

Factors Contributing to Sports Injuries Among School Athletes in Omaheke Region: A Review of Intrinsic and Extrinsic Risks

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Abstract

The main aim of this study was to investigate into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia. Quantitative research design was employed for this study, this approach was found appropriate and suitable for this study as it allowed the researcher to gather and analyse in-depth relevant information that relates to the phenomenon being investigated. A total of $n = 200$ gym users who were purposively selected formed part of the targeted sample, of which $n = 73(36.5\%)$ were female and $n = 127(63.5\%)$ were male participants. Data was collected from fitness centres within Katima Mulilo using questionnaires created by the researcher and analysed using statistical software V21 SPSS to find frequencies and percentages, moreover, analysed quantitative data was presented in tables. The results of this study shows that; lower back pain commonly sustained through lifting heavy weights caused injuries in male participants by 23(18%) and 6(8.2%) in female participants, shoulder injuries through rotator cuff issues caused injuries in male gym user by 17(13.3%) and 3(4.1%) in female participants, knee injuries associated with ligament issues or pain sustained from running, jumping or squatting incorrectly caused injuries among male gym users by 50(39.3%) and 15(20.5%) in female participants. Wrist and elbow pain such as strains and tendinitis caused injuries in male gym users by 62(48.8%) and 17(23.2%) in female participants, shin splints associated with pain in the shins from running or jumping on hard surface caused injuries by 22(17.3%) and 8(10.9%) in female participants, muscle strain or pulls associated with groin pulls or general muscle tears from overstretching muscles caused gym injuries in male participants by 33(25.9%) and 11(15%) in female participants, ankle sprain associated with incorrect landings or sudden movements during cardio caused injuries in male gym users by 16(12.6%) and 4(5.4%) in female participants. Results further show common causes of gym injuries, to which participants indicated that lifting excessively heavyweights caused 80(62.9%) in male, and 10(13.6%) in female participants, improper form or technique caused injuries among gym members by 57(44%) in male and 55(75.3%) in female participants, overtraining or insufficient rest caused injuries in gym users by 77(60.6%) male and 23(31.5%) in female participants, sudden, jerky movements caused injuries in gym canterers by 60(47.2%) in male and 31(42.4%) in female participants. Lastly, results shows prevention of gym injuries, to which participants indicated that warming up properly before exercise and cool down after prevented injuries by 80%, gradually increase of weight and intensity prevented gym injuries by 60%, whereas focus on correct form over lighting heavy prevented gym injuries in fitness centres by 58%, listening to your body and rest when needed prevented injuries by 50%.

Keywords: Common gym injuries, causes, prevention, fitness centres Katima Mulilo

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Introduction

School sports have an important role to play in ensuring physical fitness, social growth as well as psychological well-being of learners. Nevertheless, regardless of the above advantages, sports involvement is linked to a high probability of injuries, especially among school-going students. Such injuries have the potential to impact negatively on the performance, academic growth, and the participation of learners in sports in the long run. School athletes are exposed to sports injuries which are a combination of both intrinsic and extrinsic factors. Intrinsic ones are body mass index (BMI), physiological condition, previous history of injury, sex, and age. It has been shown that underweight and overweight learners are more prone to injuries, and a history of past injuries is a significant risk factor of re-injury and severity of the injury (Li et al., 2025; Shigematsu et al., 2022; Knowles et al., 2009). Research also shows that risk of injury is greater in the competitive events compared to the training

sessions and acute injuries are more common than overuse injuries. Also, lower extremity injuries are the most prevalent among the school athletes (Ritzer et al., 2021). Notably, some of these risk factors can be modified such as training load, warming up, supervision and safety education. These aspects can be addressed to prevent injuries (Ding et al., 2022; McGuine, 2006; Prieto-Gonzalez et al., 2021). Thus, the interaction of intrinsic and extrinsic factors is extremely important in the development of effective injury prevention strategies. This paper aims at exploring these aspects in the context of school athletics in the Omaheke Region in Namibia to encourage safer involvement and enhance the well-being of learners.

