2019) defined sports as category of physical activities that involve human skill and effort, typically governed by rules or traditions, and often existing within a cultural, social, and economic context. In this context, sports are defined as the source of physical fitness, recreation and those physical activities that involves sports athletes skills and effort. While sports offer numerous physical and mental benefits, it's essential to acknowledge and address the risks associated with participation in sports which leads to injury.

An injury is any physiological damage to living tissue. Injury is defined as physical harm or damage to the body, typically resulting from accidents, falls, overuse, or other traumatic events. Injuries can range from minor cuts, bruises, and sprains to more severe conditions like fractures, concussions, or dislocations (World Health Organization [WHO], 2020). Injury is a broad term encompassing any harm or damage to the body that impairs its normal functioning. It can occur suddenly due to accidents or traumas, or it can develop gradually over time due to overuse or repetitive stress on the body (Centers for Disease Control and Prevention [CDCP], 2021). Injuries can affect various parts of the body, including bones, muscles, tendons, ligaments, and internal organs (WHO. 2020). The severity of injuries can range from minor, requiring minimal medical intervention, to life-threatening, necessitating urgent medical care. Parry-Jones (2015) defined injury as the physical harm or damage to the body resulting from the sudden application of mechanical energy. In this context, injury is defined as damage to the body of student athletes resulting from falls,

overuse of the muscles and other traumatic events. As the competitive element intervenes athletes train harder and longer which leads to sports related injuries.

Sports injuries are any bodily damage sustained during participation in competitive or non-competitive athletic activity which affects bones or soft tissue. The increased participation in sporting activities has given rise to sports related risks of injuries (Kralik, 2015). Sports injury is an injury or illness that occurs during sports or physical activity, which can affect an athlete's ability to participate in their sport or activity. Sports injuries can be acute (sudden onset) or chronic (gradual onset), and can affect various parts of the body, such as: musculoskeletal system, nervous system and cardiovascular system. Bahr & Krosshaug (2018) posited that Sports injuries can have significant physical, emotional, and financial consequences for athletes, teams, and organizations. Prevention, proper diagnosis, and effective treatment are essential to minimize the risk and impact of sports injuries. Despite the identification and carrying out of procedural precautions, sports injuries still occur because of the complexity and several areas of uncertainty that are inevitable (Tee, McLaren & Jones, 2019). Sports have actions that increase the risk for injuries (Reid & Ritchie, 2011). These injuries can eventually cause permanent disabilities in student athletes which may affect their future sporting careers (Weiler, Van Mechelen, Fuller & Verhagen, 2016) Males are more likely to sustain at least one serious sports-related injury than females (LeBrun et al. 2018). Environmental factors such as playing surfaces, sport equipment, playing attire, and the weather, all pose serious extrinsic risk of injury to the participant (Kerr, Roos, Schmidt & Marshall, 2012). The common types of injuries are sprains, strains, fractures, overuse injuries, wounds, stress fractures and dislocations (Frush, & Lindenfeld, 2019). The legal requirements that come with injury risk scenarios has therefore, required sports organizers to have in place injury risk management guidelines and procedures (Kerr, Roos, Schmidt & Marshall, 2012). Sports injury prevention is a critical component of ensuring the health and safety of athletes and individuals participating in physical activities. Preventing sports injuries requires a proactive approach that addresses the physical, technical, and environmental factors that contribute to their occurrence.

