

**LEVEL OF AWARENESS AND PRACTICE OF SPORT INJURY
PREVENTION STRATEGIES AMONG AMATEUR FOOTBALL
PLAYERS IN UNIVERSITY OF BENIN**

BY

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CERTIFICATION

This dissertation by Okolie Emmanuel is accepted in its present form as satisfying the dissertation requirement of the degree of Bachelor of Physiotherapy of the School of Basic Medical Sciences, College of Medical Sciences of University of Benin.

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DEDICATION

This dissertation is dedicated to God Almighty for his sufficient grace and mercies all through my academic journey.

ABSTRACT

Background/Purpose: Sports injuries are common among football players and can negatively impact performance and participation. Injury-prevention strategies such as warm-up routines, strength training, and flexibility exercises are proven to reduce injury risk, yet their application among amateur players in Nigerian universities remains unclear. This study assessed the level of awareness and practice of sports injury prevention strategies among amateur football players in the University of Benin.

Methods: A descriptive cross-sectional design was adopted. A structured, self-administered questionnaire adapted from a previous study was distributed to 298 amateur football players selected through consecutive sampling. Data were analysed using descriptive and inferential statistics, including frequency distributions and Chi-square tests to determine associations between socio-demographic variables and prevention practices, with a significance level set at $p < 0.05$.

Results: Findings revealed that most participants were males (60.4%) aged 18–25 years. General warm-up programme was commonly performed three to five times weekly (15.4% each), while 17.4% reported no participation. Flexibility and strength training were the most commonly practiced preventive measures, while the FIFA 11+ programme was infrequently used. No significant association was found between age and practice of injury-prevention strategies ($p > 0.05$). However, male players showed higher engagement in general warm-up ($\chi^2 = 14.088$, $p = 0.029$), and specific prevention ($\chi^2 = 15.163$, $p = 0.019$) routines compared to females. Playing position was not significantly associated with either awareness or practice of injury-prevention strategies ($p > 0.05$).

Conclusion: Amateur football players at the University of Benin demonstrated moderate awareness and practice of injury-prevention strategies. Despite recognizing the importance of prevention, adherence to structured programmes remained low. There is a need for enhanced education, structured preventive training, and improved access to physiotherapy services to promote safer participation in university football.

Keywords: Awareness, Practice, Injury Prevention, Amateur Football, University of Benin

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TABLE OF CONTENTS

TITLE PAGE	i
CERTIFICATION.....	ii
DEDICATION.....	III
ABSTRACT.....	iv
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	xi
LIST OF FIGURES.....	XIII
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.2 Statement of the Problem.....	5
1.3 Research Questions.....	6
1.4 Aim of the Study.....	7
1.4.1 Specific Objectives.....	7
1.5 Hypothesis.....	8
1.5.1 Main Hypotheses.....	8
1.5.2 Sub Hypotheses:.....	8
1.6 Significance of Study.....	14
1.7 Scope and Delimitation.....	16
1.8 Limitations of the Study.....	16
1.9 Definition of Terms.....	16
1.10 List of Abbreviations.....	17
CHAPTER TWO: LITERATURE REVIEW.....	18
2.1 Conceptual Framework.....	18

2.1.1 Sport Injury	19
2.1.2 Epidemiology	20
2.1.3 Categories of Sport Injury	22
2.1.4 Common Types of Sport Injury	24
2.1.4.1 Fracture	24
2.1.4.2 Dislocation	29
2.1.4.3 Strain	32
2.1.4.4 Sprain	34
2.1.4.5 Laceration	35
2.1.4.6 Abrasion	36
2.1.4.7 Tendonitis	37
2.1.4.8 Concussion	39
2.1.5 Factors That Lead to Sport Injury	40
2.1.6 Effects of Sport Injury	43
2.1.7 Ways of Preventing Sport Injury	45
2.1.8 Diagnosis of Sport Injury	49
2.1.9 Management and Treatment of Sport Injury	50
2.2 Meaning of Football	52
2.2.1 Types of Football	53
2.2.2 Injury Prevention in Football	55
2.2.3 Role of Physiotherapy in Injury Prevention among Footballers	58
2.3 Empirical Review of Literature	62
CHAPTER THREE: MATERIALS AND METHODS	66
3.1 Participants	66
3.1.1 Inclusion Criteria	66

3.1.2	Exclusion Criteria.....	66
3.2	Materials	66
3.2.1	Apparatus/ Instrument.....	66
3.3	Methods.....	69
3.3.1	Research Design.....	69
3.3.2	Sampling Technique/ Sample Size Calculation.....	69
3.2.3	Research Procedure/Procedure for Data Collection	72
3.2.4	Ethical Consideration.....	74
3.2.5	Data Analysis.....	74
CHAPTER FOUR: RESULTS.....		75
4.1	Physical Characteristics of the Respondents.....	75
4.1.2	Socio-Demographic Characteristics of the Respondents.....	77
4.1.3:	Level of Awareness of Sports Injury Prevention Strategies among Amateur Football Players.....	79
4.1.4 :	Extent of Practice of Injury Prevenmtion Strategy	83
4.1.4	Association between Age and Injury Prevention Strategies	86
4.1.5:	Association between Sex and Injury Prevntion Strategies	89
4.1.6	Association between Playing Position and Extent of Practice of Injury Prevention Strategies.....	92
4.1.8	Association between Gender and Level of Awareness of Injury Prevention Strategies..	99
4.1.9	Association between Playing Positions and Level of Awareness.....	103
4.2	Hypothesis Testing.....	107
CHAPTER FIVE: DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS.....		128
5.1	Discussion.....	128
5.2	Conclusion.....	131

5.3 Recommendations	131
5.4 Implications for Further Study	132
REFERENCES.....	133
APPENDIX A: QUESTIONNAIRE.....	147
APPENDIX B: INFORMED CONSENT FORM.....	152
APPENDIX C: ETHICAL APPROVAL.....	153

LIST OF TABLES

TABLES	PAGES
Table 1: Empirical Table	62
Table 2: Sample Techniques.....	70
Table 3: Sample Size	71
Table 4: Physical Characteristics of all Respondents	76
Table 5: Sociodemographic Characteristics of the Respondents.....	78
Table 6A: Level of Awareness of Risk of Sport injuries and body part injured among Amateur Football Players	81
Table 6B: Level of Awareness of Sport Injuries Prevention Strategies among Amateur Football Players	82
Table 7: Extent of Practice of Injury Prevention Strategy.....	85
Table 8A: Association of Age and Sport Injury Prevention Strategies among Amateur Football Players.	87
Table 8B: Association between Age and Sport Injury Prevention Strategies of FIFA 11+, Warm-up, Movement Preparation and Cool down, Balance and Core Stability Training, Other Prevention Measures among Amateur Football Players.	88
Table 9A: Association between Sex and Injury Prevention Strategies among Amateur Football Players.....	90
Table 9B: Association between Sex and Injury Prevention Strategies of FIFA 11+, Warm-up, Movement Preparation and Cool down among Amateur Football Players.....	91
Table 10A: Association between Playing Position and Injury Prevention Strategy among Amateur Football Players.	93

Table 10B: Association between Playing Position and Injury Prevention Strategy among Amateur Football Players of FIFA 11+, Warm-up, Movement Preparation and Cool down among Amateur Football Players.	94
Table 11A: Association between Age and Level of Awareness among Respondents	97
Table 11B.: Association between Age and Level of Awareness among Respondents.....	98
Table 12A: Association between Gender and Level of Awareness among Respondents..	101
Table 12B: Association between Gender and Level of Awareness among Respondents .	102
Table 13A: Association between Playing Positions and Level of Awareness	105
Table 13B: Association between Playing Positions and Level of Awareness	106

LIST OF FIGURES

FIGURES	PAGES
Figure 1: Types of Bone Fracture	27
Figure 2: Anterior view of the knee joint showing dislocation	31

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Football, also known as soccer in some parts of the world, is a globally celebrated sport played between two teams of eleven players, with the primary aim of scoring goals by maneuvering a ball into the opposing team's net using any part of the body except the hands and arms (Oghumu *et al.*, 2025). Governed by the Fédération Internationale de Football Association (FIFA), football is recognized as the most popular sport globally, attracting massive participation at both professional and amateur levels (Krutsch *et al.*, 2021). Its simplicity, minimal equipment requirements, and capacity to foster teamwork and community engagement have contributed to its widespread appeal.

According to FIFA's 2006 Big Count report, over 265 million people actively engage in football worldwide, representing approximately 4% of the global population. The sport continues to gain momentum, especially in regions like Africa, where it transcends mere recreation and holds deep cultural and social significance (Chaabeni *et al.*, 2024). In Nigeria, football is arguably the most loved and widely played sport, cutting across all age groups, social classes, and regions (Makinde, Odimegwu & OlaOlorun, 2018). From grassroots football in rural areas to interfaculty and interuniversity competitions, young Nigerians, especially university students, participate enthusiastically in both organized and informal football matches. The sport's accessibility and straightforward rules contributed to its widespread adoption, making it a unifying force that cuts across age, social class, and regional divides (Owoeye *et al.*, 2017). Over the decades, football has not only provided entertainment and fostered national pride, but has also played a significant role in Nigeria's socio-political history, inspiring movements for political freedom and serving as

a symbol of unity and identity. Today, Nigeria is recognized as a powerhouse in African football, with a vibrant domestic league, a history of international successes, and a legacy of producing world-class football talent (Owonikoko & Rookwood, 2022).