Overview of Sports Injuries in School Athletics

Athletic injuries are a broad term describing a form of physical damage or injury that is incurred by the people who engage in sports and physical activities. The

injuries can be of different degrees, mellow sprains and strains or more severe fractures, concussions and rips of the ligament. These injuries may affect most parts of the body such as muscles, bones, joints and soft tissues. Sporting injuries make the list of the most significant reasons to be concerned among the global group of school-aged learners due to their prevalence and the potential health, educational, and overall health outcomes (Ruedi et al., 2016; Van Beijsterveldt et al., 2015). Researchers have indicated that school athletics programmes also experience a considerable number of injuries, and their rates differ according to such criteria as the sport, age, and the level of competition (Ruedi et al., 2016; Van Beijsterveldt et al., 2015). According to the statistics of the Ruedi et al., (2016), millions of injuries in the sporting field are experienced by high school athletes annually, namely, approximately 2 million injuries are reported each year among 14-18-year-olds. Common injuries in school sports programmes such as sprains, strains, concussions, fractures, and overuse conditions such as tendonitis and stress fractures are also common. Such injuries do not only lead to physical discomfort and limitations, but also influence academic performance, participation in social activities, and participation in physical activities in the long term (Van Beijsterveldt et al., 2015). In order to come up with a proper strategy of preventing and intervening injuries in athletics among the school going learners, it is important to have a clear picture on the prevalence and nature of these injuries. Such information will be useful in encouraging healthier and more enjoyable sporting experiences and events among these people (Ruedi et al., 2016; Van Beijsterveldt et al., 2015).

Intrinsic Risk Factors

Intrinsic risk factors are those internal factors of learners that put them at risk of sports related injuries. These aspects are in-built in the individual and they have an effect on the way the body reacts to physical exercise, training needs and external factors. The major intrinsic factors are the age, physical development, the level of fitness, history of previous injuries, biomechanical factors and psychological factors. The age and physical maturation have a significant impact in causing injuries among school athletes. The young learners are especially susceptible because they are not fully developed in musculoskeletal. Moreover, the growth spurts may lead to the short-term imbalance of all three aspects of strength, flexibility, and coordination, which can contribute to the risk of being injured (Mandorino et al., 2022; Taimela et al., 1990). The physical fitness and conditioning are also significant factors that define the injury risk. Students who have poor physical fitness- which is manifested in low flexibility, inability to exert sufficient muscular strength, and lack of endurance- are more prone to muscle strains and injuries caused by fatigue. The inadequacy of conditioning will decrease the resistance of the body to the physical load of sports, which leads to the emergence of injuries (Mandorino et al., 2022; Taimela et al., 1990; Shigematsu et al., 2022).

The past records of injuries have been greatly cited as one of the most potent predictors of subsequent

injuries. Students that have previously suffered injuries are more susceptible to the re-injury, especially in cases where there is a lack of rehabilitation, or the student goes back to the field too soon. It makes the body parts more vulnerable and negatively affects the overall physical performance (Beynnon et al., 2022; Mandorino et al., 2022; Shigematsu et al., 2022). Biomechanical aspects are also risk factors to injury. Unfavorable posture, wrong movement patterns, muscle imbalance and abnormal loading of the joints can put undue weight on the musculoskeletal system. Such inefficiencies in biomechanics can cause overuse injury as well as acute injury particularly when the same is repeated over time without any correction (Beynnon et al., 2022; Mandorino et al., 2022; Taimela et al., 1990). It is also based on psychological reasons of the injury. Lack of coordination, reaction time, and decision-making may adversely impact the athletic activity due to stress, anxiety, and lack of concentration. Consequently, students can have a higher likelihood of mistakes and wrong decisions, which risk their harm (Shaffer et al., 2024; Taimela et al., 1990).