Injury prevention involves various methods and approaches to reduce the occurrence and severity of injuries. Injury prevention is the effort to prevent and manage injury should it occur. In this context injury prevention is defined as the efforts put by the student athletes in minimizing the incidence of injury. Injury prevention involves a wide range of techniques and interventions aimed at reducing, mitigating the occurrence and severity of injuries and accidents. Management refers to the process of planning, organizing, leading, directing and controlling resources to achieve specific goals and objective. Management is the process of achieving organizational goals through planning, organizing, leading, and controlling resources" (Daft, 2020). According to Kotler (2017), Management involves coordinating and controlling resources to achieve specific goals and objectives. In the context of this study, management refers to the planning, organization, and supervision of measures aimed at preventing and controlling injuries. Effective management involves: Identifying the risks, implementing preventive measures, providing acute care, coordinating rehabilitation and evaluating effectiveness. Verhagen (2019), Stressed the importance of a multidisciplinary approach, involving athletes, coaches, and healthcare professionals, in injury prevention and management. Since injury in sports can never be fully eliminated, coaches must put greater effort in reducing risks (Tee, McLaren & Jones, 2019). They must be equipped with vast knowledge on how to prevent and manage these situations (Kralik, 2015). It is the responsibility of the coach to supervise, and provide proper instruction for the activity and

enforce rules and regulations. Coaches should be conversant with their legal duties towards students' athletes and should continually up-date their knowledge.

Student is a person engaged in study. Garcia (2017) defines student as someone who seeks education, embraces challenges, and strives for personal growth by engaging in a variety of learning experiences and academic pursuits. Kumar (2019) also states that student is an individual who is committed to acquiring knowledge, developing critical thinking skills, and expanding their understanding of the world through formal education. In this study, student is used for anyone who is learning, including mid-career adults who are taking vocational education or returning to university or someone who attends an educational institution. While the term 'student' encompasses a broad range of individuals engaged in various forms of learning, athlete is an individual who possesses specialized physical skills and abilities.

Athlete is person trained or gifted in exercises or contests involving physical agility, stamina, or strength; a participant in a sport, exercise, or game requiring physical skill. Campa and Coratella (2021) defined athletes as a person who is highly trained in specific sports as his/her major activity, spending several hours in all or most of the days for training and actively participating in formal sport competitions including local, regional, and national sport competitions. Magness (2013) stated that athletes are individuals who engage in deliberate and purposeful training to develop their physical abilities, mental resilience, and strategic thinking, with the goal of achieving optimal performance in their sport. In context of this study, a student athlete is a student trained or gifted in exercises or contests involving physical agility, stamina, or strength; a participant in a sport, exercise, or game requiring physical skill. Sports injury prevention is a critical component of ensuring the health and safety of athletes and individuals participating in physical activities. Preventing sports injuries requires a proactive approach that addresses the physical, technical, and environmental factors that contribute to their occurrence. Injury prevention involves various methods and approaches to reduce the occurrence and severity of injuries.

Regrettably, with well equipped knowledge of sports injury prevention and management, including the risks, symptoms and treatment of common injuries by the student athlete coaches, athletes in university of Nigeria Nsukka seem to engage in rough plays during training and competition. Some athletes do not follow the rules and regulation of the games, they have little or no idea on how to manage injury. It is therefore imperative to assess the knowledge of sports injury prevention and management among student athletes in university of Nigeria, Nsukka, to facilitate evidence-based preventive and corrective management for injuries among athletes. This study was anchored on the knowledge-attitude-practice KAP theory was developed by Berelson and Steiner in 1964. It suggests that people's behavior is influenced by their knowledge, attitudes, and practices. The theory is applied to knowledge of sports injury prevention and management among student athletes as it explores the relationships between student athletes' Knowledge related to sports injury prevention and management.

Purpose of the study

The purpose of this study was to determine the knowledge of sports injury prevention and management among student athletes in the University of Nigeria Nsukka. Specifically, the study seeks to find out;

1. Knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka.

2. Knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka based on gender.
3. Knowledge of sports injury management among student athletes in university of Nigeria Nsukka
4. Knowledge of sports injury management among student athletes in university of Nigeria Nsukka based on gender

Research Questions

The following research questions guided the study

1. What is the knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka?
2. What is the knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka based on gender?
3. What is the knowledge of sports injury management among student athletes in university of Nigeria Nsukka?
4. What is the knowledge of sports injury management among student athletes in university of Nigeria Nsukka based on gender?

Hypotheses

The following null hypothesis was postulated and was tested at 0.05 level of significance.

