IJAMS
INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES
Volume V, Issue 4 April 2025, eISSN: 2799-0664

# Management Mechanism Utilized Among Sport Coaches in Relation to Playing Situation Injuries of Athletes

**DAVE A. CANOY**
Jose Rizal Memorial State University
davecanoy@jrmsu.edu.ph

**IVO MATHEW M. SIATON**
Jose Rizal Memorial State University
ivomathewsiaton@jrmsu.edu.ph

*Abstract* — This research investigated how sports coaches used different management mechanisms to address athletes' playing situation injuries. The focus is on these four key areas: ensuring coaches are prepared (readiness), minimizing the risk of injury (reduction), reacting effectively to injuries when they occur (response), and helping athletes recover properly (recovery). This study employed a quantitative method with a descriptive-correlational approach to determine the injury management mechanism sports coaches employ in response to athletes' injuries. Ultimately, this approach provided a solid framework for defining the research topic and setting clear objectives. Further, statistical tools were used to interpret the data gathered such as the frequency count, weighted mean, chi-square, and kruskal wallis. The data was set at a .05 confidence level. The result reveals that sports coaches performed a high level of competence in reducing or preventing the risk of injuries, wherein coaches placed an important factor in determining the athletes' safety. Moreover, coaches also administer preparing necessary items for safety guidelines and protocol before the occurrence of injury, respond as the first point of contact during the incident, and render assistance that helps athletes recover from injury. The study recommends the following significant approaches to address injuries and promote safety such as: formulating a training program per sports discipline, maintaining a well-managed reduction of injury management, sports coaches were given an orientation about the safety protocol and guidelines on student-athletes training and competition, and required to participate in injury management trainings. Further, sports coaches should understand and exercise the legal liabilities in handling athletes' injuries, there will be a formulated re-entry plan or return to sports for recovered athletes, and injury surveillance for athletes undergoing in rehabilitation phase. In addition, coaches may extend emotional and psychological support to athletes who encounter injuries and there should still be a need to conduct future studies on qualitative research to assess the anxieties met by the coaches on athletes' sports injuries.

***Keywords — injury management, injury mechanism, playing injury situation, 4rs of injury management: readiness, reduction, response, recovery***

## I. Introduction

Injury Mechanism describes the action or circumstance that results in an injury, it includes all behaviors, causes, or situations that hurt or damage the body. Understanding of the injury mechanism was essential since it aids in determining the underlying causes, contributing variables, and patterns of injuries. Coaches can create safety recommendations, rehabilitation strategies, and preventive measures to lessen the risk of further injuries by understanding the mechanism of the injury.

Further, injuries were significant physical health issues affecting student-athletes. These injuries can cause significant setbacks for athletes as these can create profound impacts on physical, emotional, and social well-being. The consequences of a sports injury can be far-reaching, including physical pain, disruption, reduced self-confidence, and detachment from the sport. Moreover, injury is a common occurrence in sports and proper injury management is essential for ensuring a timely and effective recovery, as well as reducing the risk of future injuries. In this sense, the role of the coaches in injury management were crucial, as they are often the first point of contact for athletes with injuries seeking help. However, any injury sustained during sports activities can be a major cause for student-athletes to seek medical attention and can result in quitting sports.

In the study Prieto-González et al. (2021), they investigated the incidence and risk factors of sport-related injuries in adolescent athletes, both amateur and professional. The related participants suffered from an injury, whose injuries occurred in previously injured areas. As soccer had the highest injury rate, the most common injuries experienced were lumbar muscle strains, ankle sprains, and bone fractures. The most common sites were the ankles, knees, and shoulders. It was also found that these injuries occurred during practice which happened during competitions or peri-competitions. The study identified several risk factors for higher injury rates, including a greater number of hours of practice per week, failure to perform warm-ups, used of inadequate sports facilities, lack of physical preparation, inappropriate training load, failure to engage in injury-preventive activities, performing sports technique without the supervision of a sports coach, and inadequate sports equipment.

Despite the incidence of sports injury, there was a lacked of research that specifically focuses on the management mechanism utilized among sports coaches towards the playing situation injuries of athletes. The initial investigation attempt to recognize the different areas that has not yet been explored; the coaches fail to engage in managing injuries of student-athletes, as coaches are always dependent on the medical team support, unidentified coaches injury management mechanism utilization on the student-athlete's injury particularly in Jose Rizal Memorial State University on any sports related activities that contributes a risk factor for higher injury rates, and incognito of coaches contribution during and after the injury occur. Moreover, future research focus on the implementation of coaches' utilization of management mechanism on the playing situation injuries of athletes in different sports areas and athletic settings. Further, it

also tried to determine coaches' injury management along the 4R's—readiness, reduction, response, and recovery.

Furthermore, this study determined the level of management mechanism utilized among sport coach along with the 4Rs such as the readiness, reduction, response, and recovery in relation to playing situation injuries of athletes in Jose Rizal Memorial State University. It would identify the readiness of coaches in reducing the incidence of sports injuries among student-athletes, the coaches' ability to respond, and facilitate the recovery process for athletes who sustain an injury.

**Literature Review**

This study was primarily anchored to Wang's (2023) sports management system theory. Sports management mechanism ensured that the system could achieve steady operation, focusing on the enthusiasm and physical fitness of sports. This study combined theory with practice, comprehended the implementation path of different management systems, and analyzed the specific mode of sports management mechanism and ensures that sports management system can play its due role, meet the diversified and personalized physical exercise needs, and comprehensively improve the overall quality and participation of athletes.

Moreover, this study was supported by Yung et al.'s (2022) complex system theory is an open system theory consisting of many components that can interact among themselves and the environment. New forms of behaviors and patterns often emerge as a result. There is a growing recognition that most sporting environments are complex adaptive systems.

Further, this extends to sports injury and is reflected in the individual responses of athletes to both injury and rehabilitation protocols. Consequently, practitioners involved in return to sport decision making (RTS) were encouraged to view return to sport decisions through the complex systems lens to improve decision-making in rehabilitation. Complex Systems Theory was used to understand sports injury occurrence and behavior in sports performance. Most studies recognize the importance of considering multiple factors in determining readiness for Return-To-Sports or in the context of injury recognition and practitioners may connect complex systems theory with their operations in the sports setting (Yung et al., 2022).

Moreover, complex system theory may also be hierarchical and of multiple levels, namely individual, organizational, and environmental. The individual level represents factors related to the individual athlete, from tissue healing to personal traits. The organizational level represents external factors related to the sporting club, organization, and support team, for example the coaching and medical team support, clinical assessment, tissue health, and imaging result, rehabilitation protocol, and management style. The environmental level covers factors beyond the organizational level, such as the weather, playing schedule and competition (Yung et al., 2022).

The term "playing situation injuries" describes injuries that take place during a variety of sporting or recreational activities. These injuries can occur in a variety of places, including

organized sports, gyms, playgrounds, and other public spaces where physical activity was allowed. Moreover, accidents, collisions, falls, overexertion, incorrect technique, and a lack of suitable protective gear can all lead to playing situation injuries. They may have an impact on the head, neck, limbs, joints, muscles or bones, among other sections of the body. Common sports-related injuries can be divided into two categories: acute and chronic.

In addition, for some injury types, the key to prevention may lie with the events leading to the injury situation for example the playing situation, player behavior, or opponent behavior. The final link in the chain was the stimulating event, which was usually referred to as the injury mechanism—what one sees when watching an injury situation. Each injury type and each sport does have its typical patterns, and for team medical and coaching staff it is important to understand the typical injuries and mechanisms in their sport (Schlingermann et al. 2018).

Moreover, the 4R's of injury management was helpful in determining the management mechanism employ among sports coaches towards the playing situation injuries of athletes. This approach is integrated and involves four distinct areas of activity, such as readiness, reduction, response, and recovery. It serves as a tool for handling and responding to injuries that occur during sports or physical activities.

Readiness

Readiness involves being prepared for the occurrence of injuries. This preparation includes having plans and protocols in place to handle and manage injuries. It involves having a basic knowledge of sports medicine, having access to basic medical supplies, having a plan in place for how to transport injured athletes to medical facilities, and having clear procedures for reporting and managing injuries. Further, it is important for schools to verify sports staff (coaches, athletic trainers, and nurses) who are adequately trained and educated on injury prevention and treatment. Even those who are not hands-on in the coaching or athletic training process may find it useful to be up to date on their injury prevention and treatment methods to accurately report and analyze the games' events ("Coach's Guide to First Aid & Sports Injury Prevention", 2022).