All in all, the intrinsic risk factors do not work in solitude but, in many cases, they interact with extrinsic factors like the training conditions and the environmental factors. This communication brings to the focus the importance of multifaceted procedures in injury prevention which takes into account both personal features of the learners and external hazards. Intrinsic risk factors are personal attributes of learners that expose learners to sports-related injuries. These aspects are strongly related to the physical, biomechanical and psychological constitution of a certain person and they determine the way the body adapts to the training-related requirements, the sport performance, and the external environmental factors. As noted in the literature, age, physical development, fitness level, prior injury history, biomechanical characteristics, and psychological state are always highlighted as the key determinants of the risk of injury (Mandorino et al., 2022; Taimela et al., 1990; Shigematsu et al., 2022; Beynnon et al., 2022; Shaffer et al., 2024). Of especially great importance is age and physical development. Youths are more susceptible to injuries, as their musculoskeletal systems are still in the process of development. Growth spurts or rapid growth phases may cause temporary disequilibrium in strength, flexibility, and coordination, which causes learners to be susceptible to strains, sprains, and other musculoskeletal injuries (Mandorino et al., 2022; Taimela et al., 1990). This shows the necessity of age-related training programs that will take into consideration the level of growth and maturation to reduce the risk of injuries.

Extrinsic Risk Factors

Extrinsic risk factors are external factors and environmental forces that lead to the occurrence of sports injuries in school athletes. These are not factors intrinsic to the individual but they are brought about by the context within which the learners engage in athletics. Some important extrinsic variables are training techniques and loads, quality and supervision

of coaches, training equipment, and environmental conditions. Training styles and load are important factors that cause injuries. Overuse injuries may occur as a result of excessive training intensity, frequency, or duration without sufficient rest especially in cases where the training programmes are not within the physical limits of the learner. The ineffectiveness of training due to the inability to use individual differences in fitness and development leads to fatigue and predisposition to injury (Mandorino et al., 2022; Lindman et al., 2024; Shigematsu et al., 2022). The quality of coaching and supervision is also important in the prevention of injuries. Poor teaching methods, ineffective supervision, and absence of good implementation of safety measures can greatly increase the chances of injuries among the learners. On the other hand, there are well-educated and trained coaches who can contribute to the minimization of injuries and injuries frequency by promoting correct techniques, training and following the safety practices (McGuine, 2006; Knowles et al., 2009).

Extrinsic factors are also important equipment and facilities. Inappropriate, damaged, or badly maintained equipment may be used, which is likely to lead to injuries. On the same note, accidents and physical injuries are also caused by unsafe playing surfaces, including uneven surfaces or poorly maintained tracks and fields. It is important to minimize the risk of injuries, and to achieve this, it is vital to ensure that the equipment and safe facilities are accessible (Ding et al., 2022; Crotti et al., 2024). High level competition and early sports specialization are also other factors that expose school athletics to higher risks of injury. These are the factors that put learners at greater physical demand and repetitive stress that can be beyond their developmental capacity. Consequently, they tend to get acute and overuse injuries (Mandorino et al., 2022; Shigematsu et al., 2022; Crotti et al., 2024). In general, extrinsic risk factors can be greatly adjusted and hence offer significant intervention prospects. Training loads, coaching practices, equipment use and maintenance, and provision of safe sporting environments are also important measures of limiting the incidence of injuries and ensuring a safe involvement in school athletics (Mandorino et al., 2022; McGuine, 2006; Ding et al., 2022).

Interaction of Intrinsic and Extrinsic Factors

Single causes of sports injuries amongst the school athletes are rarely present but instead, it is a result of the interplay between the intrinsic and extrinsic risk factors. The personal factors that predispose a particular learner to injury are intrinsic in nature and these factors include age, physical fitness, history of previous injuries, biomechanical factors, and the psychological factors. Conversely, the magnitude of exposure to the risk of injury is influenced by extrinsic factors, such as the training load, coach practices, equipment, and environmental situations (Mandorino et al., 2022; Shigematsu et al., 2022; Ding et al., 2022).