1. There is no significant difference in the knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka based on gender.

Methods

The study adopted the descriptive survey research design. It is a quantitative method that focuses on describing the characteristics of a phenomenon. The study was conducted at the University of Nigeria, Nsukka. The university operates two campuses; Nsukka campus and Enugu campus. However the study focused on students –athletes in Nsukka, which is the main campus of the university. The population for the study consisted of all 386 student athletes both male and female of University of Nigeria, Nsukka Campus. There was no sampling for the study as the entire population was used, since they were of manageable size. The instrument for the study was researcher structured questionnaire. The instrument was face validated by three experts from the department of Human Kinetic and Health Education, University of Nigeria, Nsukka. The reliability of the instrument was also established using split half method. The reliability coefficient of 0.82 was obtained. The instrument was therefore deemed reliable for the study. The data was collected by distributing questionnaire to the respondents. The responses on the questionnaire were checked to ensure they were properly filled. They were tallied and were converted into frequency distribution tables and percentages for the purpose of descriptions and for answering the research questions. Chi-square statistics was used to test the null hypotheses at .05 level of significance.

Results

The results of the study were presented in tables 1-5 below

Research Question One: What is the knowledge of sports injury prevention among student athletes in University of Nigeria Nsukka?

Table 1: Frequency and Percentage Analysis of Knowledge of Sports Injury Prevention among Student Athletes in university of Nigeria Nsukka (n=384)

S/N	Knowledge of sports injury prevention among student athletes	Yes f(%)	No f(%)
1	Sports injury is steps taken to minimize the risk of injury occurrence while participating in sports or physical activities.	347(90.4%)	37(9.6%)
2	Do you regularly check the equipments and facilities for wear and tear before use to prevent collision, slip and fractures?	226(58.9%)	158(41.1%)
3	Do you engage in proper warm-ups and stretches before training to avoid muscle cramps and muscle strain?	294(76.6%)	90(23.4%)
4	Do you consume sufficient amount of carbohydrates protein and fats in the right proportion before and after training to help prevent sports related injuries and support overall performance?	242(63.0%)	142(37.0%)
5	Do you wear protective gears and equipments such as helmets and mouth guards to prevent sports related injuries like concussion in your specific sports?	240(62.5%)	144(37.5%)
6	Do you adhere to the rules and regulations guiding the game to minimize the risk of injury?	266(69.3%)	118(30.7%)
7	Do you train under the supervision of a coach or trainer when learning a new skill to acquire proper techniques?	273(71.1%)	111(28.9%)
8	Are you aware that overtraining in sports causes decreased performance, burnout, shin splint and knee injuries?	239(62.2%)	145(37.8%)
9	Do you use proper techniques during training to helps prevent inflammation of the tendons and fractures?	241(62.8%)	143(37.2%)
Cluster		84.6%	15.4%

Data in table 1 show that student athletes in university of Nigeria Nsukka have knowledge of sports injury prevention (84.6).

Research question Two: What is the knowledge of sports injury management among student athletes in university of Nigeria Nsukka? Data answering this question is contained in table 2

Table 2: Frequency and Percentage Analysis of Knowledge of Sports Injury Management among Student Athletes in University of Nigeria Nsukka (N= 384)

S/N	Knowledge of sports injury management among student athletes	Yes f(%)	No f(%)
1	Sports injury management are steps taken to minimize the impact of injury, promote health and facilitate a safe and timely return to sports or physical activities	341(88.8%)	43(11.2)
2	Are aware of the RICE principle (Rest, Ice, Compression, Elevation) for managing sports related injuries?	192(50.0%)	192(50.0%)
3	Do you prioritize rehabilitation, physical therapy, rest and recovery as treatment of injury?	263(68.5%)	121(31.5%)
4	Have you ever used injury management techniques such as taping or bracing?	205(53.4%)	178(46.6)
5	Provision of first aid box during training by the coach or trainer	243(63.3%)	141(36.7%)
6	Coaches/trainers should educate athletes on proper techniques, training guidelines and appropriate equipment to use to reduce the risk of sports related injuries.	262(68.2%)	122(31.8%)