Despite its benefits, football, like other sports, carries an inherent risk of injury. Sports injuries are physical traumas that occur during athletic activities or exercise (Timpka *et al.*, 2014). These injuries can range from minor strains and sprains to more serious musculoskeletal and neurological damage (Martens *et al.*, 2021). Globally, football is associated with a high incidence of injuries due to its dynamic and high-contact nature. It is estimated that football accounts for between 10% and 20% of all sports injuries, with an injury rate of approximately 8 injuries per 1,000 hours of play (López-Valenciano *et al.*, 2020). In Africa, where infrastructure, protective equipment, and medical support may be limited, the burden of football injuries is significant, though often underreported (Akodu *et al.*, 2012). Studies in Nigeria have revealed a high prevalence of musculoskeletal injuries among footballers, particularly in non-professional and amateur settings where adequate preventive strategies are often lacking but the exact incidence is unknown (Owoeye *et al.*, 2017).

Amateur football refers to the non-professional level of football where participants do not receive financial compensation for playing. It is often driven by passion, recreation, or talent development (Rommers *et al.*, 2022). In the university setting, amateur footballers include students who participate in football for leisure, fitness, departmental competitions, or university tournaments, without belonging to professional or elite squads. Despite the recreational nature of the activity, amateur footballers are susceptible to a range of injuries, including sprains, strains, fractures, and concussions and these injuries can have significant short-term and long-term

consequences, affecting not only the players' ability to participate but also their overall health and quality of life (Gurau, Gurau, Voinescu, *et al.*, 2023)

Injury prevention in football involves a comprehensive set of strategies aimed at reducing the occurrence, severity, and recurrence of sports-related injuries. These strategies include proper warm-up and cool-down routines, which prepare the muscles and cardiovascular system for activity and facilitate recovery post-exercise (Pérez-Gómez *et al.*, 2022). The use of protective gear such as shin guards, appropriate footwear with good grip, ankle braces, and mouth guards helps prevent common injuries like fractures, sprains, and facial trauma (Daneshvar *et al.*, 2011). Adequate hydration before, during, and after play is essential to maintain physical performance and prevent heat-related illnesses (Mohr *et al.*, 2021). Muscle strengthening programs, particularly targeting the core, hamstrings, and quadriceps, improve joint stability and reduce the risk of strains and ligament injuries, such as anterior cruciate ligament (ACL) tears. Flexibility training through regular stretching increases the range of motion and minimizes muscle stiffness, contributing to overall injury resistance (Beato *et al.*, 2021).

Furthermore, injury prevention also entails neuromuscular training including balance, coordination, and proprioceptive exercises that enhances body control and minimizes non-contact injuries, especially in the lower limbs (Hübscher *et al.*, 2010). Load management, or avoiding overtraining, is crucial to prevent overuse injuries such as tendinitis and stress fractures. This includes ensuring adequate rest periods between training sessions and monitoring the intensity and volume of play (Brenner, Watson, and Council on Sports Medicine and Fitness, 2024). Coaches and health professionals also emphasize the importance of biomechanical correction such as proper running and landing techniques to prevent abnormal stress on joints and muscles (Pérez-Gómez *et al.*, 2022).

These players may lack formal training or access to sports medicine professionals, increasing their vulnerability to preventable injuries (Sultanov, 2023). For amateur university footballers, awareness and practice of injury prevention strategies are particularly crucial. These individuals often juggle academics with sports, and injury may not only hinder their athletic involvement but also interfere with their academic performance and quality of life. A study by (Shata *et al.*, no date) found that student-athletes who suffered from injuries experienced higher levels of stress and anxiety related to their academic responsibilities. This suggests a potential link between sports injuries and the overall well-being and academic success of university students. Moreover, injuries can lead to social isolation as players may be sidelined from training sessions, matches, and social gatherings related to football. Additionally, amateur players may not always have immediate access to physiotherapists, athletic trainers, or structured injury prevention programs. As such, their knowledge and self-initiated practices play a critical role in minimizing injury risk (Sultanov, 2023).

At the University of Benin, football remains one of the most actively participated sports among students, particularly at the amateur level through departmental teams, inter-faculty competitions, and informal campus tournaments. Despite the enthusiasm and high participation, there is limited data on how well these student-athletes understand and apply injury prevention strategies. With the growing number of football-related injuries reported anecdotally across campus, assessing the level of awareness and practice among these amateur players is essential. Such findings can inform the development of targeted physiotherapy-led interventions to promote safer sports participation within the university environment.

1.2 Statement of the Problem

Football, while being the most widely played and enjoyed sport in Nigeria, is also associated with a high risk of injuries, particularly among amateur players who may lack formal training or access to sports medicine services (Owoeye *et al.*, 2017). Although the study by Owoeye *et al.* (2017) highlighted a high incidence of sports-related injuries among amateur footballers in Nigeria, it did not explore the extent of awareness or the actual implementation of injury prevention strategies within this population. This presents a critical gap, as understanding both knowledge and practice is essential for developing effective interventions aimed at reducing preventable injuries.

At the University of Benin, many students actively participate in amateur football through departmental leagues, friendly matches, and campus tournaments. However, these players often do so without adequate knowledge or application of evidence-based injury prevention strategies, increasing their susceptibility to musculoskeletal injuries that can impact both their athletic and academic performance. Despite the critical role of physiotherapists and other health professionals in promoting safe sports practices, to the best of the researcher's knowledge, there is limited research assessing the awareness and actual implementation of injury prevention measures among amateur footballers within Nigerian universities. The paucity of such data presents a gap in understanding the preparedness of student-athletes to protect themselves from preventable injuries. This is particularly concerning in settings like the University of Benin, where football remains a key form of recreation and student engagement.

1.3 Research Questions

This Study was designed to answer the following research questions:

- I. What was the level of awareness of injury risk and prevention among amateur football players in the University of Benin?
- II. What injury prevention strategies are used by amateur football players in the University of Benin?
- III. How frequently do amateur football players in the University of Benin use various injury prevention strategies?
- IV. What was the association between age group and the use of injury prevention strategies among amateur football players?
- V. How does sex influence the frequency of use of injury prevention strategies among amateur football players?
- VI. How does playing position relate to the use of injury prevention strategies among amateur football players?
- VII. What was the association between gender and the level of awareness related to injury risk and prevention among amateur football players?
- VIII. How does playing position influence the level of awareness related to injury risk and prevention among amateur football players?
- IX. What was the association between Socio-demographic characteristics (age, sex, and playing position) and both the use and level of awareness of injury prevention strategies among amateur football players in the University of Benin?

1.4 Aim of the Study

The aim of this study was to investigate the level of awareness and practice of sports injury prevention strategies among amateur football players in the University of Benin.

1.4.1 Specific Objectives

The Specific objectives of this study were:

- I. To assess the level of awareness of injury risk and prevention among amateur football players in the University of Benin.
- II. To identify the injury prevention strategies used by amateur football players in the University of Benin.
- III. To determine the frequency of use of injury prevention strategies among amateur football players in the University of Benin.
- IV. To examine the association between age group and the use of injury prevention strategies among amateur football players.
- V. To examine the association between sex and the frequency of use of injury prevention strategies among amateur football players.
- VI. To examine the association between playing position and the use of injury prevention strategies among amateur football players.
- VII. To assess the association between gender and the level of awareness related to injury risk and prevention among amateur football players.
- VIII. To assess the association between playing position and the level of awareness related to injury risk and prevention among amateur football players.

- IX. To explore the association between socio-demographic characteristics (age, sex, playing position) and both the level of awareness and use of injury prevention strategies among amateur football players in the University of Benin.

1.5 Hypothesis

1.5.1 Main Hypotheses

There would be no significant association between socio-demographic parameters (age, sex, playing position) and practice of sport injury prevention strategies among amateur football players in the University of Benin; as well as, there will be no significant association between socio-demographic parameters (age, sex, playing position) and each of the level of awareness and practice of sport injury prevention strategies among amateur football players in the University of Benin.

1.5.2 Sub Hypotheses:

- I. There would be no significant association between age group and the FIFA 11+ programme among amateur football players.
- II. There would be no significant association between age group and participation in a general warm-up programme among amateur football players.
- III. There would be no significant association between age group and movement preparation/sport-specific drills among amateur football players.
- IV. There would be no significant association between age group and strength training on the pitch among amateur football players.
- V. There would be no significant association between age group and strength training in a separate session among amateur football players.

- VI. There would be no significant association between age group and flexibility training on the pitch among amateur football players.
- VII. There would be no significant association between age group and flexibility training before or after training among amateur football players.
- VIII. There would be no significant association between age group and flexibility training in a separate session among amateur football players.
- IX. There would be no significant association between age group and sprint training among amateur football players.
- X. There would be no significant association between age group and cool down among amateur football players.
- XI. There would be no significant association between age group and use of a specific prevention protocol among amateur football players.
- XII. There would be no significant association between age group and balance and core stability training among amateur football players.
- XIII. There would be no significant association between age group and other prevention measures among amateur football players.
- XIV. There would be no significant association between sex and frequency of performing the FIFA 11+ programme.
- XV. There would be no significant association between sex and frequency of participation in a general warm-up programme.
- XVI. There would be no significant association between sex and frequency of movement preparation / sport-specific drills.