According to coaches' risk management handbook (2020), coaches should renew training in accordance with certification guidelines to ensure they remain current on the changes in procedures and nature of treatment. In addition, all coaches were expected to have a thoroughly planned and well-organized emergency medical plan. Moreover, an emergency plan is a necessary tool in preparing athletes for the upcoming season. All head coaches are required to submit a general emergency plan in writing to their staff. The head coach should then discuss and review these procedures with assistant coaches, participants, volunteers, and parents. Coaches, and those who have designated roles in the plan, need to be specifically trained on how to activate the Emergency Medical Plan.

According to Armstrong et al. (2021), coaches generally work with healthy athletes to prepare them for the physical demands of their sport. They incorporate specific exercises into their training programs to minimize the risk of injury.

Further, coaches recognized the importance of empowering players to self-manage training loads to promote injury prevention but acknowledged the need to protect players. Many barriers to injury prevention were not controllable by coaches including fixture congestion and poor structuring of the sport's domestic calendar. While coaches can play a key role in the implementation of injury prevention strategies (Rees et al.2021).

Moreover, according to Ngatia (2023), sport coach is designated the following responsibilities: gathers appropriate equipment, monitors the storage room, inspects all accidents and providing first aid, provides proper operations for injured athletes until the arrival of a physician, using protective equipment; and maintains the equipment.

Reduction

Reducing sports injuries was an important goal for coaches, athletes, and sports organizations. To achieve this goal, a multifaceted approach is necessary. Sports injury reduction involves taking proactive steps to decrease the probability and seriousness of injuries that may happen during sports activities. This can encompass a range of strategies such as conducting pre-participation screenings, implementing injury prevention programs, teaching athletes' proper technique, allowing adequate time for rest and recovery, and ensuring the use of appropriate equipment. Successful sports injury mitigation can reduce the adverse effects of injuries on athletes, enhance their general health and welfare, and foster a secure and wholesome sports environment. When coaches, athletes, and sports organizations prioritize injury mitigation strategies, they can collaborate to establish a culture that values safety and injury prevention in sports.

Further, reducing of sports injuries was a priority for sport stakeholders across the field of training and competition. Achieving this objective requires a multidisciplinary approach with strength and conditioning coaches playing an important role in the process. When considering sports injury prevention strategies, the role of the strength and conditioning coach can extend beyond observing exercise technique and prescribing training to develop a robust and resilient athlete. Strength and conditioning coaching is a specific discipline within sports and exercise science with the strength and conditioning coach playing an important role in the overall sports injury prevention process (Talpey & Siesmaa, 2017).

Sports injury prevention recognizes that a change is needed. It was becoming apparent that in a range of sports settings, injury outcomes are not improving, despite considerable effort from both researchers and practitioners. A realization is emerging that injury and its prevention are complex, and that one needs to look to different 'ways of knowing' to better understand the implications thereof. It is becoming increasingly apparent that one needs to explore beyond generic

'risk factors' and 'injury mechanisms' and understand the complex interactions of a range of contextual factors that influence injury (Tee et al., 2019).

Players seek advice from coaches in several areas including warming up and cooling down, safe techniques, physical conditioning, use of protective equipment and injury management (Brown et al., 2018).

Moreover, prevention of sports injuries was a priority for sport stakeholders across the spectrum of training and competition. Achieving this objective requires a multidisciplinary approach with strength and conditioning coaches playing an important role in the process. When considering sports injury prevention strategies, the role of the strength and conditioning coach can extend beyond observing exercise technique and prescribing training to develop a robust and resilient athlete (Talpey & Siesmaa, 2017).

In addition, coach adoption of these strategies has been identified as a substantial barrier to successful injury prevention. In particular, coach attitude and knowledge of injury prevention strategies, as well as availability of adequate resources are significant influences on adoption (Talpey and Siesmaa, 2017).

Further, according to Kempe et al. (2023), coaches were considered important in injury prevention such as implement injury prevention programs and provides education about injury prevention principles.

Response

Sports injury management was the management of a specific injury to allow an individual to return or continue their chosen sport without damaging or compromising their body. Managing a sports injury correctly was important and can help to minimize damage to a muscle, tendon, ligament, and joint, hence, increasing the chance of a full recovery (PodiatryMed & Physiotherapy, 2018).

Proper management of a specific sports injury should be customized to educate the athlete about their injury, avoid further damage, ensure proper healing, and allow for a safe return to their sport. Managing a sports injury correctly can minimize the risk of long-term damage to a muscle, tendon, ligament, bone or joint. (Pontchartrain Orthopedics & Sports Medicine, 2022).

Injury Management depends on the effective collaboration of technical/tactical coaches, strength and conditioning coaches, sports medicine practitioners and sport scientists within a multidisciplinary team (MDT) (Tee & Rogen, 2022). As the primary individuals tasked with developing athletes and helping them achieve their goals, coaches should acquire a working knowledge of all areas affiliated with performance enhancement. Specifically, the disciplines of sports administration, sports medicine, strength and conditioning, and sports psychology can assist coaches while physically and mentally training their athletes (U.S. Sports Academy, 2011).

Recovery

Recovery from sports injuries was a crucial aspect of injury management in sports. It involves the process of restoring an athlete's physical and psychological health after an injury and facilitating their safe and healthy return to sports activities. The recovery process may include various components, such as rest, rehabilitation exercises, physical therapy, and other forms of treatment depending on the type and severity of the injury. Effective recovery from sports injuries requires a collaborative effort between medical professionals, coaches, and athletes to ensure that the recovery process is safe and effective. Additionally, it is essential to consider the psychological impact of the injury on the athlete, including the potential for anxiety, depression, and other mental health concerns. Athletes must be supported throughout the recovery process to ensure that they can return to their sports activities with confidence and minimize the risk of re-injury. By prioritizing injury prevention, response, and recovery strategies, sports organizations can help to promote the overall health and well-being of athletes and create a safe and healthy sports environment. This involves supporting the athlete's physical and mental recovery from the injury. This can include working with medical professionals to develop a rehabilitation plan, providing support and encouragement during the recovery process, and ensuring the athlete is cleared for return to play before allowing them to participate in activities.

Furthermore, this phase of the sports injury management has some specificity. It aims to orient/guide the injured tissue healing process, restore the function, and help the patient/athlete return to sporting activities while at the same time minimizing the risk of reinjury (Edouard & Ford, 2020).

Sports injury rehabilitation requires holistic approach of highly structured and sports-specific program, where both the athlete and the pattern of injuries are important to plan of rehabilitation program (Emran et al., 2020).

Rehabilitation of an athletic injury is the process of returning the athlete to sport to pre-injury level of athletic performance. The primary aim of Athletic Rehabilitation is to enable the athlete to return to sport with full function in the shortest possible time (Emran et al., 2020).

Physical rehabilitation training was a comprehensive discipline that helps to correct and restore motor dysfunction using physical training methods, also known as rehabilitation training. It is different from traditional sports training. It has a strong correlation and help and is a new concept of sports training (Wu & Luo, 2022).

Coaches play a key role in facilitating injury prevention initiatives in youth sport and as the field of youth sport injury prevention develops, appropriate coach education for effective delivery of suitable sport injury prevention strategies is key. The impact of coaches on the magnitude of player adherence to sport injury prevention initiatives remains unclear, however, it is commonly thought by sport organizations, team staff, team players, and parents that adherence

to effective initiatives is greater if coaches are actively implementing relevant strategies into their training sessions (Pare & Callaghan, 2022).

Athletic injuries can be extremely distressing, even traumatizing, for athletes; however, reactions to injury can vary. Long recovery times may have a greater impact on the athlete's mood, emotions, sense of identity and overall psychological wellbeing. Without successful emotional rehabilitation, total recovery is incomplete and return to preinjury level and overall performance is hindered (Lattimore, 2019).

## II. Methodology

This study used the quantitative method with descriptive-correlational design to find out the injury management mechanism utilized among sports coaches in relation to the playing situation injuries of the athletes. It helped the researcher obtain the variables, explore relationships, develop hypotheses and it offered a strong foundation for articulating the study topic and specifying precise research goals.

Management mechanisms were the strategies, procedures, and guidelines used to analyze, diagnose, treat, and recover from sports-related injuries. These mechanisms were intended to protect athletes, speed up their recovery, and lessen the negative effects of injuries on their performance and long-term health. Additionally, Management mechanism in the context of managing the injury emphasis the systematic procedures of sports coaches in handling, providing first aid and provides athletes welfare to optimize athletes in sports performance.