The combination of these factors has a great impact on the probability of injury. As an example, students with low physical conditioning or past injuries (intrinsic factors) were more susceptible to being exposed to too

much training intensity, inadequate supervision, or poorly designed training programmes (extrinsic factors) (Lindman et al., 2024; McGuine, 2006). On the same note, biomechanical inefficiencies, including the presence of poor movement patterns or muscle imbalances, can be exacerbated by inappropriate coaching methods or inappropriate equipment, and this increases the probability of both acute and overuse injuries (Beynon et al., 2022; Crotti et al., 2024). Moreover, the psychological and physiological conditions (intrinsic factors) (concentration, coordination, and reaction time) may be negatively influenced by fatigue caused by the excessive loads of training or the high level of competition demands (extrinsic factors). Such interaction predisposes the possibility of errors in performing athletic activity, which in the end result in injury (Mandorino et al., 2022; Taimela et al., 1990; Shaffer et al., 2024). This interrelationship is important to note that it is neither intrinsic nor extrinsic factors that will be sufficient to explain sports injuries. Rather, there are increased chances of injuries as a result of the combination of risk factors. The latter is justified by the fact that sports injuries are multifactorial, as individual susceptibility in combination with the environment of exposure predetermines the results of injuries (Knowles et al., 2009; Mandorino et al., 2022). It is important to know how intrinsic and extrinsic factors interact in order to prevent injuries. It highlights the importance of the comprehensive approach, which is concerned with the personal characteristics of the learner and external factors. One-on-one training programmes, proper coaching and supervising, correct equipment wearing, and healthy sporting conditions are also important in eliminating the risk of injuries (Ding et al., 2022; McGuine, 2006).

Methodology

Research Design

The research design used in this study was qualitative research design in order to research and comprehend the causes of sports injuries among learners who have attended school athletics in the Omaheke Region. The qualitative approach was suitable because it gives the opportunity to thoroughly investigate the experience, perceptions, and insights of learners on the occurrence of injuries during school athletics.

Research Setting

The research was carried out among the Omaheke Region of Namibia, where the junior and secondary schools were selected based on the school athletics programmes they undertake actively. These schools offered an appropriate background on which to analyse the experiences associated with injuries among students.

Population and Sample

The target population was learners who were involved in school athletics in the Omaheke Region. The participants were selected using a purposive sampling method based on the related experience to athletics and sports-related injuries. Seventeen (7) junior and secondary schools in the region were sampled to identify 16 learners. The sample was comprised of learners that either had suffered injuries or were

engaged in athletics, therefore ensuring that the data collected was rich and relevant.

Data Collection Methods

Semi-structured interviews were used to collect data. The approach enabled the researcher to pose pre-set questions and also gave the participants the freedom to discuss their experiences in detail. The interviews were directed towards, sports injury causes, personal experience of injuries, training conditions and supervision, and knowledge of injury prevention measures. The interviews were all done in a way that made the participants feel relaxed and at ease and were free to air their own opinions.

Data Analysis

Thematic analysis was used to analyse the data. The interview answers were transcribed, coded, and organized into themes depending on intrinsic and extrinsic factors that contribute to sports injuries. The process involved in order to be familiarised with the data were coding of major responses, determination of the themes and interpretation of findings. That was the question of the participants who were inquired about what they believed were the causes of these injuries. Do you feel like there is certain activity or situation that leads to these injuries? Respondents cited numerous contributory factors, including lack of adequate warm up procedures, unsuitable shoes, unsafe playing conditions and violent behaviours of players. The comments below are clear indications of what the participants think:

Results

Below are the results derived from participants' responses in relation to the study phenomenon

Participant number 1, answered that:

"My assumption about the injury is that the other players were aggressive in most parts and I was merely unskilled in playing my part. The violent nature of the play plus undergoing the game with inadequate skills in the simple playing methods led to the injury."

Participant number 2, stated that:

"I believe that the primary cause of the injury was the existence of holes on the playing field that caused unstable footing. I trapped my ankle in one of those holes when I was playing and as a result twisted it."

Participant number 3, stated that:

"The physical impulse that caused the injury was the push by my opponent. The players were also aggressive and I did not have the right netball shoes, exposing me to more harm."