- XVII. There would be no significant association between sex and frequency of strength training on the pitch.
- XVIII. There would be no significant association between sex and frequency of strength training in a separate session.
- XIX. There would be no significant association between sex and frequency of flexibility training on the pitch.
- XX. There would be no significant association between sex and frequency of flexibility training before/after training.
- XXI. There would be no significant association between sex and frequency of flexibility training in a separate session.
- XXII. There would be no significant association between sex and frequency of sprint training.
- XXIII. There would be no significant association between sex and frequency of performing a cool-down.
- XXIV. There would be no significant association between sex and use of a specific prevention protocol.
- XXV. There would be no significant association between sex and frequency of balance and core stability training.
- XXVI. There would be no significant association between sex and frequency of other prevention measures.
- XXVII. There would be no significant association between playing position and frequency of performing the FIFA 11+ programme.
- XXVIII. There would be no significant association between playing position and frequency of participation in a general warm-up programme.

- XXIX. There would be no significant association between playing position and frequency of movement preparation / sport-specific drills.
- XXX. There would be no significant association between playing position and frequency of strength training on the pitch.
- XXXI. There would be no significant association between playing position and frequency of strength training in a separate session.
- XXXII. There would be no significant association between playing position and frequency of flexibility training on the pitch.
- XXXIII. There would be no significant association between playing position and frequency of flexibility training before/after training.
- XXXIV. There would be no significant association between playing position and frequency of flexibility training in a separate session.
- XXXV. There would be no significant association between playing position and frequency of sprint training.
- XXXVI. There would be no significant association between playing position and frequency of performing a cool-down.
- XXXVII. There would be no significant association between playing position and use of a specific prevention protocol.
- XXXVIII. There would be no significant association between playing position and frequency of balance and core stability training.
- XXXIX. There would be no significant association between playing position and frequency of other prevention measures.

- XL. There would be no significant association between gender and perceived risk of sustaining injury as a footballer.
- XLI. There would be no significant association between gender and the most common type of injury respondents are frequently exposed to.
- XLII. There would be no significant association between gender and the body part most exposed to injury.
- XLIII. There would be no significant association between gender and which injuries are most important to prevent.
- XLIV. There would be no significant association between gender and the perceived importance of preventing injuries.
- XLV. There would be no significant association between gender and the types of injuries footballers are exposed to.
- XLVI. There would be no significant association between gender and the common reasons for injuries reported by respondents.
- XLVII. There would be no significant association between gender and agreement with the statement “It’s more important to play than to do prevention.”
- XLVIII. There would be no significant association between gender and agreement with the statement “Coach’s motivation affects players’ motivation to prevent injuries.”
- XLIX. There would be no significant association between gender and respondents’ feelings about injury prevention strategies.
- L. There would be no significant association between gender and whether respondents received advice about injury prevention programmes.

- LI. There would be no significant association between gender and whether respondents performed injury prevention strategies this season.
- LII. There would be no significant association between gender and the types of injuries respondents tried to prevent.
- LIII. There would be no significant association between gender and the medical support available in the team.
- LIV. There would be no significant association between playing position and the perceived risk of sustaining injury as a footballer.
- LV. There would be no significant association between playing position and the most common type of injury footballers are frequently exposed to.
- LVI. There would be no significant association between playing position and the body part most exposed to injury.
- LVII. There would be no significant association between playing position and the type of injury considered most important to prevent.
- LVIII. There would be no significant association between playing position and the perceived importance of preventing injuries.
- LIX. There would be no significant association between playing position and the types of injuries footballers are exposed to.
- LX. There would be no significant association between playing position and the perceived common reasons for injuries.
- LXI. There would be no significant association between playing position and agreement with the statement “It’s more important to play than to do prevention.”

- LXII. There would be no significant association between playing position and agreement with the statement “Coach’s motivation affects players’ motivation.”
- LXIII. There would be no significant association between playing position and players’ feelings about injury prevention strategies.
- LXIV. There would be no significant association between playing position and whether players have received advice about injury prevention programmes.
- LXV. There would be no significant association between playing position and performance of injury prevention strategies during the current season.
- LXVI. There would be no significant association between playing position and the types of injuries players have tried to prevent.
- LXVII. There would be no significant association between playing position and the availability of medical support in the team.

1.6 Significance of Study

Significance to Students:

To Students, the study was expected to be highly beneficial. It helped uncover gaps in their current knowledge and practices concerning injury prevention, especially within the context of amateur football. By identifying these deficiencies, the study drove increased awareness and encourage students to adopt safer playing habits that reduce the risk of sports-related injuries. Ultimately, this promoted sustained participation in sports while ensuring their health and safety. Additionally, by minimizing injury-related disruptions, the study indirectly supports better academic outcomes for student-athletes.

Significance to Physiotherapists:

The findings of this study served as a valuable resource in planning and delivering injury prevention education tailored to the needs of student-athletes. It also emphasized the evolving role of physiotherapists beyond clinical treatment, underlining their contributions to prevention, education, and health promotion. Moreover, the study can open doors for increased collaboration between physiotherapists and university sports teams, creating more opportunities for involvement in athlete wellness and long-term performance enhancement.

Significance to the University of Benin:

The findings of this study contributed to improving student welfare by informing policies and practices related to sports health. The findings will also support the university's ongoing efforts to encourage safe recreational activities on campus, fostering a healthier environment for students. Furthermore, the outcomes of this research can guide the development of structured injury prevention programs that may be integrated into the university's sports and health curriculum.

Significance to the Body of Knowledge:

This study make a valuable contribution to the existing literature on sports injury prevention, particularly in the context of amateur football in Nigerian universities. It will provide a localized perspective that is often underrepresented in global research. The study also served as a useful reference for future academic work in the fields of physiotherapy, sports science, and public health. Additionally, the data generated may influence national-level discussions on student-athlete safety and shape the development of sports medicine initiatives in academic institutions across Nigeria..

1.7 Scope and Delimitation

This study comprised amateur football players in the University of Benin aged 18 years and above. The study would be delimited to the injury prevention questionnaire from a previous study (Geertsema et al., 2021).

1.8 Limitations of the Study

The limitation of this study included:

- I. The study relied on a self-administered questionnaire, which depended on participants' honesty and memory, thereby introducing possible response bias.
- II. The cross-sectional research design limited the ability to establish cause-and-effect Associations between awareness, practice, and actual injury occurrence.
- III. The study was conducted only among amateur football players in the University of Benin, which restricts the generalizability of the findings to other universities or competitive levels.
- IV. The study did not include direct observation or objective verification of injury-prevention practices, which could have provided more accurate evidence of actual behavior.
- V. Limited access to some players during training and match schedules may have affected response rates and the completeness of the data collected.

1.9 Definition of Terms

Amateur Football Players: Students who play football for recreation, fitness, or competition, but are not part of a professional football team or league (Gurau, Gurau, Musat, *et al.*, 2023).

Sports Injury Prevention Strategies: Techniques and methods designed to reduce the risk of injury during sports activities (Emery & Pasanen, 2019).

Level of Awareness: The degree to which individuals know or understand injury prevention strategies in football(Geertsema *et al.*, 2021).

Practice of Injury Prevention Strategies: The extent to which football players apply the knowledge of injury prevention in their actual football-playing behavior(van de Hoef *et al.*, 2022).

Football Injuries: Any physical harm or damage sustained during football activities(Gurau, Gurau, Voinescu, *et al.*, 2023a).

1.10 List of Abbreviations

FIFA – Fédération Internationale de Football Association

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Framework

This study is informed by the Health Belief Model (HBM), the Knowledge, Attitude, Practice (KAP) model, and the biopsychosocial approach. The HBM explains that individuals are more likely to adopt preventive measures if they perceive themselves to be at risk of injury, acknowledge its seriousness, and believe that prevention is beneficial, provided that barriers are minimal and self-efficacy is high (Glanz et al., 2015). In football, players' awareness of strategies such as warm-ups, stretching, and protective equipment is therefore shaped by these perceptions, while coaches and peers often act as important cues to action (Jones et al., 2023).

The KAP model supports this by highlighting that knowledge influences attitude, which in turn guides practice (Launiala, 2009). Thus, players who are well-informed about injury prevention are more likely to value it and apply it consistently in training and matches (Owoeye et al., 2020). Furthermore, the biopsychosocial model underscores that injury prevention is influenced not only by biological factors such as fitness and previous injuries, but also by psychological aspects like stress and confidence, and social influences such as academic demands and coaching support (Gouttebarga et al., 2023; Zhang et al., 2024).

Taken together, this framework assumes that awareness of injury prevention among amateur footballers influences their attitudes and ultimately their practices. This relationship is moderated by psychosocial and contextual factors, with coaches playing a central role as cues to action (Donaldson et al., 2016).

2.1.1 Sport Injury

A sports injury refers to any form of physical harm or dysfunction that occurs as a direct result of engaging in sports or physical exercise. These injuries can affect bones, muscles, tendons, ligaments, and other soft tissues and may result from acute trauma or repetitive stress. According to Brukner and Khan (2017), sports injuries are defined as “injuries that occur during participation in sports or exercise, either as a result of direct trauma or from repetitive overuse.”

This broad definition encompasses both contact and non-contact mechanisms of injury.

Meeuwisse and colleagues (2007) emphasized that sports injuries are “events that lead to tissue damage and impair performance or require medical attention or time loss from sport.” This perspective introduces the concept of injury severity and its impact on athletic participation, recognizing that even minor impairments can influence an athlete’s performance or training continuity.