Further, a playing situation injury could encompass various types of injuries that occur during sports, such as sprains, strains, fractures, dislocations, concussions, cuts, or bruises where it was being classified into acute and chronic or overuse injury. These injuries could result from accidents, collisions, falls, overexertion, or improper technique during the game or activity.

The study included current sports coaches who participated for Mindanao Association of State Tertiary Schools and State Colleges and Universities Athletics Association, in view of the fact that they had experience rigid trainings prior to the regional and national competitions and mostly encountered athletic injuries. The sample included coaches from different sports teams and different levels of experience. A purposive sampling technique was utilized in the current study. A purposive sample was a non-probability sample that was selected based on characteristics of a population and the objective of the study. In relation to the current research, the respondents utilized were coaches who were active sports trainer of different sports events.

This study adopted questionnaire from various researchers to address or answer all research questions. There are three (3) parts of the instrument used in this study.

The first part of the questionnaire was about the profile of the respondents in terms of their Demographic Data, Professional Practice and Certification Information and Event Coverage Data.

The second part of the questionnaire was the level of Injury Management Mechanism utilized among sport coaches along lines of the 4Rs—readiness of the coaches' safety measure towards managing injury, injury reduction or prevention strategies and guidelines, injury response or mitigation and injury rehabilitation.

The third part of the questionnaire was the coaches' management injuries of athletes as limited to acute and chronic.

The validity and reliability were established first before it was administered to the respondents. For the validity of the instruments, the researcher presented the questionnaire to the panel during the proposal defense. It was presented to the adviser for correction, enrichment, and finalization. The questionnaire was consequently submitted to the group of experts in the field of physical education and allied health professionals. For its reliability, the questionnaire was subjected for pilot testing conducted to the coaches who are not part of the target respondents. Suggestions and comments were integrated to enrich the instruments.

With the recommendation of the panel members to conduct the study, the researcher started by seeking clearance from the University Research Office. The researcher then asked an endorsement letter to gather data from the office of the graduate school. A letter, asking permission, was submitted to the research office of the Jose Rizal Memorial State University, along with the endorsement letter by the research adviser. The response of the research office of Jose Rizal Memorial State University, System Sports Director was then used to coordinate with the identified sports coaches of every identified sports event with the approval of their respective campus director through the associate sports director to identify the coaches involved. Further, the knowledge of the associate sports director about the approved letter from the system sports director office the coordination to the sports head of the school and to the coaches was then established.

The questionnaire was distributed after the approval of the campus director through to the associate sports director of each campus, with the identified respondents stratified random sampling using random number. There were two ways of letting the respondents answer the questionnaire, one was through online using Google form, and the other one was through the use of hard copies/printed questionnaire. The online through the use of Google form was administered to those respondents who have strong internet connectivity; those who do not have internet connection was approached by the researcher in their respective address, following strict health protocol and with the approval of the respondents.

The informed letter was attached to the questionnaire for the identified respondents. After answering the questionnaires, the responses of the respondents were tallied and computed using different statistical tools by the statistician and the result was analyzed by the researcher.

Prior to collecting the data, research ethics approval was obtained. The Graduate School Dean, the university system sports director, the associate sports directors, sports coordinator, and coaches all provided their approval to gather data from the coaches who are the subjects of the study. The responses, which the coaches provided, were treated with utmost confidentiality. After the presentation and publishing of this study, the responses would be retained in a secure location for shredding.

## III. Results and Discussion

This study was conducted to find out the level of management mechanism utilized among sport coaches. It would identify the readiness of coaches in reducing the incidence of sports injuries among student-athletes, the coaches' ability to respond, and facilitate the recovery process for athletes who sustain an injury. Moreover, regardless of incidence of sports injury, there was a lack of research that specifically focuses on the management mechanism utilized among sport coaches.

| Readiness | Average Weighted Value | Description |
|---|---|---|
| Prepares an emergency action plan, emergency care procedure, injury prevention program and first aid kit. | 3.66 | Well Managed |
| Designs individualized training programs based on each athlete's age, skill level, physical condition, and specific needs. | 3.76 | Well Managed |
| Educates athletes the importance of rest, hydration, nutrition, and sleep for recovery. | 4.18 | Well Managed |
| Prepares players medical consent forms, emergency contacts and injury procedure & policies at hand. | 4.18 | Well Managed |
| Prepares Possible solution and mitigating remedy to whatever potential hazards. | 4.0 | Well Managed |
| Orient students-athletes as to the safety rules, guidelines for training activity. | 4.14 | Well Managed |
| Coordinates among various stakeholders to ensure a unified and efficient response. | 3.76 | Well Managed |
| Prepares athletes on how to appropriately assess athletic injuries among teammates. | 3.86 | Well Managed |
| Provide adequate training injury prevention strategies among athletes. | 2.89 | Managed |
| Medical equipment and facilities are available for immediate intervention during practice or sporting event are sufficient. | 2.73 | Managed |
| Mean | 3.72 | Well Managed |

With profound analysis of the table, sports coach respondent claims that they prepare players medical consent forms, emergency contacts, and injury procedures and policies at hand, educate athletes on the importance of rest, hydration, nutrition, and sleep for recovery, orient students-athletes as to the safety rules, guidelines for training activity and prepares possible solution and mitigate remedy to whatever potential hazards. Moreover, sports coaches also manage

to provide adequate training injury prevention strategies among athletes, and medical equipment and facilities available for immediate intervention during practice or sporting events are sufficient.

The result implies that sports coaches completely handle and prepare the necessary items to be employed during injury management to prevent injuries. Moreover, with careful consideration of student-athletes health status, safety rules, guidelines, and education were the top priority. Sports coaches were highly proactive in ensuring the safety and welfare of the student-athletes under their supervision. Further, due to the coaches' thorough preparation such as injury prevention strategies, emergency protocols, and readily available medical resources, the risk of injuries during training and competitions are likely minimized. This further implies that coaches demonstrate a strong commitment. Commitment to athletes' safety would create a culture of trust, respect, and well-being that would allow athletes to perform at their best while minimizing the risk of injuries.

According to Armstrong et al. (2021), coaches generally work with healthy athletes to prepare them for the physical demands of their sport. They incorporate specific exercises into their training programs to minimize the risk of injury.

Further, coaches recognized the importance of empowering players to self-manage training loads to promote injury prevention but acknowledged the need to protect players. Many barriers to injury prevention were not controllable by coaches including fixture congestion and poor structuring of the sport's domestic calendar. While coaches can play a key role in the implementation of injury prevention strategies (Rees et al., 2021).

Moreover, according to Ngatia (2023), a sports coach has designated the following responsibilities: gathering appropriate equipment, monitoring the storage room, inspecting all accidents and providing first aid, providing proper operations for injured athletes until the arrival of a physician, using protective equipment; and maintains the equipment.

| **Reduction** | **Average Weighted Value** | **Description** |
|---|---|---|
| Ensures the students wear appropriate clothing & shoes. | 4.39 | Very Well Managed |
| Ensures the students wear protective tools according to sports discipline. | 4.28 | Very Well Managed |
| Ensures the existence specialized medical team during training and matches. | 3.84 | Well Managed |
| Supervises all the time of training. | 4.02 | Well Managed |
| Follows safety rules guidelines, and laws of the game. | 4.30 | Very Well Managed |
| Follows rules on equipment use. | 4.28 | Very Well Managed |
| Encourages athletes to drink fluids every 15-20 minute during training. | 4.14 | Well Managed |
| Provides immediate first aid for injuries. | 4.02 | Well Managed |
| Ensures the athletes making warm-up part routine | 4.32 | Very Well Managed |
| Checks the safety of all equipment that will be use in the game. | 4.16 | Well Managed |
| **Mean** | **4.28** | **Very Well Managed** |

With deeper analysis of the table, this exhibits the effective implementation of strategies and practices aimed at reducing the occurrence of injuries. Coaches' prevention programs are structured. They conduct thorough risk assessments to identify potential hazards. Moreover, coaches emphasize the important technique and safe coaching practices. Despite being novice, as shown in table 6, these coaches have background and existing knowledge in the field of first aid, emergency preparedness and safety management as reflected in their undergraduate degree programs as well as coaches previous experience being an athlete. In addition, mentorship opportunities provided as well as networking within the coaching community allows novice coaches to exchange ideas, seek advice, and learn from experienced coaches.