Participant number 4, answered that:

"It has also been greatly contributed by hard tackles by other players. Sudden change of direction during games and rough tackles without sufficient preparation with protection are some of the reasons that lead to the injuries."

Participant number 5, answered that:

"It was also not a smooth pitch, and it was wet and greasy areas, making it hard to maintain balance. It was due to the bad ground conditions and the attempt to keep the ball in a long-term situation of high pressure resulting in my injury."

Stated by participant number 6, that:

"The ground was not even, stones were on the pitch, and it was hard to make a safe landing. When it came to diving or falling the injury was more likely due to the poor condition of the playing field with stones and bumps."

Respondent number 7, said that:

"The pitch was oily and I had either over-trained or had not trained adequately before the match. Training or playing on wet field, excessive strains, and irregular training were some of the factors that caused my injuries."

Participant number 8 responded by stating:

"Other players on the conflicting team would look at me as the key to victory and therefore, express their jealousy and aggression towards me. The incident was caused by envy on the part of less-skilled opponents and their intentional acts in the game."

Participant number 9, responded by saying:

"The court is interlocked on the surface, and that is extremely hard and uncongenial on the occasion of a fall. Hard playing surface and physical contact were among other factors that led to my injury."

The participant number 11 replied that:

"The need to compete without prior practice and running at a high speed provoked my asthma and brought up physical distress. My body was strained because of the absence of training and conditioning prior to the competition."

Participant number 13, replied that:

"I suppose that the weather conditions like heat or wind or the quality of the surface are significant contributors to athletic injuries. Sports-related injuries are caused by physical interaction in the process of playing and stressors in the environment."

Participant 14 got a response of:

"I attribute the injury to the hands of the incompetent trainers who did not take me through the right warm-up processes. Absence of correct warm-up programs and sufficient coach-assistance made the injury more likely."

Participant 10, 12, and 15 stated they did not have any injuries which, according to participant 16, answered:

"No, it was the fellow player who caused the injury, which means that physical contact was the major problem. A violent physical play on the field contributed significantly to the injury."

Findings and Discussions

Participant interview results indicate that school athletics injuries are affected by the complex interaction of personal, environmental, and interpersonal factors. Although not all participants reported any cases of being injured, the majority provided personal experiences that give an indication to both intrinsic and extrinsic factors that cause injuries. These qualitative data are used to enhance the comprehension of what predisposes the learner-athletes to injury when exercising. One of the most common complaints made by the participants was poor playing surfaces; this included uneven field, holes, damp areas, interlock court surface and presence of stone. Participants 2, 5 and 6 specifically outlined the effects of these conditions as hurting their safety that led to ankle twists, falls and impact injuries. The results are

similar to other sources in the literature (Kelm et al., 2001; Vilchkovski and Pasichnyk, 2017) that underline the potential impact of poor technical conditions of sports infrastructure on the probability of injury. Participant number 9, likewise, cited the hard interlock surface of a netball court as one of the factors that made the injury on falling even worse. Another serious concern among the participants was inappropriate gear and clothing, in particular, footwear. Participant 1 mentioned that the height and thinness of the sole of their shoes influenced their balance which resulted in a strained ankle. Equally, Participant number 3 put vulnerability on the failure to wear the appropriate netball shoes. These insights confirm that inappropriate sports equipment may hamper performance and increase the chances of injury, which is consistent with existing evidence that highlights the significance of appropriate equipment in injury prevention (Ritzer et al., 2021).