The American Medical Society for Sports Medicine (AMSSM) defines a sports injury as “any musculoskeletal or head injury incurred during sports participation that limits performance, requires evaluation or treatment, or leads to time loss from activity” (Harmon et al., 2019). This definition not only considers physical harm but also its functional and clinical consequences.

In the context of sports medicine, the understanding of sports injuries has evolved beyond simple mechanical failure of tissues to include biomechanical, physiological, and behavioral components. Bahr and Krosshaug (2005) argue that a sports injury should be viewed as a complex interaction between internal (athlete-related) and external (environmental or sport-specific) factors that lead to tissue overload and breakdown.

Furthermore, sports injuries can be broadly classified into acute injuries, which occur suddenly due to a specific incident (e.g., a sprained ankle or fractured bone), and chronic or overuse

injuries, which develop gradually over time due to repetitive strain without adequate recovery (Khan et al., 2019). This classification helps distinguish between injuries that result from one-time trauma and those that stem from cumulative microtrauma.

Overall, the concept of sports injury encompasses a multifaceted range of conditions resulting from physical exertion, each requiring precise assessment and tailored management to ensure safe and effective recovery.

2.1.2 Epidemiology

Global Epidemiology

Sports injuries are a major public health concern worldwide, affecting athletes of all levels—from amateur to professional—and individuals engaged in recreational physical activities. According to the World Health Organization (WHO, 2021), approximately 20–40% of injuries sustained during physical activity are classified as sports-related, with musculoskeletal injuries accounting for a large proportion of these. The International Olympic Committee (IOC) has reported that elite athletes have an injury incidence rate of approximately 8–15 injuries per 1,000 hours of training or competition, although this varies widely depending on the sport (Soligard et al., 2016).

The most common types of sports injuries globally include sprains, strains, fractures, dislocations, and concussions, with lower extremity injuries (particularly the ankle and knee) being the most prevalent (Khan et al., 2019). Contact sports such as football (soccer), rugby, and American football are associated with a higher risk of traumatic injuries, while endurance sports like long-distance running are more often linked to overuse injuries.

Injuries are particularly prevalent among adolescents and young adults, as this group constitutes the most active participants in organized sports. A systematic review by Pfirrmann et al. (2016)

found that youth athletes have injury rates ranging from 0.5 to 13.2 per 1,000 hours of exposure, depending on the sport. Additionally, female athletes have shown a higher risk of specific injuries such as anterior cruciate ligament (ACL) tears in sports like basketball and soccer compared to their male counterparts (Hewett et al., 2006).

Epidemiology of Sports Injuries in Africa

Data on sports injuries in Africa remain limited due to underreporting, poor injury surveillance systems, and lack of standardized research protocols. Nevertheless, emerging studies have begun to highlight the burden of sports injuries across the continent. A review by Lambert and Finch (2010) noted that while sports participation is growing in Africa, particularly among youth, injury prevention and management systems are underdeveloped.

In South Africa, one of the most researched countries in Africa regarding sports injuries, studies have shown that rugby and football players experience high rates of musculoskeletal injuries, with contact injuries and concussions being especially common (Brown et al., 2013). A longitudinal study of elite schoolboy rugby players in South Africa reported an injury incidence of 21.7 per 1,000 player hours, with the majority of injuries involving the shoulder and head (Holtzhausen & Schweltnus, 2013).

Research in other African countries, though sparse, suggests similar trends. For instance, a study in Kenya involving amateur soccer players found that the most common injuries were sprains and strains of the lower limbs, primarily due to poor playing surfaces and lack of protective equipment (Ong'olo et al., 2018). These findings indicate that infrastructural and socioeconomic factors may play a significant role in injury patterns across the continent.

Epidemiology of Sports Injuries in Nigeria

In Nigeria, sports injuries are increasingly being recognized as a public health issue, particularly among young athletes and students in secondary schools and universities. A study by Owoeye, Aiyegbusi, and Fapojuwo (2013) investigating Nigerian university athletes reported an injury prevalence of 57%, with lower limb injuries, especially to the knee and ankle, being the most frequent. Most of these injuries were due to contact and occurred during football, athletics, and basketball events.

A more recent study by Owoeye et al. (2020) evaluated injuries during the Nigerian University Games Association (NUGA) competitions and found an overall injury incidence rate of 12.3 per 1,000 athlete exposures. The majority of these injuries were acute in nature, with soft tissue injuries dominating, and football accounting for the highest injury burden. Notably, the study highlighted deficiencies in on-site medical care and post-injury rehabilitation services, reflecting broader challenges in Nigeria's sports healthcare system.

Moreover, there is growing concern about the lack of preventive strategies and awareness programs aimed at reducing sports injuries in Nigeria. The majority of Nigerian sports programs at institutional and community levels lack proper medical personnel, injury surveillance, and rehabilitation protocols (Anugweje, 2007). Consequently, many injured athletes either do not report their injuries or fail to receive adequate treatment, leading to long-term consequences such as chronic pain and reduced physical performance.

2.1.3 Categories of Sport Injury

From macro perspective, sport injury can be categorized into the following, regardless of the specific structures affected (Klüglet *al.*, 2010).

- Acute injury

- Chronic injury

Acute Injury: Acute injury refers to a sudden and typically traumatic injury that occurs suddenly or within a short period of time. (American Academy of Orthopedic Surgeons, 2017). These injuries are characterized by a rapid onset and are often the result of a specific incident or event and can affect various parts of the body including muscles, bones, joints, ligaments and tendons (Brukner & Khan, 2012).

Acute injuries can result from accidents, falls, collisions or other sudden impacts (Brukner & Khan, 2012) and are common during sports and may require immediate attention and intervention such as first aid, and medical rehabilitation (Eime *et al.*, 2016). The severity of acute injuries can vary ranging from bruises and strains to more serious conditions like fracture and ligament tear (Brukner & Khan, 2012).

Examples of acute injuries include; Fracture, Sprains, Strains, Dislocation, Contusions (Brukner & Khan, 2012)

Signs of Acute Injury

The signs of acute injuries include the following; Swelling, Sudden severe pains, Inability to place weight on lower limbs, Extreme tenderness in an upper limb, Inability to move a joint through its full range of motion, Extreme limb weakness, Visible dislocation or break of bone

Chronic Injury: Chronic injury refers to conditions that develop over an extended period and are often associated with repetitive stress or overuse of a particular body part (Brukner & Khan, 2012). Chronic injury manifests gradually and it is often characterized by persistent, ongoing discomfort or pain and can impact various structures of the body such as muscles, tendons, ligaments and bones (Wang *et al.*, 2012).

Chronic injuries can be the result of repeated, prolonged stress on a specific area, inadequate recovery time or poor biomechanics (Wang *et al.*, 2012) According to Klüglet *al.*, 2010, managing chronic injury typically results from overusing one area of the body while playing a sport or exercising over a long period of time furthermore, it involves multifaceted approach including rest, rehabilitation exercises, bio-mechanical assessment and sometimes medical interventions.

Examples of chronic injuries include; Stress fracture, Tendinopathies, Overuse syndromes, Tennis elbow, Runner's knee ,etc.

Signs of Chronic Injury

The signs of chronic injuries includes the following; Pain when performing an activity, A dull ache when at rest, Swelling

2.1.4 Common Types of Sport Injury

The following are the common types of sport injury; Fracture, Dislocation, Strain, Sprain, Laceration, Abrasions, Achilles Tendonitis, Concussion.

2.1.4.1 Fracture

A fracture is a break or crack in a bone, it occurs due to trauma, excessive force, or underlying medical conditions that weaken the bone (Canada & Anderson, 2016). When fracture occur either from a quick or one-time injury, it is known as acute fracture. When fracture occurs from repeated stress, it is known as chronic fracture (Hiddleston, 2019).

Types of Fracture

Simple (Closed) Fracture: This type of fracture doesn't break the skin. The bone is broken, but the skin remains intact (Rosselló & Elices 2004).

Compound (Open) Fracture: In this type, the broken bone pierces through the skin. This can lead to a risk of infection because the bone is exposed to the outside environment (Rosselló & Elices 2004).

Transverse Fracture: The break is a straight horizontal line across the bone (Rosselló & Elices 2004).

Oblique Fracture: The break has an angled pattern (Rosselló & Elices 2004).

Spiral Fracture: The break spirals around the bone, often caused by twisting injuries (Suzukiet al., 2009).

Comminuted Fracture: The bone shatters into three or more pieces. This can be more difficult to treat and may require surgery (Rosselló & Elices 2004).

Greenstick Fracture: This type of fracture is more common in children, where the bone bends and cracks but doesn't completely break. It's similar to breaking a green stick; the bone is not completely broken (Suzukiet al., 2009).

Compression Fracture: This type of fracture involves the bone being crushed, often seen in vertebrae. Osteoporosis can lead to compression fractures in the spine (Rosselló & Elices 2004).

Avulsion Fracture: A small piece of bone is pulled off by a tendon or ligament. This can happen during sudden, forceful movements (Suzukiet al., 2009) .

Hairline Fracture: Also called a stress fracture, this is a tiny crack in the bone. It's often difficult to see on X-rays and can develop over time due to repetitive stress or overuse.(Rosselló & Elices 2004).