This implies that coaches who prioritize specific safety measures significantly contribute to reducing injuries among athletes during training and competition. This highlights the crucial role coaches play in creating a safe sporting environment as part of injury prevention program. The level of success to ensures safety and prevent the injury will determine on the preparation and implementation of safety guidelines and protocols prior or during the training and competition. Sport coaches performed in an outstanding manner to ensures and maintain high and quality safety standards and strategies to prevent injuries.

Moreover, prevention of sports injuries was a priority for sport stakeholders across the spectrum of training and competition. Achieving this objective requires a multidisciplinary approach with strength and conditioning coaches playing an important role in the process. When considering sports injury prevention strategies, the role of the strength and conditioning coach can extend beyond observing exercise technique and prescribing training to develop a robust and resilient athlete (Talpey & Siesmaa, 2017).

In addition, coach adoption of these strategies has been identified as a substantial barrier to successful injury prevention. In particular, coach's attitude and knowledge of injury prevention strategies, as well as availability of adequate resources are significant influences on adoption (Talpey and Siesmaa, 2017).

Further, according to Kempe et al. (2023) which states that coaches were considered important in injury prevention such as implement injury prevention programs and provides education about injury prevention principles.

Coaches receive little attention in the literature as many studies choose to focus on experienced and elite level coaches. Those involved in the development of coaches have a responsibility to understand how novice coaches were navigating their initial coaching experiences within higher education programs (Benish et al. 2021).

| Response | Average Weighted Value | Description |
|---|---|---|
| Elevate the area above the heart to diminish swelling. | 3.38 | Well Managed |
| Do medical dressing. | 3.32 | Well Managed |
| Compress the area. Use and elastic wrap (ace bandage) to control swelling and wrap from distal to proximal (example: start at toes or fingers and wrap towards the heart). | 3.52 | Well Managed |
| Cover with a clean cloth if it is an open wound. | 3.86 | Well Managed |
| Check the pulse. | 3.8 | Well Managed |
| Apply first aid (Rest, ice, elevation, compression). | 3.88 | Well Managed |
| Apply ABC method (Airway, Breathing and Circulation). | 3.70 | Well Managed |
| Cushion if there is bleeding in the head. | 3.72 | Well Managed |
| Give cardiac massage if no pulse. | 3.40 | Well Managed |
| Others (CPR, taping, able to diagnose, test joint mobility). | 3.52 | Well Managed |
| Mean | 3.63 | Well Managed |

This means that sport coach spontaneously reacts significantly to an injury occurred during the actual training and competitions. Sport coach respond as the first point of contact during the injury where they performed with an above average level of competence to lessen and ease the pain of an injured individual. Moreover, coaches facilitate and execute basic first aid as to the level of appropriateness adopted and utilized to a specific type of injury. In addition, sports coaches play a crucial role in managing athlete injuries. Their training allows them to provide immediate care, assess the situation, and potentially prevent further harm until medical professionals are available. This highlights the importance of proper first aid and injury management training for sports coaches.

This further means that the process and the action taken to address the identified sport injury have been effective, efficient, and appropriate. In particular, timely intervention was prompt which addresses injuries severity and facilitates recovery injured athletes receive comprehensive support. Overall, a well-managed response reflects coordinated efforts between concern coach and paramedics.

The previous discussion was supported by the study of Strand et al. (2019) which states that to provide optimal care for pediatric and adolescent athletes who suffer from an injury or emergency condition, coaches are often the first responders when immediate medical care is not provided by an allied healthcare professional. Thus, injured athletes are dependent on coaches who may or may not be professionally trained to recognize the signs and symptoms of emergent conditions or to provide accurate emergency care when necessary.

| Recovery | Average Weighted Value | Description |
|---|---|---|
| Follow physician prescriptions | 4.22 | Very Well Managed |
| Administer modality treatments (whirlpool, ice, heat) | 3.88 | Well Managed |
| Provide injured athletes with resources and referrals to individuals who can provide additional support. | 4.06 | Well Managed |
| Develop exercise programs | 3.86 | Well Managed |
| Helps athletes restore balance, reflex control and strength endurance. | 3.94 | Well Managed |
| Understand and follow specific return-to-play guidelines | 3.98 | Well Managed |
| Provides active rest activity to the injured person. | 4.21 | Very Well Managed |
| Provides compression clothing. | 3.86 | Well Managed |
| Provide critical injury stress debriefing. | 3.84 | Well Managed |
| Provide reasonable care in sending an injured athlete for medical treatment. | 3.96 | Well Managed |
| Mean | 3.98 | Well Managed |

With profound analysis, sport coach contributed a significant role for rapid recovery of the athletes, wherein coach do the following items: follow physician prescriptions, provide active rest activity to the injured person, provide injured athletes with resources and referrals to individuals who can provide additional support, understand and follow specific return-to-play guidelines, and provide reasonable care in sending an injured athlete for medical treatment. Moreover, sport coaches also tend to help athletes restore balance, reflex control and strength endurance and administer modality treatments (whirlpool, ice, heat).

This means that, sport coach fosters a significant role in the recovery and rehabilitation process of the athletes. As coaches perform well-managed recovery in an effective and efficient process this facilitates athletes' recuperation and return to their pre-injury state. The coaches' assistance towards sports injury rehabilitation places an outmost act of competence in handling sports injuries, enhances the athlete's quality of life and reduces the likelihood of long-term complications or occurrences of injury.

Coaches play a pivotal role during an athletes' rehabilitation, assisting them to deal with the psychological challenges linked with injury recovery and return to sport. However, coaches' views of their roles during rehabilitation, and the extent to which their influences may facilitate psychological coping is unclear. Although athletes value input from their coaches during their injury rehabilitation, their satisfaction with the support provided is varied (King et al., 2023).

Furthermore, Maurice (2019) states that coaches emphasized their role during the rehabilitation process was to continue communicating with their athletes and know their players well enough to push them to return to play without furthering their athletes' injuries.

***Summary Table on Injury Management Mechanism***

| Indicators | Mean | Description |
|---|---|---|
| Readiness | 3.72 | Well Managed |
| Reduction | 4.28 | Very Well Managed |
| Response | 3.63 | Well Managed |
| Recovery | 3.98 | Well Managed |
| **Gen. Mean** | **3.89** | **Well Managed** |

Further, the data pointed out that sport coach performs a high level of competence in reducing or preventing the risk of injury, wherein coaches placed and important factor in determining the athletes' safety. Moreover, sport coaches also administered injury in preparing necessary items the safety guidelines and protocol prior the occurrence of injury, respond as the first point of contact during the injury, and coaches involve and render assistance that helps athletes to recovery from injury.

This means that having qualified and knowledgeable coaches was crucial for creating a safe and healthy environment for athletes. Sport coach performed their roles and responsibilities towards athletes' injury as to their limits and showcase an above average level of competence that shows proactive measures, contribute and facilitate safety guidelines and protocol in reducing the impact of injuries, highly responsive on emergency situations and willingly help and support for athletes to return to sport.

There was no denying that coaches were crucial to an athlete's growth. The tight link that develops between coaches and athletes as a result of their shared experiences places a tremendous deal of responsibility on the shoulders of the coach. As a result, the coach must sustain this relationship based on trust and respect. It gradually imposes more duties on coaches to avoid or reduce athlete injuries. In other words, a coach will always be held responsible because of his position of authority and trust. If certain conditions are not satisfied, the coach might face financial or even legal consequences (Ngatia, 2023).

Moreover, according to McCleery et al. (2023), coaches play an important role ensuring the youth sports experience was a positive one, physically, psychologically, and socially. The nature of coach's interactions with athletes can markedly influence the effects of sport participation on children and youth.

Novice coaches receive little attention in the literature as many studies choose to focus on experienced and elite level coaches. Those involved in the development of coaches have a responsibility to understand how novice coaches are navigating their initial coaching experiences within higher education programs. In addition, novice coaches' informal and formal learning contributed to the conceptualization of their coaching philosophies and subsequent coaching behavior, revealing examples of how novice coaches support and undermine various aspects of

their coaching philosophies through engagement in empowering and disempowering behaviors (Benish et al. 2021).

Coach's informal learning process, previous athletic experience was a foundational element of an athlete's future coaching career, determining the perspectives, beliefs, and behaviors the coach will use in their interactions with athletes (Benish et al., 2021).