One of the most conspicuous injury causes turned out to be aggressive player behaviour and physical contact in sports. Participants 1, 3, 5, 8, 9, and 16 had all cases of fouls by other players which caused injury either due to intentional fouls or uncontrolled fouls. The reflection of participant number 8 concerning being intentionally fouled because he outplayed others has an implication of a concerning culture of retaliatory actions within competitive sports in schools. These effects are in line with the results of Pizzarro et al. (2024) who found that highly physically contact sports, such as soccer and netball, are linked to high risk of injury. Besides, physical ill-equippedness and absence of warming up exercises were also factors leading to injuries. All the participants (4, 7, 11, and 14) mentioned sudden directional changes, muscle strains caused by no warming-up, poor physical conditioning, and inappropriate returns of play. Participant number 14 made a significant criticism of unqualified trainers indulging in lack of proper preparation of the pre-activity, attributed quality of coaching to injury prevention. This viewpoint advocates the necessity of trained supervisors who would be able to implement safety measures and appropriate biomechanics training (Vilchkovski and Pasichnyk, 2017).

The environment and the psychosocial context was also taken into account. As in the case of Participant number 13, physical interaction and the condition of the environment (heat, wind) might increase the risk of injury. Meanwhile, Participant number 7 emphasized the issue of overtraining and inconsistent training, and this weakens the physical preparedness and decision-making in the competition. These findings indicate the wider body of literature on the influence of overuse injuries and stressors on the environment on athletic safety (Vilchkovski and Pasichnyk, 2017). Interestingly, some participants (e.g., Participants number 10, 12, and 15) did not have any experience of injuries. Their answers showed that proactive risk management, risky playing, and injury prevention techniques e.g. warming up and not taking unnecessary risks can reduce the risk of sports-related injury significantly. These stories are important oppositions that prove awareness and behavioural control could be

protective factors. The interview analysis of the participants within this research indicates that sports related injuries among school athletes are a multiplex process, which is a mixture of intrinsic, extrinsic, environmental, and interpersonal factors. Although a portion of the respondents did not report injuries, most of them cited individual vulnerability, unstable conditions and violent actions among participants to have contributed to the occurrence of injuries.

Intrinsic Factors

Intrinsic factors that are intrinsic characteristics leading to the predisposition of learners to injury have been highlighted by participant accounts. Some of the participants pointed to poor physical preparation and conditioning, such as absence of warm-up exercises, overtraining, and insufficient pre-competition training (Participants 4, 7, 11, 14). The findings can be compared to the existing body of literature that defines poor physical fitness, muscle imbalances, previous history of injuries, and psychological stress as the primary intrinsic risk factors (Mandorino et al., 2022; Shigematsu et al., 2022; Beynnon et al., 2022; Shaffer et al., 2024). Instances of abrupt turning and intense play without proper preparation also caused vulnerability hence demonstrating the interaction of inherent weaknesses and situational demands.

Extrinsic Factors

Extrinsic forces, such as external conditions and environmental influences, were mentioned by participants as the prominent factor. Fields with holes, stones, wet area and hard court were also mentioned as unsafe and uneven playing surfaces (Participants 2, 5, 6, 9). These environmental risks are consistent with the previous studies revealing that facilities in poor conditions contribute substantially to the risk of injury (Kelm et al., 2001; Vilchkovski and Pasichnyk, 2017). On the same, improper sportswear, especially improper footwear, also led to the instability and ankle injuries (Participants 1, 3), supporting the evidence that appropriate equipment is crucial to injury prevention (Ritzer et al., 2021). Extra extrinsic determinants were coaching quality and supervision. Participant 14 stressed incompetent instructions and wrong warm-up teaching, which is the work of qualified trainers to ensure the safety regime and correct technique. Participants 1, 3, 5, 8, 9, and 16 also expressed aggressive player behavior and physical contact during games as a leading cause of injury. Cases of intentional foul play or retaliatory behaviour are not only indirect evidence of physical dangers of contact sports but of psychosocial processes that increase the risk of injury (Pizzarro et al., 2024). Participants 7 and 13 reported additional environmental stressors like heat, wind and slippery surfaces that contributed to risk of injury. Extrinsic conditions were influenced by intrinsic limits and worsened decision-making and coordination in competitions, which depicts the interactions between extrinsic conditions and intrinsic limits to trigger injuries (Vilchkovski and Pasichnyk, 2017; Mandorino et al., 2022).

Combination of Intrinsic and Extrinsic Factors.