Pathologic Fracture: This occurs when a bone is weakened by an underlying condition, such as osteoporosis or cancer. The bone may break with minimal force (Rosselló & Elices 2004).(Figure 1)

Types of Bone Fractures

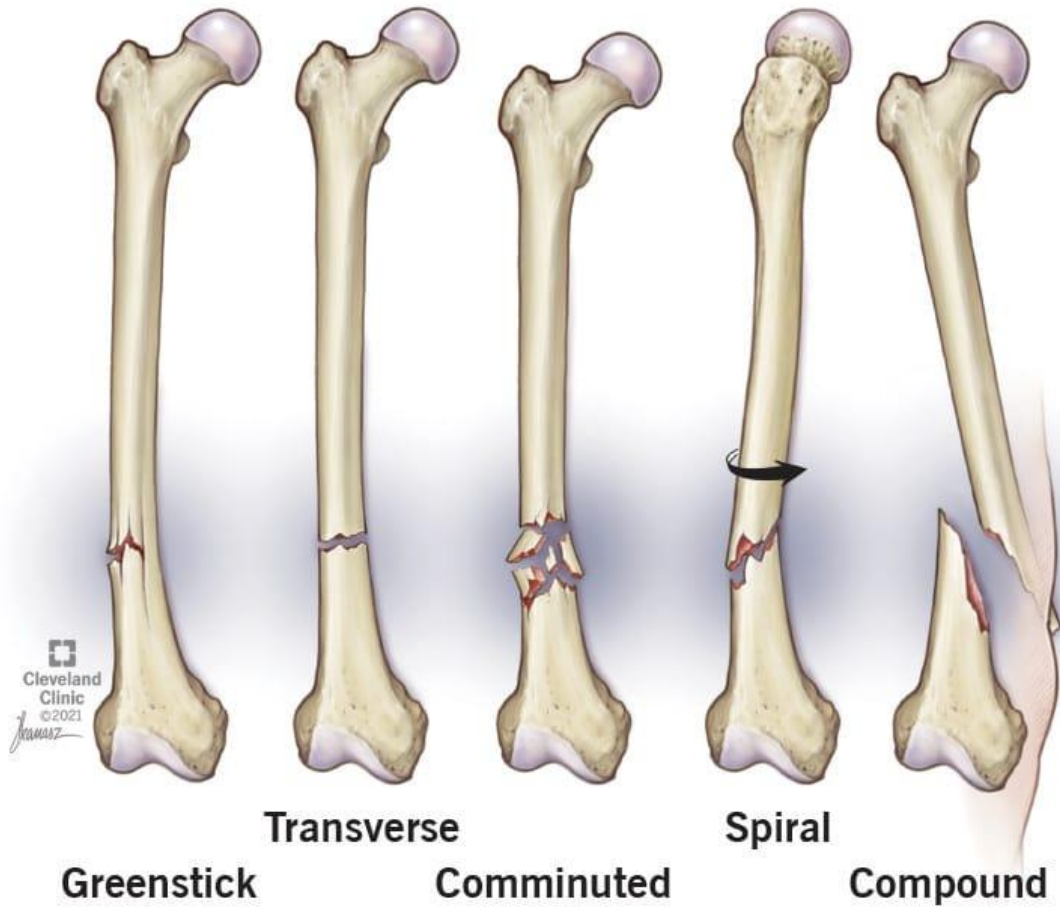


Figure 1: Types of Bone Fracture

Image source: my.clevelandclinic.org

Fracture: These are tiny cracks in a bone caused by repetitive force or overuse, common in athletes or those who engage in repetitive activities (Rosselló & Elices 2004).

The type of fracture can affect treatment and healing time, so it's important to get an accurate diagnosis from a medical professional (Suzuki *et al.*, 2009).

Signs of Fracture

Includes; Intense pain at the sight of the injury, Swelling around injured area, Visible deformity or abnormal positioning of the affected limbs or joints, Bruises around the injured area, Difficulty moving affected limb, Increased sensitivity or tenderness when touching or applying pressure to the injured area (America Academy of Orthopaedic Surgeons, 2012).

Causes of Fracture

Direct trauma or forceful impact to a bone, often resulting from falls, accidents, sport injuries or physical altercations (American Academy of Orthopaedic Surgeons, 2017); Repeated stress on a bone over time, particularly common in athletes or individuals engaged in repetitive activities (Hiddleston, 2019); Diseases or conditions that weaken bones such as cancer, osteogenesis imperfecta or bone infections (Dhillon & Bali, 2017); Weakness of the bone due to loss of density, making them more susceptible to fractures, especially in older individuals (osteoporosis); Lack of essential nutrients, particularly calcium and vitamin D, can weaken bones, making them more susceptible to fractures (Rizzoli, 2014); Genetic factor can result to bone fracture. This is because inherited conditions can affect bone strength and structure increasing the risk of fractures (Bonjour, 2009).

2.1.4.2 Dislocation

A dislocation is an injury in which the ends of the bone are forced out of their normal positions and this is usually caused by trauma resulting from a fall, an auto accident or a collision during contact or high speed sports (Beers *et al.*, 2004). Dislocation usually involves the body's larger joints. In adults, the most common site for dislocation is the shoulder, while in children, it is the elbow. A dislocation requires prompt medical attention to return the dislocated bones to their proper positions (Beers *et al.*, 2004).

Types of Dislocation

Healthcare providers classify dislocations based on how far the bones in the joints were moved (Thompson *et al.*, 1989) Like;

Complete dislocations (luxation): A complete dislocation happens when the bones in your joint are totally separated and pushed out of place (Cleveland clinic, 2021).

Subluxation: Subluxation is the medical term for a partial dislocation. You have a subluxation if something pulls your joint apart and the bones still touch, just not as completely as usual (Cleveland clinic, 2021). Joints frequently dislocated includes; Hip joint, shoulder, Elbow joint, knee joint, finger, Toe, jaws etc. (Mayo Clinic, 2021).

Hip Dislocation: This results when the ball and socket hip joint is disrupted with the femoral head coming out of the acetabulum (Mayo Clinic, 2021).

Shoulder Dislocation: This happens when the Humerus is forced out of the shoulder socket (Glenoid) (Mayo Clinic, 2021).

Elbow Dislocation: This is the displacement of the bones in the elbow joint, often involving the radius and ulna (Mayo Clinic, 2021).

Knee Dislocation: A rare but severe injury where the bones of the knee joint lose their normal alignment. (Mayo Clinic, 2021).

Finger Dislocation: This is the displacement of the bones within the fingers (Cleveland clinic, 2021).

Toe Dislocation: This is the displacement of the bones within the toe joint. (Mayo Clinic, 2021).

Signs of Dislocation

Include; Visible deformity or misalignment of the affected joint, Intense pain at the affected region, often exacerbated by movement, Swelling and inflammation around the dislocated joint, Limited ability to move the joint in the usual direction of movement, Bruising or discolouration around the dislocated joint, Weakness of the affected limb or joint (Mayo Clinic, 2021)

Causes of Dislocation

include: Involvement in contact sports, where direct hits or falls can result in joint dislocation (Thompson et al., 1989), Forceful twisting of joints or collisions of high impacts that can force joints out of their normal positions (Court-Brown & Caesar, 2019), Falls from heights or slips that results in awkward landing can cause joint dislocation (Canada & Anderson, 2016), Violent muscle contraction during seizures or other medical conditions can lead to dislocations (Li & Luo, 2018), and in some cases individuals may be more prone to dislocations due to congenital factors affecting joint stability (Rouhaniet al., 2016) (Figure 2)



Figure 2: Anterior view of the knee joint showing dislocation

Image source: my.clevelandclinic.org

2.1.4.3 Strain

A strain is a twist, pull or tear of a muscle or tendon, a cord of tissues connecting muscles to bones furthermore, It is an acute, non-contact injury that results from over stretching or over contraction (Brukner & Khan 2012). Like sprains, strains can range from a minor stretch to a partial or complete tear of a muscle or tendon. This is most common in muscles or tendons between two joints (Biundo, 2020).

Types of Strain

The most commonly experienced strains include;

Lumbar Strain: This is an injury to the lower back, which results in damaged tendons and muscles that spams or feel sore (Brukner & Khan 2012). Pushing and pulling sports such as weight lifting nor football can lead to lumbar strain. In addition, sports that need sudden twisting of the lower back, such as basketball, baseball and golf can lead to this kind of injury (Brukner& Khan 2012).

Medial Epicondylitis: Medial Epicondylitis, also known as golfer's elbow is characterized by pain from the elbow to the wrist on the palm side of the fore arm and this pain is caused by damage to the tendons that bend the wrist towards the palm (Mayo clinic, 2021).

Lateral Epicondylitis: Lateral epicondylitis also known as tennis elbow, is characterised by pain in the backside of the elbow and forearm, along the thumb side when the arm is alongside the body with the thumb turned away (Whaley & Baker, 2004). The pain is caused by damage to the tendons that bend the wrist backward away from the palm (Mayo clinic, 2021).

Jumper's Knee: Jumper's knee, also known as patellar tendonitis is a condition characterized by inflammation of the patellar tendon which connects the knee cap to shin bone (tibia)

(Tiemessen *et al.*, 2009). This condition may be caused by overuse of the knee joint, such as frequent jumping on hard surfaces (Mayo clinic, 2021).

Strains can however be categorized as follows;

Grade 1 Strain: This type of strain results from a mild damage to the muscle fibres, less than 5% of fibre that causes minimal loss of strength and motion (Pollock *et al.*, 2014).