Coaches Management Injuries of Athletes on Playing Situation Injuries along Acute.

| Area | Acute injuries | | AWV | D |
|---|---|---|---|---|
| Joint | Subluxation (partial displacement of a joint) | Get medical help immediately. Splint the joints above and below the injured area in a comfortable position. | 3.72 | Well Managed |
| Articular Cartilage (Connective Tissues) | Minor osteochondral injury | Compress the area. Use and elastic wrap (ace bandage) to control swelling leaving the fingers/toes exposed. | 3.72 | Well Managed |
| | Osteochondral or chondral fractures | Have the athlete transported immediately for further evaluation by a physician. | 3.92 | Well Managed |
| Ligament | Sprain or tear (grades I-III) | Protect the injured area from further damage. This can be a splint or brace or to use crutches if it is a lower extremity injury. | 3.86 | Well Managed |
| Bursa | Traumatic bursitis | Apply ice or cold packs as soon as you notice pain in your muscles or near a joint. | 3.8 | Well Managed |
| Bone | Periosteal contusion Fracture | Apply an elastic wrap to support the splint and apply pressure to the area for compression and stability. | 3.8 | Well Managed |
| Muscle | Contusion | Icing the affected area for 20 minutes, and applying a compression wrap to help minimize swelling. | 3.78 | Well Managed |
| | Cram Strain or tear (grades I-III) | COMPRESS the area. Use elastic wrap (ace bandage) to control swelling leaving the fingers/toes exposed. The wrap should be applied distal to proximal (example: start at toes or fingers and wrap towards the heart). | 3.88 | Well Managed |
| Tendon | Tear (complete or partial) | REST the area until evaluated by a physician or athletic trainer. | 3.88 | Well Managed |
| Skin | Puncture wound. Abrasion Laceration | Clean all open wounds like cuts, scrapes, or lacerations with an antiseptic cleaning agent and a gauze pad (never cotton balls). | 3.82 | Well Managed |
| | | Mean | 3.82 | Well Managed |

With extensive analysis of the table, sport coaches offer very satisfying outcomes in handling acute injuries such as osteochondral or chondral fractures wherein sport coaches have the athlete transported immediately for further evaluation by a physician. In case of cramp strain or tear (grades I-III) for muscles, and tear (complete or partial) for tendons, sport coaches compress the area that use elastic wrap (ace bandage) to control swelling leaving the fingers/toes exposed

and rest the area until evaluated by a physician or athletic trainer. Moreover, sprains or tear (grades I-III) for ligaments is also being given custody by the coaches to protect the injured area from further damages, this can be a splint or brace or to use crutches if it is a lower extremity injury. Further, the joint and articular cartilage (connective tissues) injury was also being identified for medical care by the sport coach; as well as muscle contusion which sport coach put ice on the affected area for 20 minutes, and apply a compression wrap to help minimize swelling.

This means that, sport coaches can effectively handle a wide range of possible acute sports injuries through various methods and can performed an above average level of competence in giving immediate care to an injured athlete. However, coaches must submit athletes to physician for further evaluation and appropriate prescription.

These situations would vary in nature, and the athlete's risk of further damage following an injury could potentially hinge on the care provided by the coach within the first few minutes of the injury. Further, due to a lack of education and preparation, current school-based coaches typically feel uncomfortable implementing injury management practices. Yet, physical educators and coaches have a responsibility to be trained in basic immediate care for acute athletic injuries (Hunt et al., 2016).

Further, acute injuries such as contusions and sprains are the most common types that would occur in the contexts of physical education and scholastic sports. Though these can vary in cause and severity, a direct force that exceeds what a structure in the body can handle generally causes acute injuries, while the amount of force determines the severity. Examples may include strains, sprains, bruises, and fractures. Physical education (PE) teachers and coaches must be able to do more than just apply basic first aid techniques to manage these injuries. They must also be aware of the measures under their control that can go a long way toward preventing them from happening in the first place (Hunt et al., 2016).

Playing Situations Injuries in Terms of Chronic Injuries

| **Area** | **Chronic Injuries** | | **AWV** | **D** |
|---|---|---|---|---|
| Joint | Synovitis | Rest and immobilize the joints by using elastic wrap (ace bandage) to control swelling) and provide physical therapy. | 3.7 | Well Managed |
| Articular Cartilage | Chondropathy (e.g. chondromalacia, softening, and fibrillation) | Apply ice for 10-15 minutes a few times a day and support physical therapy treatment. | 3.68 | Well Managed |
| Ligament | Inflammation | Elevate the area above the heart to diminish swelling and apply ice or cold packs as soon as you notice pain in your muscles or near a joint. | 3.72 | Well Managed |
| Bursa | Bursitis | Rest and immobilization, elevation of the affected joint. Restricting movement of the affected joint permits it to heal more rapidly | 3.52 | Well Managed |

| | | | | |
|---|---|---|---|---|
| Bone | Fractures and Dislocation | Apply an elastic wrap to support the splint and apply pressure to the area for compression and stability. Use ice to control pain and swelling. | 3.7 | Well Managed |
| Muscle | Delayed onset muscle soreness | Ice pack application, massage, tender point acupressure, and oral pain relief. | 3.76 | Well Managed |
| Tendon | Tendinopathy (includes paratenonitis, tendinosis and tendonitis) | Apply ice for 10-15 minutes, rest and immobilization, use elastic wrap (ace bandage) to control swelling, and elevate the area above the heart to diminish swelling. | 3.76 | Well Managed |
| Skin | Callus | Soak callus in warm water for about five to 10 minutes or until the skin softens and apply moisturizing lotion or cream to the area daily | 3.6 | Well Managed |
| | Blister | Wash the area gently with a mild soap or apply an antiseptic wash. | 3.7 | Well Managed |
| Nerve | Altered neuromechanical sensitivity Entrapment | Immobilize the affected limb or area to prevent exacerbating the entrapment or nerve compression. Use splints or cushions to support the limb in a comfortable position. | 3.66 | Well Managed |
| | | **Mean** | **3.68** | **Well Managed** |

With deeper review of the table, the delayed onset muscle soreness and tendinopathy (includes paratenonitis, tendinosis and tendonitis) were the most chronic injuries that sport coaches experienced and achieve superior outcomes in managing this kind of chronic injuries. The inflammation of ligaments and chondropathy (e.g. chondromalacia, softening, and fibrillation) of the articular cartilage was also being identified which needs extra medical attention, wherein coaches demonstrate advanced skills in effectively handling.

As a result, chronic injuries were much more enacted by the coaches with competence in providing first aid, immediate response and contributing to the overall safety performance of the student-athletes. Coaches have strong skills and knowledge in dealing with this injury that promotes sustainability in maintaining an acceptable outcome in injury management situations, however, coaches were not just reacting to an existing injury, but taking steps to prevent it.

Moreover, chronic injury was the result of prolonged, repetitive motion that was particularly common in endurance sports such as swimming, running, and cycling. As such, chronic injuries are often referred to as overuse injuries – injuries resulting from overusing one body area while playing a sport or exercising over a long period (Tan, 2017).

Further, it also suggests that coaches need to be prepared to accommodate all aspects of performance, which includes, considerably, the possibility of injuries. Fundamentally, the role of the coach was to adhere to the boundaries and guidelines provided and work to become an extension of the medical staff in the training process. This includes having a thorough understanding of the mechanism of injury (MOI), what different types of treatment and modalities

provide, and how coaches can modify their approach to best accommodate athletes returning from injury (Foley, 2023).

Coaches Management Injuries of Athletes on Playing Situations Injuries

| Category | Mean | Description |
|---|---|---|
| Acute Injuries | 3.82 | Well Managed |
| Chronic Injuries | 3.68 | Well Managed |
| **Gen. Mean** | **3.75** | **Well Managed** |

The result implies that sport coaches were skilled in handling playing situation injuries. The table suggests that sports coaches appear to be doing a good job. Coaches possess expertise in providing immediate care and adequate response to the athletes who have been injured. Proficient in handling emergency situations with ease and mastery and making quick and appropriate decisions to help those athletes who are injured.

Furthermore, it was the coaches' responsibility to provide optimal care for pediatric and adolescent athletes who suffer from an injury or emergency condition, coaches were often the first responders when immediate medical care is not provided by an allied healthcare professional (Strand et al., 2019).

This was because the coach's role to provide holistic experience thus, as argued by McCleery et al. (2023), coaches play an important role ensuring the youth sports experience was a positive one, physically, psychologically, and socially. The nature of coach's interactions with athletes can markedly influence the effects of sport participation on children and youth.