- 7 Do you seek medical attention when the pains or swelling are severe? 254(66.1%) 130(33.9%)

Cluster 77.1%

Data in table 2 show that student athletes in university of Nigeria Nsukka have knowledge of sports injury management (77.1%)

Hypothesis one: There is no significant difference in knowledge of sports injury prevention among student athletes in university of Nigeria Nsukka based on gender. Data testing this hypothesis is contained in table 3

Table 3: Chi-square Test of no Significant Difference in Knowledge of Sports Injury Prevention among Student Athletes in University of Nigeria Nsukka based on Gender (N=384)

Gender	N	χ^2	df	p- value
Male	216	1.427	1	.232
Female	168			

Results in Table 3 showed the Pearson Chi-square value with the corresponding p-value for hypothesis of no significance difference in knowledge of sport injury prevention among student athletes in university of Nigeria Nsukka based on gender ($\chi^2 = 1.427$, $p = .232 > .05$). Since the p-value is greater than .05 level of significance, the null hypothesis was therefore accepted. This implies that there is no significance difference in the sport injury prevention among student athlete in university of Nigeria Nsukka on gender.

Discussion

The finding in Table 1 shows that student athletes in university of Nigeria Nsukka have knowledge of sports Injury prevention. The finding is expected and therefore not surprising, this is because students have been taught from primary and secondary school and even in their present sport about the importance of preventing sports related injury while participating in sports or physical activities. This finding agrees with Celso (2019) who carried out research to assess the safety awareness, practices and injury prevention of athletes in Zambales National High School, which results that student has high sport injury practice and prevention strategies. The finding in Table 2 shows the knowledge of sports injury management among student athletes in university of Nigeria Nsukka. The finding is expected because student athletes has been taught by the coaches during training on how to manage sports related injury while participating in sports or physical activities. This finding agrees with Emery and Meeuwisse, (2015) conducted a study on the effectiveness of a neuromuscular prevention and management to reduce injuries in youth soccer: The finding in Table 3 shows that overall, both male and female athletes have knowledge of sports injury prevention. Male student athletes in University of Nigeria Nsukka has knowledge of sport injury management (79.2%) followed by the female athletes (74.1%). This agrees with Roos et al (2017) carried out a study on Epidemiology of 3825 injuries sustained in six seasons of National Collegiate Athletic Association men's and women's soccer (2009/2010-2014/2015).

Conclusions

Based on the findings and discussions of the study, it was concluded that student athletes at the University of Nigeria, Nsukka possess a very high level of knowledge regarding sports injury prevention. In addition, they demonstrate a similarly high level of knowledge in the

management of sports injuries. Furthermore, the study established that there is no significant difference in the knowledge of sports injury prevention among student athletes at the University of Nigeria, Nsukka when analyzed based on gender.

Recommendations

Based on the findings of the study, the following recommendations were proffered:

1. Coaches should equip student athletes with clear guidelines on the prevention and management of sports-related injuries.
2. Coaches should ensure that student athletes warm up properly before engaging in physical activities and are given adequate rest to allow their bodies to recover before the next training session.
3. Coaches should collaborate with the school medical team to ensure that student athletes who sustain sports-related injuries receive proper and timely medical care.