According to the participant stories, the interaction of intrinsic and extrinsic risk factors is evident. As an

illustration, poorly conditioned and untrained learners were more exposed to the dangers of playing in hazardous conditions, facing aggressive players and under close supervision. These risks were intensified by fatigue and overexertion that led to poor coordination, concentration, and reaction times, which put a person at risk of both acute and overuse injuries. These findings confirm theoretical frameworks that highlight that injuries happen when several risk factors are interacting with an inciting factor (Meeuwisse, 1994; Meeuwisse et al., 2007).

Theoretical Implications

The results are consistent with multifactorial and biopsychosocial models of cause of injury, according to which sports injuries are the products of interaction of intrinsic, extrinsic, biological, psychological, and social factors (Bittencourt et al., 2016; Pol et al., 2018; McClean et al., 2024). The issue of workload management, adaptation and fatigue becomes the key mediating variables and proves the necessity of the holistic prevention that is to take into consideration both the individual and environmental risk factors. Such a comprehensive approach is especially applicable to the school athletics, where developmental stages of learners, the competitive stress, and limited resources meet.

Protective Factors

Interestingly, participants who did not mention any injuries (Participants 10, 12, and 15) emphasized such proactive behaviours as cautious play, regular warm-up activities, and safe practice. These descriptions indicate that preventing injury can be addressed through awareness, behavioural control, and compliance to preventive measures that would address the argument that extrinsic factors are more or less controllable.

Conclusion

The paper notes that sport injuries in school athletes in the Omaheke Region of Namibia are complex and are as a result of interaction of both intrinsic (e.g., age, physical fitness, past injuries, biomechanics, psychological condition), and extrinsic (e.g., training procedures, quality of coaching, equipment), environmental and interpersonal factors. The experiences of the participants highlighted that unsafe playing fields, insufficient preparation, aggressive traits, poor equipments, and environmental stressors are all factors that expose players to the risk of injury. Such conclusions prove the fact that sports injuries are not usually caused by one factor, but the combination of interpersonal, social and environmental determinants. An integrated and contextual based model to preventing injury is therefore necessary to ensure the safety of the learner-athletes and the safety of participating in school athletics programs.

Implications for Practice

Coaching and Supervision: Schools should ensure that coaches are trained and qualified to provide proper guidance, correct techniques, enforce safety protocols, and design age-appropriate training programs. **Infrastructure and Equipment:** Adequate investment in safe playing surfaces and sports equipment is critical to reduce avoidable injuries. Regular inspection and maintenance of fields and courts are essential. **Physical**

Preparation: Learners should engage in structured warm-up, conditioning, and gradual skill development to enhance fitness, coordination, and injury resilience. **Monitoring Workload:** Training schedules should incorporate rest periods, recovery, and gradual progression to prevent overuse injuries. **Awareness and Education:** Both learners and educators should be educated on injury risks, prevention strategies, and safe sports practices, fostering a culture of safety and accountability.

Implications for Policy

Mandatory Safety Standards: Educational authorities should establish and enforce regulations on sports facility safety, equipment standards, and coaching qualifications. **Injury Reporting and Management:** Schools should implement standardized injury reporting systems to track incidents and monitor risk patterns. **Policy on Training Load and Competition:** Guidelines should regulate training intensity, early sports specialization, and high-risk activities to protect developing athletes. **Funding and Resource Allocation:** Government and educational bodies should prioritize investment in sports infrastructure, protective gear, and access to sports medicine services, especially in resource-limited areas.

Recommendations

Develop comprehensive school-based injury prevention programs that integrate intrinsic, extrinsic, environmental, and interpersonal factors. Train and certify all sports coaches in safe coaching practices, first aid, and emergency response. Conduct regular assessments of playing fields and equipment, ensuring compliance with safety standards. Introduce mandatory warm-up routines and conditioning sessions before all competitive and recreational school sports. Educate learners on risk awareness, safe play, and injury prevention, fostering self-regulation and accountability. Encourage collaboration between schools, parents, and sports organizations to implement sustainable injury prevention policies and programs.

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