Significant Difference in the Injury Management Mechanism of Athletes when Analyzed as Profile.

| Indicators | $X^2$ | Tabled Value | $\alpha$ | D |
|---|---|---|---|---|
| Gender | 1.20 | 3.84 | .05 | ns |
| Age | 1.72 | | | ns |

The result shows that there was no significant difference between the injury management mechanism as to the gender of sport coach which means that coaches of different genders emphasize same levels of competence on injury management mechanisms. Furthermore, it suggests that coaches of all ages have access to the same resources to stay updated on best practices in injury management. Coaches have this systematic approach to minimizing the risk of injuries among its athletes. Coaches of both gender and of any age implement coaching strategies, training practices were in place, and necessities design to prevent injuries before it occurs.

According to Johnson (2023), both male and female coaches play crucial roles in sports injury prevention. Male coaches are often noted for their structured approach to physical

conditioning and technical training, which helps in building athlete resilience and reducing injury risks through rigorous, scientifically backed programs. Female coaches, on the other hand, excel in creating supportive environments that encourage open communication and early reporting of injuries. Their emphasis on holistic health, including nutrition and mental well-being, ensures a comprehensive approach to preventing sports injuries. Together, the strengths of both male and female coaches contribute to a balanced and effective injury prevention strategy.

Significant Difference in the Injury Management Mechanism of Athletes when Analyzed as Profile.

| **Indicators** | **H-value** | $\alpha$ | **P-value** | **D** |
|---|---|---|---|---|
| Highest Educ. | 1.05 | | .001 | * |
| Sporting Event | 1.10 | | .02 | * |
| Years of Service | .98 | .05 | .008 | * |
| Training & Seminars | .78 | | .000 | * |

The result implies that there is a significant difference between the injury management mechanism as to the profile of the sport coach. Coaches who acquired higher academic achievement and experience rigid seminars and training related to injury management are more likely to performed effectively and efficiently in handling injury situation as compared to those who do not have knowledge and experiences. Further, it also reflects the significance difference among sport coaches' number of years in coaching service as to the levels of their injury management mechanism, as it matters the length of coaches' exposure to different complex injury situations, where coaches who had experience countless years as a coach can contribute major inputs on dealing with injuries of athletes which reflects their experience and as much more from those starting coaches. Moreover, there was a significant difference of sport coaches' injury management mechanism as to their respective sporting events, as it reflects that the level of coaches' involvement in managing injuries will depend on the nature of the sports.

In her study on coaching practices, Miller (2020) found that veteran coaches are particularly skilled at developing individualized training regimens that address the specific needs and vulnerabilities of each athlete. Miller explains that these coaches have learned through trial and error which techniques and strategies best mitigate injury risks, leading to improved athlete health and performance.

As supported by Smith (2022), experienced coaches possess a deeper understanding of injury prevention techniques due to their extensive exposure to various athletic scenarios and long-term observations of athlete health trends. Smith noted that seasoned coaches are adept at recognizing early signs of potential injuries and implementing tailored preventive measures, which significantly reduces the incidence of injuries among their athletes.

Significant Relationships Between Management Mechanism and Injury Management

| Variables | Mean | Mean diff | r-value | P-value | D |
|---|---|---|---|---|---|
| Management Mechanism | 3.89 | .14 | .22 | .003 | Significant |
| Injury Management | 3.75 | | | | |

The result implies that the level of injury management mechanism of sports coaches will be the main contributory factor that helps mitigate the injury, supports athletes for recovery and rehabilitation, provides strategies in reducing the possible course injury and efficiently respond to the injury mechanism.

This negates the study of Rees et al. (2021) which states that coaches had positive beliefs regarding the benefits of injury management mechanism. However, they lacked the necessary knowledge and skills to successfully implement injury mechanism and management strategies with players encountering serious injury. Moreover, injured athletes highlight a considerable lack of support from coaches during response and rehabilitation, yet coaches' perspectives are rarely studied. Knowledge critical to effective coaching has been examined (Maurice et al., 2021).

Consequently, to manage injuries effectively from initial diagnosis coaches, and medical personnel need to have excellent knowledge, attitudes, and behaviors in relation to the identification of risk factors for injury, the implementation of injury prevention initiatives, and the implementation of effective injury management mechanism strategies (Horan et al., 2023).

## IV. Conclusion

Based on the findings of the study, the conclusions were drawn.

Sport coaches excel at managing playing situation injuries that goes beyond limitations and proactively prevent injuries by planning, implementing safety guidelines, and reacting swiftly to emergencies. The study shows that as young as the coaches, they can identify chronic and acute injuries and can handle situations at hand. Their academic achievement proves their acquired sports injury managerial skills and coaches have the awareness and competences with the use of 4Rs (readiness, reduction, response, and recovery), as they look into the overall well-being of the athletes, their performance and the athletes' longevity. Furthermore, the use of 4Rs in management mechanism is integral in maintaining the athletes' performance, ensuring them to compete at their best while minimizing the risk and impact of injuries. Notably, though both male and female coaches significantly differ in their experiences, exposures injury management that ensures the athletes receive balanced and well-rounded care that addresses physical aspects of sports injury.

## REFERENCES

[1] Anderson, David, et al. "An Investigation of Coaches' Awareness of Injury in Elite Adolescent Rugby Union in Northern Irish Schools - a Qualitative Study." Physical Therapy in Sport, vol. 57, 1 Sept. 2022, pp. 17–25, reader.elsevier.com/reader/sd/pii/S1466853X22000906?token=ECD68ECE6345DCCA93F5BA6DB11830031654D15504F4B9585038A94C1FD170532317C27CED6F4764DE7606A4CAAEC50A&originRegion=us-east-1&originCreation=20220909061640, https://doi.org/10.1016/j.ptsp.2022.06.004.

[2] Armstrong, Andrew S. L., et al. "The Perceived Role of the Strength and Conditioning Coach in Athlete Rehabilitation." New Zealand Journal of Physiotherapy, vol. 49, no. 2, 14 July 2021, pp. 89–98, https://doi.org/10.15619/nzjp/49.2.05.

[3] Bakar, Nurul, and Mohammad Syamirul Danial Mohd Shaharud. "The Prevalence of Knowledge on Sports Injury Prevention and Management among UiTM Female Athletes." Journal of Physical Education and Sport, vol. 22, no. 10, 30 Nov. 2022, https://doi.org/10.7752/jpes.2022.11339.

[4] Benish, Diane, et al. "Previous Experiences of Novice Coaches and Their Coach-Created Motivational Climate: A Collective Case Study." Physical Education and Sport Pedagogy, 12 Nov. 2021, pp. 1–21, https://doi.org/10.1080/17408989.2021.1993169. Accessed 20 Nov. 2021.

[5] Caldarelli, Guido. "Review of "Introduction to the Theory of Complex Systems" by Stefan Thurner, Rudolf Hanel and Peter Klimek." Journal of Complex Networks, 11 Nov. 2019, https://doi.org/10.1093/comnet/cnz038. Accessed 20 July 2020.

[6] Chan, Derwin King-Chung, and Martin S. Hagger. "Theoretical Integration and the Psychology of Sport Injury Prevention." Sports Medicine, vol. 42, no. 9, Sept. 2012, pp. 725–732, https://doi.org/10.2165/11633040-000000000-00000. Accessed 21 Oct. 2019.

[7] Chen, Yuli, et al. "Management of Acute Sport Injuries." The Bangkok Medical Journal, vol. 16, no. 1, 25 Feb. 2020, pp. 88–94, https://doi.org/10.31524/bkkmedj.2020.13.001. Accessed 27 May 2021.

[8] Christakou, Anna, and David Lavallee. "Rehabilitation from Sports Injuries: From Theory to Practice." Perspectives in Public Health, vol. 129, no. 3, May 2009, pp. 120–126, https://doi.org/10.1177/1466424008094802.

[9] Tee, J. C., McLaren, S. J., & Jones, B. (2019). Sports Injury Prevention is Complex: We Need to Invest in Better Processes, Not Singular Solutions. Sports Medicine, 50(4), 689–702. https://doi.org/10.1007/s40279-019-01232-4

[10] "Coach's Guide to First Aid & Sports Injury Prevention." Maryville Online, 27 Mar. 2020, online.maryville.edu/blog/coachs-guide-to-first-aid/.

[11] COACHES RISK MANAGEMENT HANDBOOK 2020. POP WARNER, 2020.

[12] Edouard, Pascal, and Kevin R. Ford. "Great Challenges toward Sports Injury Prevention and Rehabilitation." Frontiers in Sports and Active Living, vol. 2, 3 July 2020, www.ncbi.nlm.nih.gov/pmc/articles/PMC7739591/, https://doi.org/10.3389/fspor.2020.00080.