REFERENCES

- Al Attar, W. S., Soomro, N., Pappas, E., Sinclair, P. J., & Sanders, R. H. (2016). How Effective are F-MARC Injury Prevention Programs for Soccer Players? A Systematic Review and Meta-Analysis. *Sports medicine (Auckland, N.Z.)*, 46(2), 205–217. <https://doi.org/10.1007/s40279-015-0404-x>
- Bahr, R., & Krosshaug, T. (2018). Understanding injury mechanisms: a key component of preventing injuries in sport. *British Journal of Sports Medicine*, 39(6), 324-329.
- Bolling, C., van Mechelen, W., Pasman, H. R., & Verhagen, E. (2018). Context Matters: Revisiting the First Step of the 'Sequence of Prevention' of Sports Injuries. *Sports medicine (Auckland, N.Z.)*, 48(10), 2227–2234. <https://doi.org/10.1007/s40279-018-0953-x>
- Campa, F., & Coratella, G. (2021). Athlete or Non-athlete? This Is the Question in Body Composition. *Frontiers in physiology*, 12, 814572. <https://doi.org/10.3389/fphys.2021.814572>
- Celso Q. A. (2019). Safety awareness, practices and injury prevention of Student – athletes of zambales national high school. DepEd - Schools Division of Zambales, Zambales National High School, Iba, Zambales, Philippines. *International Journal of Technical Research & Science*.4:19-010. DOI Number: <https://doi.org/10.30780/IJTRS.V04.I10.004>
- Centers for Disease Control and Prevention (CDC). (2019). Sports-related injuries. Retrieved from <https://www.cdc.gov/homeandrecreationalafety/sports/index.html>
- Centers for Disease Control and Prevention. (2021). National Center for Injury Prevention and Control. <https://www.cdc.gov/injury/index.html>
- Frush, T. J., & Lindenfeld, T. N. (2019). Peri-epiphyseal and Overuse Injuries in Adolescent Athletes. *Sports health*, 1(3), 201–211. <https://doi.org/10.1177/1941738109334214>
- Kerr, Z., Roos, K., Schmidt, J., & Marshall, S. (2012). Prevention and Management of Physical and Social Environment Risk Factors for Sports-Related Injuries. *American Journal of Lifestyle Medicine*, 7(2), 138-153.
- Kohl, H. W., Cook, H., & Board, N. (2013). Educating the student body: Taking physical activity and physical education to school. <https://pubmed.ncbi.nlm.nih.gov/24851299/>

- LeBrun, D. G., Del Rosario, J., Kelly, J. D., Wren, S. M., Spiegel, D. A., Mkandawire, N., Gosselin, R. A., & Kushner, A. L. (2018). An Estimation of the Burden of Sports Injuries among African Adolescents. *Journal of epidemiology and global health*, 8(3-4), 171–175. <https://doi.org/10.2991/j.jegh.2017.10.010>
- Owoeye O. B. (2010). Pattern and management of sports injuries presented by Lagos state athletes at the 16th National Sports Festival (KADA games 2009) in Nigeria. *Sports medicine, arthroscopy, rehabilitation, therapy & technology: SMARTT*, 2, 3. <https://doi.org/10.1186/1758-2555-2-3>
- Parry-Jones, B. L., & Parry-Jones, W. L. (2015). *The Epidemiology of Sports Injuries*. Springer.
- Popescu, M. C., Păsărin, L. D., Popescu, S. S., Diaconescu, D. L., & Burcea, G. B. (2020). Integration of Sport with other Industries like Entertainment. *Journal of Sport & Kinetic Movement*, 2(36).
- Prieto-González, P., Martínez-Castillo, J. L., Fernández-Galván, L. M., Casado, A., Soporki, S., & Sánchez-Infante, J. (2021). Epidemiology of Sports-Related Injuries and Associated Risk Factors in Adolescent Athletes: An Injury Surveillance. *International journal of environmental research and public health*, 18(9), 4857. <https://doi.org/10.3390/ijerph18094857>
- Roos, K. G., Wasserman, E. B., Dalton, S. L., Gray, A. B., Djoko, A., & Dompier, T. P. (2017). Epidemiology of 3825 injuries sustained in six seasons of National Collegiate Athletic Association men's and women's soccer (2009/2010-2014/2015). *British Journal of Sports Medicine*, 51(13), 1029-1034.
- Segrave, J. O., & Conger, S. A. (2019). *Sports in American History: From Colonization to Globalization* (3rd ed.). Human Kinetics.
- World Health Organization. (2020). *Injuries and Violence: The Facts 2014*. https://www.who.int/violence_injury_prevention/key_facts/en/