Grade 2 Strain: This type of strain result from more extensive damage with more muscle fibres involved, However, the muscle is not completely ruptured and these injuries result in significant loss of strength and motion (Pollock *et al.*, 2014).

Grade 3 Strain: This type of strain results from the complete rupture of the muscle (Pollock *et al.*, 2014). These can present with palpable defect in the muscle or tendon. However, swelling in the area may make this difficult to appreciate and these injuries sometimes require surgical operation to reattach the damaged muscles and tendons (Pollock *et al.*, 2014).

Signs of Strain

Include; Pain or tenderness at the of strain, Discoloured or bruised skin, Limited motion, Swelling around the affected area, Weakness of the muscle and muscle spasm (Biundo, 2020)

Causes of Strain

Include; Too much physical activities or prolonged repetitive movement causing fatigue and straining the muscle (American Academy of Orthopaedic Surgeons, 2012), Improper warming up before a physical activity, Poor flexibility, Rapid and forceful twisting or stretching motions that exceed the muscles normal capacity (WebMD, 2021)

2.1.4.4 Sprain

This is the stretching or tear of the ligament, the band of connective tissues that joins the end of one bone with another (Mattacola & Dwyer 2012). Minor sprain cause minimal to no swelling and do not affect mobility, whereas severe sprain can result in complete tear with extreme pain and widespread swelling. Sprained ligaments can take six to twelve weeks to heal fully (Bird *et al.*, 1997)

Types of Sprain

Any joint supported by ligament can be sprained. The most commonly sprained joints are; Ankle, Wrist, Knee, Finger (Maffulliet *al.*, 2011).

However, just like strain, sprain can be categorized into the following;

Grade 1 Sprain: This is a mild sprain with some damage to the ligament. With rest and ice, it may heal on its own (Maffulliet *al.*, 2011).

Grade 2 Sprain: This is a moderate sprain which means that there could be partial tear of the ligament. The joint is somewhat unstable and might need immobilisation such as with a walking boot or wrist splint (Maffulliet *al.*, 2011).

Grade 3 Sprain: This is a complete tear of the ligament, which can mean the joint is very unstable. The worst grade 3 sprain may need surgery to repair a torn ligament (Maffulliet *al.*, 2011)

Signs of Sprain

Include; Intense pain at the site of the sprain, Swelling and inflammation around the injured area, Bruising or dislocation, Feeling of joint instability, difficulty moving the injured joint or limb, Hearing or feeling a popping sound at the time of the injury (WebMD, 2021)

Causes of Sprain

The causes of sprain includes common sports that involve rapid change in direction, jumping or physical contact such as football or basketball (American Academy of Orthopaedic Surgeons, 2017), landing incorrectly after a jump, especially when the feet are not positioned correctly (WebMD, 2021), forceful impacts during sports such as collisions, tackles or contact with players (WebMD, 2021), stretching a joint beyond it's normal range of motion, commonly seen in activities that involve sudden changes in direction (WebMD, 2021), sudden twists, falls or impacts that force a joint into an abnormal position, causing ligament to stretch or tear (American Academy of Orthopaedic Surgeons, 2017).

2.1.4.5 Laceration

Laceration is caused by rupture of blood vessels close to the skin (Tlouganet *al.*, 2011). External haemorrhage occurs when the skin and deeper tissues are cut, punctured or scraped and depending on the depth and severity of the cut, bleeding may result and needs to be stopped early enough (Hallock, 2012). It is also important to clean the wound to prevent it from becoming infected as athletes, particularly those involved in contact sports or activities with the risk of falls or collision may be susceptible to cuts (Capellan & Hollander, 2003).

Types of Laceration

Shallow or Superficial Laceration: This is a laceration that affects only the outer layers of the skin without penetrating deeper tissues (Forsch & williams 2017).

Deep Laceration: This is a laceration that extends into deeper layers of the tissues, potentially involving muscles, tendons or even bones (Forsch & williams 2017).

Signs of Laceration

Include; Visible break or opening in the skin often with well-defined edges, Bleeding. The severity of the bleeding vary based on the depth and size of the wound, Pains especially if nerve endings are affected, Swelling around the surrounding of the cut, Underlying tissues such as muscles, tendons or nerve may be damaged (American College of Emergency Physicians, 2004).

Causes of Laceration

Contacts with sport equipment, collisions with other players or falling during sports (American College of Emergency Physicians, 2004), Persistent friction against a rough surface, leading to abrasions that may progress to laceration (American College of Emergency Physicians, 2004, Contacts with sharp objects like knives, broken glass or any object with a cutting edge (American College of Emergency Physicians, 2004), Impacts from blunt objects or surfaces that may cause tearing or crushing of the skin (American College of Emergency Physicians, 2004).

2.1.4.6 Abrasion

Abrasions are superficial injuries to the skin caused by friction, rubbing or scraping against a rough surface and it involves the removal of the top layer of the skin, known as the epidermis (Derler *et al.*, 2015). Abrasion is considered a minor injury though it can cause pain and discomfort and expose the underlying layers of the skin to disease infection (Cleveland clinic, 2021).

Types of Abrasion

Linear Abrasion: This damage to the skin in a line-like pattern. It is the result of sharp, pointed object like a thorn making contact with the skin. Linear abrasion is also known as scratch (Miller & Stracciolini, 2015).

Grazed Abrasion: This is a skin damage caused by your skin making contact with or dragging across a rough surface. This type of abrasion can cover a large area of one's skin. An example would be a skinned knee. Grazed abrasion is also known as brushed abrasion. (Miller & Stracciolini, 2015).

Patterned Abrasion: This is a skin damage caused by an object forcefully making direct contact with the skin and rubbing against it. The wound on your skin matches the size and shape of the object that your skin touched (Miller & Stracciolini, 2015).

Signs of Abrasion

Include; Mild pain and swelling, Light bleeding, Skin discoloration, Fluid leaking from the wound (Cleveland clinic, 2021).

Causes of Abrasion

Friction during sport or activities with repetitive movements can cause abrasions (Bahr & Engebretsen, 2009), Abrasion can result from contact with rough surfaces such as asphalt, concrete or rough textiles (James *et al.*, 2020), Accidental falls or collision with hard objects can lead to skin abrasion (Ferringier & Miller, 2006), Exposure to harsh chemical may cause abrasion and skin irritation (Baranet *al.*, 2016)

2.1.4.7 Tendonitis

Tendonitis (also spelled tendinitis) refers to the inflammation or irritation of a tendon, which is the fibrous connective tissue that connects muscle to bone. It is typically a result of overuse or repetitive strain, leading to pain and restricted movement in the affected area. Tendonitis can occur in any tendon but is most commonly seen around joints such as the shoulder, elbow, wrist, hip, knee, and ankle (Khan et al., 2000).

Types of Tendonitis

Tendonitis is classified based on the location of the affected tendon. Common types include:

Rotator Cuff Tendonitis (Shoulder):

Affects the tendons of the shoulder rotator cuff muscles.

Common in people who perform overhead movements (e.g., swimmers, painters).

Often associated with impingement syndrome.

Lateral Epicondylitis (Tennis Elbow):

Involves the tendons on the outside of the elbow.

Common in tennis players or anyone performing repetitive gripping activities.

Medial Epicondylitis (Golfer's Elbow):

Affects tendons on the inside of the elbow.

Common in golfers and people who use wrist flexion repetitively.

Achilles Tendonitis:

Affects the tendon connecting the calf muscles to the heel bone.

Common in runners and those who wear improper footwear or increase activity too quickly.

Patellar Tendonitis (Jumper's Knee):

Involves the tendon connecting the kneecap (patella) to the shinbone.

Frequently seen in athletes who engage in jumping or running sports.

De Quervain's Tenosynovitis:

Involves the tendons on the thumb side of the wrist.

Common in new mothers, people who lift infants, or those with repetitive thumb movements.

Signs and Symptoms of Tendonitis

The symptoms of tendonitis can vary depending on the location but typically include: Localized pain at the tendon, which worsens with movement or activity, Swelling and possible redness over the affected area, Tenderness to touch along the tendon path, Reduced range of motion in the nearby joint, A creaking or grating sensation (crepitus) with movement in some cases, Weakness in the associated muscle if the inflammation is severe

Early diagnosis and intervention can prevent progression to more chronic conditions such as tendinosis or tendon rupture.

Causes of Tendonitis

Tendonitis usually results from repetitive motion or overuse of a particular tendon, but it can also arise from other factors, including: Repetitive Strain or Overuse: Frequent, repetitive movements (e.g., typing, lifting, sports) place stress on tendons, Sudden Increase in Physical Activity: Rapid escalation in training intensity, duration, or frequency can overload tendons, Poor Biomechanics: Faulty movement patterns, improper posture, or poor technique during activities can increase tendon strain, Improper Equipment or Footwear: Using the wrong tools or wearing unsupportive shoes can alter loading mechanics, Age-related Degeneration: Tendons lose elasticity and become more prone to inflammation with age, Underlying Medical Conditions: Conditions like rheumatoid arthritis, diabetes, or gout can predispose individuals to tendon inflammation, Trauma: Direct injuries to a tendon (e.g., fall, impact) can trigger acute tendonitis.