[13] Emran, Md Ali, et al. "Sports Injury: Rehabilitation Updates." Bangladesh Medical Journal, vol. 49, no. 2, 23 Mar. 2020, pp. 34–40, https://doi.org/10.3329/bmj.v49i2.55818. Accessed 28 Sept. 2021

[14] Foley, Danny. "Out of My Lane: Injury Management as an S&c Coach." SimpliFaster, 1 Feb. 2023, simplifaster.com/articles/injury-management-sc-coach-protocols/.
[15] Halabchi, Farzin, and Mohammad Hassabi. "Acute Ankle Sprain in Athletes: Clinical Aspects and Algorithmic Approach." World Journal of Orthopedics, vol. 11, no. 12, 18 Dec. 2020, pp. 534–558, www.ncbi.nlm.nih.gov/pmc/articles/PMC7745493/, https://doi.org/10.5312/wjo.v11.i12.534.
[16] Hardy, Maryann, and Beverly Snaith. "Soft Tissue Injuries." Musculoskeletal Trauma, 2011, pp. 9–17, https://doi.org/10.1016/b978-0-443-06928-4.00002-7. Accessed 12 Apr. 2023.
[17] Hassan, Zuraida, et al. "MANAGEMENT COMMITMENT and SAFETY TRAINING as ANTECEDENT of WORKERS SAFETY BEHAVIOR." International Journal of Supply Chain, Operation Management and Logistics, vol. 1, no. 2, 1 Dec. 2020, pp. 12–20, https://doi.org/10.35631/ijscol.12002.
[18] Haugan, Jan Arvid, et al. "Effects of a Mentor Program for Coaches on the Coach-Athlete Relationship." Sports, vol. 9, no. 8, 23 Aug. 2021, p. 116, https://doi.org/10.3390/sports9080116. Accessed 30 Aug. 2021.
[19] Holder, Matt . SPECIAL OLYMPICS SPORTS SCIENCES: SPORTS INJURY GUIDE for COACHES Acknowledgements. Feb. 2014.
[20] Hong, Tan Chyn . "Article." MEH, 16 Oct. 2020, www.mountelizabeth.com.sg/health-plus/article/telling-them-apart-chronic-and-acute-sports-injuries.
[21] Hunt, Kevin, et al. "Practical Advice for Teachers and Coaches: Handling Acute Athletic Injuries." Journal of Physical Education, Recreation & Dance, vol. 87, no. 8, 27 Sept. 2016, pp. 42–46, https://doi.org/10.1080/07303084.2016.1216484. Accessed 12 Apr. 2023.
[22] Janse van Rensburg, DC, and K Nolte. "Sports Injuries in Adults: Overview of Clinical Examination and Management." South African Family Practice, vol. 53, no. 1, Jan. 2011, pp. 21–27, https://doi.org/10.1080/20786204.2011.10874055.
[23] Jones, Kevin. "Coaching Styles and Its Effect on Team Performance." Published, 20 Aug. 2020, soar.suny.edu/handle/20.500.12648/3947. Accessed 25 Oct. 2022.
[24] Kantaros, Eve, and Haylee Borgstrom. "Sex-Specific Differences in Perceived Injury Management and Prevention in High School Student-Athletes." Journal of Women's Sports Medicine, vol. 1, no. 1, 26 Sept. 2021, pp. 30–37, https://doi.org/10.53646/jwsm.v1i1.3. Accessed 22 Nov. 2021.
[25] Kempe, Harald, et al. "Coaches' Experiences of Injury Prevention in Youth Elite Athletes: An Interview Study of 10 Coaches." Physical Therapy in Sport, vol. 63, 1 Sept. 2023, pp. 112–117, www.sciencedirect.com/science/article/pii/S1466853X23000986, https://doi.org/10.1016/j.ptsp.2023.07.007. Accessed 30 Sept. 2023.
[26] King, Jamie, et al. "The Coach's Role during an Athlete's Rehabilitation Following Sports Injury: A Scoping Review." International Journal of Sports Science & Coaching, vol. 18, no. 3, 19 Jan. 2023, p. 174795412211506, https://doi.org/10.1177/17479541221150694.
[27] Kizilkaya Namli, Aysel. "Investigation of Physical Education Teachers' First Aid Response with Vignette Technique." African Educational Research Journal, vol. 9, no. 1, 30 Mar. 2021, pp. 259–272, https://doi.org/10.30918/aerj.91.21.026. Accessed 14 Mar. 2022.
[28] Landry, Mireille. "Brukner & Khan's Clinical Sports MedicineBrukner & Khan's Clinical Sports Medicine, 4th Ed. Brukner Peter Khan Karim Sydney: McGraw-Hill Australia; 2012 ISBN-13 978-0-07099-813-1 1268 P., Illus. CAD$167.95." Physiotherapy Canada, vol. 66, no. 1, Jan. 2014, pp. 109–110, https://doi.org/10.3138/ptc.66.1.rev2.
[29] Ludwig Von Bertalanffy, et al. Von Bertalanffy Ludwig General System Theory 1968. 2012.

[30] Maughan, Ronald J, and Susan M Shirreffs. "Muscle Cramping during Exercise: Causes, Solutions, and Questions Remaining." Sports Medicine (Auckland, N.Z.), 2019, pp. 10.1007/s40279-01901162-1, www.ncbi.nlm.nih.gov/pubmed/31696455, https://doi.org/10.1007/s40279-019-01162-1.
[31] Maurice, Stefanee Opal . "Supporting the Injured Athlete: Coaches' Perspectives on Providing Social Support - ProQuest." Www.proquest.com, 2019, www.proquest.com/openview/184c9452630a1357b5ce9b0640487b04/1?pq-origsite=gscholar&cbl=18750&diss=y.
[32] McCleery, Julie, et al. "Gender Differences in Coaching Behaviors Supportive of Positive Youth Sports Experience." Women in Sport and Physical Activity Journal, vol. 31, no. 2, 2023, pp. 1–10, https://doi.org/10.1123/wspaj.2022-0024.
[33] McNally, Martin, et al. "Definition and Diagnosis of Fracture-Related Infection." EFORT Open Reviews, vol. 5, no. 10, Oct. 2020, pp. 614–619, https://doi.org/10.1302/2058-5241.5.190072. Accessed 12 Apr. 2021.
[34] Menard, Amada, and Lorraine Anne Lou. "A Coach's Guide to First Aid." Www.acls.net, 13 Feb. 2020, www.acls.net/a-coachs-guide-to-first-aid.
[35] Mohamadinejad, Azadeh. Assessment of Coaches' Knowledge Regarding Their Legal Duties toward Athletes. 2014, real-phd.mtak.hu/168/7/azadehmohamadinejad.e.pdf.
[36] Mohamed, Sahar, et al. "Knowledge and Practice towards Injury Safety Measures among School Trainers and Students in Sports and Military Schools at Assiut Governorate." Assiut Scientific Nursing Journal Mohamed et Al, no. 5, 2017, asnj.journals.ekb.eg/article_60415_06d56b1e07b8f2d6621185a24b3d3e0f.pdf. Accessed 17 July 2023.
[37] Morris, Andrew, and Gaurav Patel. "Heat Stroke." PubMed, StatPearls Publishing, 2021, www.ncbi.nlm.nih.gov/books/NBK537135/.
[38] Morse, Royce. "What You Need to Know about Knee Sprain Injuries." Healthline, Healthline Media, 14 Dec. 2018, www.healthline.com/health/sprained-knee
[39] Ngatia, Maina. "The Duties of Coaches and League Owe to Athletes to Prevent Injuries." Www.linkedin.com, 24 June 2023, www.linkedin.com/pulse/duties-coaches-league-owe-athletes-prevent-injuries-maina-ngatia.
[40] O'Halloran, Philip J., et al. "Concussion and Sport: Progress Is Evident." Sports Medicine, 20 June 2022, https://doi.org/10.1007/s40279-022-01713-z. Accessed 22 July 2022.
[41] Pare, Braityn, and Hineterā Callaghan. Coach Knowledge and Attitudes towards Sport Injury Prevention in Youth Basketball. 2022.
[42] Patil, Prashant J., et al. "Assessment of Knowledge, Attitudes and Practices in Coaches Regarding Musculoskeletal Sport Injuries and Sports Safety Measure Use among Sports Participants." Indian Journal of Clinical Anatomy and Physiology, vol. 4, no. 1, 2017, pp. 63–67, www.ijcap.org/article-details/3642. Accessed 25 Oct. 2022.
[43] PodiatryMed & Physiotherapy. "Sports Injury Management – PodiatryMed." Https://Podiatrymed.co.nz/Services/Sports-Injury-Management/, PodiatryMed, 2018, podiatrymed.co.nz/services/sports-injury-management/.
[44] Pontchartrain Orthopedics & Sports Medicine. "Sports Injury Management." Pontchartrain Orthopedics & Sports Medicine, 2022, posm.org/sports-injury-management/. Accessed 2 Nov. 2022.
[45] Prasad, Pradeep. "Injury to the Eye." JAMA, vol. 320, no. 8, 28 Aug. 2018, p. 846, https://doi.org/10.1001/jama.2018.8457. Accessed 24 Jan. 2022.

[46] Prieto-González, Pablo, et al. "Epidemiology of Sports-Related Injuries and Associated Risk Factors in Adolescent Athletes: An Injury Surveillance." International Journal of Environmental Research and Public Health, vol. 18, no. 9, 1 Jan. 2021, p. 4857, www.mdpi.com/1660-4601/18/9/4857#cite, https://doi.org/10.3390/ijerph18094857.
[47] Quinn, Elizabeth , and Miho Tanaka. "The Right First Aid for Sports Injuries Can Help You Heal Faster." Verywell Fit, www.verywellfit.com/sports-injury-first-aid-treatment-3120820. Accessed 17 Sept. 2020.
[48] Radulović, Nikola, et al. "Injuries in Elite Athletes." Exercise and Quality of Life, vol. 11, no. 2, 15 Dec. 2019, pp. 55–63, https://doi.org/10.31382/eqol.191207.
[49] Rees, Huw, et al. "Coaches' Attitudes to Injury and Injury Prevention: A Qualitative Study of Irish Field Hockey Coaches." BMJ Open Sport & Exercise Medicine, vol. 7, no. 3, July 2021, p. e001074, https://doi.org/10.1136/bmjsem-2021-001074.
[50] Roy-Davis, Kylie, et al. "A Grounded Theory of Sport Injury-Related Growth." Figshare.cardiffmet.ac.uk, 19 Dec. 2022, figshare.cardiffmet.ac.uk/articles/journal_contribution/A_grounded_theory_of_sport_injury-related_growth/21750827. Accessed 17 Jan. 2023.
[51] Schlingermann, Brenagh E., et al. "Effects of the Gaelic Athletic Association 15 on Lower Extremity Injury Incidence and Neuromuscular Functional Outcomes in Collegiate Gaelic Games." Journal of Strength and Conditioning Research, vol. 32, no. 7, July 2018, pp. 1993–2001, https://doi.org/10.1519/jsc.0000000000002108.
[52] şentürk, fevzi, et al. "Standardized Classification of Mechanical Ocular Injuries, Efficacy, and Shortfalls." Beyoglu Eye Journal, vol. 6, 2021, https://doi.org/10.14744/bej.2021.01488. Accessed 10 Dec. 2021.
[53] Serner, Andreas, et al. "Mechanisms of Acute Adductor Longus Injuries in Male Football Players: A Systematic Visual Video Analysis." British Journal of Sports Medicine, vol. 53, no. 3, 13 July 2018, pp. 158–164, https://doi.org/10.1136/bjsports-2018-099246.
[54] Sheen, Jonathon R., and Vishnu V. Garla. "Fracture Healing Overview." PubMed, StatPearls Publishing, 2020, www.ncbi.nlm.nih.gov/books/NBK551678/.
[55] Singh, Vandana, and Arah Bihar. "UGC Approved - HOME AIIRJ : AAYUSHI INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (AIIRJ)." Aiirjournal.com, Jan. 2020, aiirjournal.com/uploads/Articles/2020/01/4339_08.Dr.Vandana%20Singh.pdf.
[56] Special Olympics Coaching Guide. COACHING GUIDE Sport Safety and Risk Management for Coaches. Special Olympics Coaching Guide, Dec. 2003.
[57] "Sports Coaching | Life Coach Directory - Life Coach Directory." Www.lifecoach-Directory.org.uk, www.lifecoach-directory.org.uk/articles/sports-coaching.html#whatissportscoaching.
[58] Stapleton, Kellie L., et al. "High School Coaches' Perceptions of Their Responsibilities in Managing Their Athletes' Injuries." Journal of Orthopaedic & Sports Physical Therapy, vol. 5, no. 5, Mar. 1984, pp. 253–260, https://doi.org/10.2519/jospt.1984.5.5.253.
[59] Strand, Bradford, et al. "High School Coaches' Knowledge of Emergency Care." ICHPER-SD Journal of Research, vol. 10, no. 2, 2019, pp. 33–39, eric.ed.gov/?id=EJ1219513. Accessed 28 Apr. 2024.
[60] Sumalapao, DerickErl P, et al. "An Epidemiological Report on the Burden and Trend of Injuries in the Philippines from 2011 to 2018." Journal of Acute Disease, vol. 9, no. 5, 2020, p. 200, https://doi.org/10.4103/2221-6189.291284.

[61] Sun, Yu'an. "CHARACTERISTICS of MAJOR SPORTS INJURIES in HIGH-PERFORMANCE ATHLETES." Revista Brasileira de Medicina Do Esporte, vol. 29, no. spe1, 2023, https://doi.org/10.1590/1517-8692202329012022_0189. Accessed 24 Dec. 2022.
[62] Talpey, Scott W., and Emma J. Siesmaa. "Sports Injury Prevention." Strength and Conditioning Journal, vol. 39, no. 3, June 2017, pp. 14–19, https://doi.org/10.1519/ssc.0000000000000301.
[63] Talpey, Scott, and Emma J Siesmaa. "Sports Injury Prevention: The Role of the Strength and Conditioning Coach." ResearchGate, Lippincott, Williams & Wilkins, May 2017, www.researchgate.net/publication/317172542_Sports_Injury_Prevention_The_Role_of_the_Strength_and_Conditioning_Coach.
[64] Tan Chyn Hong. "Telling Them Apart: Chronic and Acute Sports Injuries." Mount Elizabeth Hospital, Mount Elizabeth Hospital, 11 Apr. 2017, beta.mountelizabeth.com.sg/healthplus/article/telling-them-apart-chronic-and-acute-sports-injuries.
[65] Taukeni, Simon George . "Biopsychosocial Model of Health." ResearchGate, July 2020, www.researchgate.net/publication/344844447_Biopsychosocial Model of Health.
[66] Tee, Jason, and Fieke Rongen. ""How" a Multidisciplinary Team Worked Effectively to Reduce Injury in a Professional Sport Environment - Pre-Print." SportRXiv, 6 May 2020, https://doi.org/10.31236/osf.io/7qh4c.
[67] Torlincasi, Allison M, et al. "Acute Compartment Syndrome." Nih.gov, StatPearls Publishing, 2019, www.ncbi.nlm.nih.gov/books/NBK448124/.
[68] Tsang, Siny, et al. "Guidelines for Developing, Translating, and Validating a Questionnaire in Perioperative and Pain Medicine." Saudi Journal of Anaesthesia, vol. 11, no. 5, 2017, p. 80, www.ncbi.nlm.nih.gov/pmc/articles/PMC5463570/, https://doi.org/10.4103/sja.sja_203_17.
[69] U.S. Sports Academy. "A Coach's Responsibility: Learning How to Prepare Athletes for Peak Performance." The Sport Journal, 14 Feb. 2011, thesportjournal.org/article/a-coachs-responsibility-learning-how-to-prepare-athletes-for-peak-performance/.
[70] Wu, Shenghai, and Xin Luo. "Prevention and Treatment of Sports Injuries and Rehabilitative Physical Training of Wushu Athletes." Applied Bionics and Biomechanics, vol. 2022, 30 Apr. 2022, pp. 1–9, https://doi.org/10.1155/2022/2870385. Accessed 10 May 2022.
[71] Yung, Kate K., et al. "Characteristics of Complex Systems in Sports Injury Rehabilitation: Examples and Implications for Practice." Sports Medicine - Open, vol. 8, no. 1, 22 Feb. 2022, https://doi.org/10.1186/s40798-021-00405-8.
[72] Zhou, Wenyong, and Huan Chu. "Identification of Sports Athletes' High-Strength Sports Injuries Based on NMR." Scanning, vol. 2022, 15 July 2022, pp. 1–7, https://doi.org/10.1155/2022/1016628. Accessed 2 Nov. 2022