2.1.4.8 Concussion

Sports related concussion is becoming one of the most common type of mild traumatic brain injury among youth who participate in organized sports. According to the American Academy of Orthopedic Surgeons, symptoms are not always obvious and may not present immediately after

the injury (Khurana & kaye, 2012). Symptoms of Concussion are: Balance Problems and Dizziness, Changes in sleep patterns, Confusion, Depression, Difficulty speaking and communicating, Drowsiness, Headache, Irritability, Loss of consciousness, Memory loss, Nausea and vomiting (Khurana & kaye, 2012).

Treatment:

If you suspect that you, your child, or close relative of your family or someone close by has experienced a concussion, there are basic steps you can take to stay safe (Kelly & Rosenberg 1997). Expert doctor has to be contacted immediately and at the same time if you are with someone who has experienced a head injury, stay nearby if they are unconscious then stabilize the head and neck and stop any bleeding with a clean cloth (Khurana & kaye, 2012). Do not apply pressure with the cloth if you suspect a skull fracture. If the person begins vomiting roll them onto their side.

2.1.5 Factors That Lead to Sport Injury

There is potential risk in sporting activities, because of their very physical nature (Emery & Pasanen 2019). Body parts may be injured and most of these involve the musculo-skeletal system such as the bones, joints, and soft tissues (Brewer 2007). Identifying the factors that predisposes athletes to injury is very important because, there will be a greater chance of injury prevention of the factors are identified and averted (Emery & Pasanen 2019). The following are some factors that leads to sport injury.

Environmental Factors: These are potential risk factors inducing injuries during sports. Injuries may occur if one is unaware of the environmental factors (Emery *et al.*, 2005).

Weather: Weather is the condition of the atmosphere over a long period of time. High temperature and humidity will hinder heat dissipation. This may cause heat cramps, heat

exhaustion and heat stroke (Emery *et al.*, 2005). Cold condition is associated with hypothermia. Raining or very high relative humidity can lead to a lack of movement control, Furthermore, the chance of suffering from stress induced by air pollution is higher for people with respiratory or cardiovascular diseases (Emery *et al.*, 2005).

Facilities and Equipment: Sport facilities and equipment are different depending on the nature of sport and enough space is needed for sport (Emery *et al.*, 2005). We should consider the materials and hardness of the floor surface to prevent injuries (Emery & Pasanen 2019). Sport facilities and equipment like goal posts, should be regularly checked and maintained in a good condition to ensure they meet the necessary safety requirements (Emery *et al.*, 2005).

Economic Factors: Economic factors can contribute in no small measures to injury sustainment by sport athletes (Pollinder *et al.*, 2012). The financial status of sport teams render them incapacitated to provide the necessary support equipment to prevent injuries (Pollinder *et al.*, 2012).

Unemployment: Many youths in poor and underdeveloped countries are not gainfully employed. This has impacted in their sport behaviour. Unemployed individuals face challenges in accessing good health care and acquiring protective sport kits that prevent injuries due to financial constraints (Lutteret *al.*, 2022). In addition, unemployment often brings about psychological stress, which can affect the athletes focus, concentration and decision-making abilities during training and competition, thereby exposing the individual to injury (Lutteret *al.*, 2022).

Lack of Fund and Poverty: Many sports teams especially in sub Saharan Africa lack proper funding and grants from sport interventionist agencies to fund sporting activities. Since football clubs cannot provide basic training equipment to club members, players become

exposed to sustaining injury during play (Lutteret *al.*, 2022). Also, poverty is strife in Africa and often times it affects the psyche, behaviour and concentration of players towards prevention of sport injury, especially as most players cannot afford to buy sport protective gear by themselves (Lutteret *al.*, 2022).

Nutrition: Nutrition plays a critical and crucial role in an athlete's overall health and performance. Poor nutrition can contribute to various factors that increase the risk of sport injuries (Michaels-Igbokweet *al.*, 2019). Good diet with regular exercise makes one fit. Injury is more likely to occur when the fitness level in contact sports like football, basketball rugby does s (Michaels-Igbokweet *al.*, 2019). .

Social Factors: Societal factors can play a significant role in influencing sports injuries among athletes in the following ways;

Peer Influence: Athletes may be influenced by their friends in terms of training intensities, risk taking behaviours or adherence to injury prevention practices (Michaels-Igbokweet *al.*, 2019). Negative peer influence like ignoring the use of protective gear during sports can contribute to injury risk.

Cultural Leanings: Cultural attitudes that encourage athletes to endure pain or play through injuries can lead to delayed treatment and exacerbation of injuries s (Michaels-Igbokweet *al.*, 2019). The stigma associated with reporting pain may contribute to persistence of injuries. Some cultural norms, holds that female athletes who are injured should not be given first aid by male counterpartss (Michaels-Igbokweet *al.*, 2019).

Coaching Styles and Communication: The coaching style and communication approach adopted by coaches can impact on athlete's stress level (Pollinder *et al.*, 2012). Negative

coaching styles, including harsh criticism or lack of encouragement, may contribute to heightened stress, affecting performance and injury risk (Pollinder *et al.*, 2012).

Illiteracy: Illiterate may have difficulty comprehending safety guidelines, including proper techniques and use of sport equipment to prevent injury (Pollinder *et al.*, 2012). There is the tendency of illiterates may lack access to good educational materials on injury prevention, proper nutrition and recovery strategies. Lack of awareness about these subjects can contribute to higher risk of injury (Pollinder *et al.*, 2012).

Increased Expectations: The pressure to perform well, whether from coaches, teammates or family and friends can lead athletes to push themselves beyond their limits physically. This can result in fatigue, over training and increased risk of injuries.

2.1.6 Effects of Sport Injury

Sports injuries can have significant physical, psychological and socio-economic effects on athletes. The following are the common effects of sport injury on athletes;

Health Effects:

Death: Some sports injuries may lead to chronic conditions, impacting an athlete's health and well-being in the long term and when it deteriorates further, could lead to death (Pearson & Jones 1992) .

Permanent Incapacitation: Injuries, especially those affecting joints, may contribute to the early onset of arthritis or other degenerative conditions. Some injuries if not well attended to could even lead to incapacitation permanently of the athlete (Pearson & Jones 1992) .

Physical Effects:

Pain and Discomfort: Athletes may experience mild or severe pains, affecting their ability to participate and perform well in sports and daily activities (Pearson & Jones 1992).

Impaired Mobility: Injuries can lead to reduced range of motion, muscle weakness, and limitations in movement (Pearson & Jones 1992).

Limitations of Functions: Athletes may face challenges in performing certain physical activities or functions due to the impact of the injury (Pearson & Jones 1992).

Psychological Effects:

Emotional Distress: Injuries can cause emotional distress, including frustration, sadness, and anxiety, especially if they lead to a break in regular training or competition (Hagel & Meeuwisse 2004).

Lack of Confidence: Injuries may cause athletes to lose confidence in their abilities physical activities, Furthermore, Athletes may also develop fear of having injury, thus affecting their performance, and willingness to push themselves during training or competitions (Hagel & Meeuwisse 2004).

Loss of Identity: For some athletes, sports are a significant part of their identity. Injuries that disrupt their ability to participate can lead to a sense of loss and identity crisis (Hagel & Meeuwisse 2004).

Social Effects:

Isolation: Athletes may feel isolated from their team or sports community during the recovery period, potentially impacting their social connections (Pearson & Jones 1992).

Changes in Relationships: The stress of dealing with an injury can strain relationships with coaches, teammates, and family members (Pearson & Jones 1992).

Decreased Social Activities: Participation in social activities outside of sports may decline due to the physical limitations imposed by the injury (Pearson & Jones 1992).

Financial Effects:

Medical Expenses: Treatment of injured athletes can lead by to significant medical expenses, especially if the athlete lacks comprehensive health insurance coverage Hagel & Meeuwisse 2004).

Loss of Income: Professional athletes may experience financial strain due to potential loss of income during injury-related absences from competitions (Hagel & Meeuwisse 2004).

Career Effects:

Under Performance: Athletes may experience a decline in performance, affecting their competitiveness and achievement of personal goals (Hagel & Meeuwisse 2004).

Decline in Career Prospect: Severe or recurrent injuries can jeopardize an athlete's career, leading to setbacks, missed opportunities, and potential retirement (Hagel & Meeuwisse 2004).

2.1.7 Ways of Preventing Sport Injury

Preventing sports injuries involves a combination of proper preparation, training techniques, equipment use, and awareness (Emery & Pasanen 2019). Here are key ways to prevent sports injuries:

Warm-Up and Cool Down: Warm-up exercises before commencement of sports helps to increase blood flow and flexibility and incorporate a cool-down routine to gradually lower heart rate and stretch muscles post-activity (Zech & Wellmann 2017). A warm-up exercise gradually

increasing your heart rate and loosening your muscles and joints. Once your body is warm, do some stretching to increase flexibility. Increase your range gradually (O'Brein & finch 2017). This will help decrease your chance of injury. When ending your exercise, remember to cool down with slow, gentle stretching (Zech &Wellmann 2017).

Hydration: Maintain proper hydration before, during, and after exercise to prevent dehydration, which can contribute to fatigue and injuries furthermore, Adjust fluid intake based on activity intensity and duration (O'Brein & finch 2017). Sport performance is usually affected when up to 3% of body weight is loss dues to fluid loss and this is why adequate hydration is an important part of preparing for sports activity or training in any climate and will help you avoid heat illnesses and injury, and as well as enhance performance (O'Brein & finch 2017).

Nutrition: Consume a well-balanced diet rich in nutrients to support overall health and optimize performance and also pay attention to nutrient timing, especially pre- and post-exercise nutrition (Wang *et al.*, 2012). Eat fruits and vegetables high in water content such as cucumber, strawberries and watermelon. Vital nutrients such as potassium and sodium are depleted as you sweat (Zech &Wellmann 2017). Consume salty snacks to replace sodium along with potassium-rich foods such as bananas and sweet potatoes (Wang *et al.*, 2012).

Use of Appropriate Protective Sport Wear: Wear proper footwear designed for your sport to provide adequate support and reduce the risk of foot and ankle injuries. Ensure equipment is well-maintained, properly fitted, and meets safety standards, this will help reduce the risk of injury (Zech &Wellmann 2017).

Regular Health Check-ups: Undergo regular medical check-ups to identify and address any underlying health issues that may affect sports participation. Consult with healthcare professionals for advice on injury prevention (Zech &Wellmann 2017).

Rest and Recovery: Allows adequate time for rest and recovery between intense training sessions or competitions. Prioritize sleep for overall health and recovery (Zech &Wellmann 2017).

Strength and Conditioning: Include strength and conditioning exercises in your routine to build muscle strength and improve joint stability. Target specific muscle groups related to your sport (Zech &Wellmann 2017).

Injury Awareness and Reporting: Be aware of common injury patterns in your sport. Report any pain, discomfort, or changes in physical condition to coaches, trainers, or healthcare professionals promptly (Zech &Wellmann 2017).

Environmental Considerations: Consider environmental factors such as weather conditions and playing surfaces. Adjust activities accordingly to minimize the risk of weather-related or surface-related injuries (Zech &Wellmann 2017).

Gradual Progression: Avoid sudden increases in training intensity, duration, or frequency (Zech &Wellmann 2017).

Gradually progress in training to allow the body to adapt and strengthen over time (Zech&Wellmann 2017).

Education: Education of athletes on the need to be safety conscious and on the benefits of staying injury-free can raise awareness on athletes and guide them to be injury free (Zech &Wellmann 2017).

Cross-Training: Engage in a variety of physical activities to prevent overuse of specific muscles or joints. Cross-training helps maintain overall fitness and reduces the risk of imbalances (Zech &Wellmann 2017).

Good Coaching Techniques: Technical instructions leading to skillful performance can decrease the incidence and severity of injuries (Zech &Wellmann 2017).

Proper Rules and Regulations: properly adhered to many rules are made with safety in mind and often with the purpose of preventing specific injuries and therefore should be enforced (Zech &Wellmann 2017).

Medical Examination: Athletes should be examined periodically if they are physically fit before training and competitions. As part of their pre participation evaluation, athletes should be tested for cardiorespiratory fitness, flexibility, and muscle strength (Zech &Wellmann 2017). Those who have been identified to be injury prone should be exempted from competition and training (Wang *et al.*, 2012). This will help prevent injuries and other complications, like heart failure (including death), and improvement of athletic performance (Zech &Wellmann 2017) .

Equitable Competition (Comparable Size and Age of Athletes): Sport competitions, especially in contact sports should be among people of comparable age and size, this will reduce the risk of injury (Wang *et al.*, 2012).

Rules and Regulations: Rule and regulations guiding any sport should be properly adhered to. Many rules are made with safety in mind and often with the purpose of preventing specific injuries and therefore should be enforced (Wang *et al.*, 2012).

Rehabilitation: A proper athletic rehabilitation program speeds recovery and helps prevent re injury or occurrence of other injuries (Wang *et al.*, 2012).

Re-evaluation of the Injured Athletes: Athletes should be re-evaluated and properly examined as medically fit before he or she is allowed to return to sports and this help to prevent complication of previous injury and avert further injury (Zech &Wellmann 2017).

Sanctions: Sanctions should be meted out to athletes who are reckless in their tackles of opponents especially in contact sports like football, basketball, rugby etc (Zech & Wellmann 2017). Fair play to discourage dangerous or reckless behavior during sports activities should be encouraged in order to promote a culture of respect and sportsmanship (Wang *et al.*, 2012).

2.1.8 Diagnosis of Sport Injury

Acute and chronic injuries can be diagnosed by a sports physician or orthopedist, although non-physician professionals trained to diagnose and manage these injuries—such as athletic trainers and physical therapists—may also do so (Rahim *et al.*, 2019).

The following are ways sports injury can be diagnosed:

Medical History: A medical history of the athlete is first obtained, including information on the onset of symptoms, mechanism of injury, previous injuries, and any relevant medical conditions. After that the injured athlete can then be examined (Rahim *et al.*, 2019).

Physical Examination: Physical examination involves healthcare professional palpating the area and ask about the degree of pain or tenderness. You will be asked to move the injured area to test its range of motion as well (Rahim *et al.*, 2019).

Imaging Studies: Imaging studies involves the use of imaging technologies to visualize internal structures and confirm the diagnosis (Rahim *et al.*, 2019). Common imaging methods include;

X-rays: X-ray is useful for detecting fractures, dislocations, and bone abnormalities. However, depending on the suspected injury and level of pain or disability, healthcare providers may take X-rays to rule out any broken bones (Raissakiet *al.*, 2007). While some broken bones are evident on an initial X-ray, some fractures may not be noticeable until a few days later, once healing of the injury has begun (Raissakiet *al.*, 2007).

Magnetic resonance imaging (MRI): This is often used for diagnostic imaging of muscle injuries, joint damage, sprains, fractures, and head injuries sustained during sports in which it uses radio waves within a strong magnetic field to examine musculoskeletal structures, including bones, tendons, muscles, ligaments, and nerves (Raissakiet *al.*, 2007).

Ultrasound: This is used for assessing tendon damage, in an ultrasound, sound waves take real-time images of superficial soft tissues and during an ultrasound, the radiologist may ask you to move the joint to see how motion affects the tendon (Raissakiet *al.*, 2007).

Computed tomography (CT) scans: A CT scan provides a more detailed look at bones and soft tissues as his test can show hairline fractures and small irregularities within complex joints (Raissakiet *al.*, 2007).

Laboratory Tests: The blood of the injured athlete can be tested to determine if systemic conditions or inflammatory markers are suspected (Rahim *et al.*, 2019). Tests may help rule out infections, autoimmune conditions, or other underlying issues (Rahim *et al.*, 2019).

2.1.9 Management and Treatment of Sport Injury

The treatment of sports injuries can vary based on the type and severity of the injury (Adedoyin & Johnson 2012). Here are common approaches to treating sports injuries:

Rest: Allow the injured area time to heal by avoiding activities that aggravate the injury and this is very crucial for reducing inflammation and preventing further damage (Adedoyin & Johnson 2012).

Ice (Cryotherapy): Apply ice to the injured area to reduce swelling and pain. Use ice packs or ice baths for short durations, typically 15-20 minutes every 2-3 hours during the initial 48 hours (Adedoyin & Johnson 2012).

Compression: Use compression bandages or wraps to help control swelling and additionally, Compression aids in stabilizing the injured area and providing support (Adedoyin & Johnson 2012).

Elevation: Elevate the injured limb or area to minimize swelling. Elevating the affected part above heart level can assist in fluid drainage (Adedoyin & Johnson 2012).

Immobilization: Immediate immobilization is a common treatment for musculoskeletal sports injuries, and it can be done right away by an athletic trainer or paramedic (Taylor *et al.*, 2003). Immobilization limits movement in the area and enables the blood to flow more directly to the injury furthermore it reduces pain, swelling, and muscle spasms and helps the healing process begin (Adedoyin & Johnson 2012).

Surgery: Surgery is needed in some cases to repair torn connective tissues or to realign fractured bones (Adedoyin & Johnson 2012). The vast majority of musculoskeletal sports injuries do not require surgery (Taylor *et al.*, 2003). Injuries that can be treated surgically include torn ACL, MCL, or meniscus; rotator cuff tear; and fracture. It is essential to consult with a doctor to determine if surgery is the best option (Taylor *et al.*, 2003).

Rehabilitation: After the injury has healed, you may need to complete a rehabilitation program before returning to the activity that caused the injury (Taylor *et al.*, 2003). A physical therapist will make a plan aimed at rebuilding strength and range of motion of the injured part of the body, and easing any residual pain furthermore, the rehabilitation program can help you return to your previous level of activity and reduce the chance of re-injury (Taylor *et al.*, 2003).

Medication: Prescription medications, including stronger pain relievers or medications for muscle spasms, may be prescribed based on the nature of the injury. Follow the prescribed regimen under medical supervision (Taylor *et al.*, 2003).

Injections: Corticosteroid injections may be administered to reduce inflammation and alleviate pain in certain conditions like tendonitis. Platelet-rich plasma (PRP) injections may be used to promote healing (Taylor *et al.*, 2003).

Physical Therapy: Physical therapy can help to improve range of motion, strength, and flexibility and It can also help to reduce pain and inflammation. Physical therapy is often recommended for athletes who have suffered a muscle strain, ligament tear, or tendon injury (Kolt & Snyder-Mackler 2007). A physical therapist can develop a treatment plan specific to the athlete's needs (Kolt & Snyder-Mackler 2007).

Electro diagnostic Testing: Electromyography (EMG) or nerve conduction studies may be used to assess nerve function and identify nerve-related issues (Taylor *et al.*, 2003).

2.2 Meaning of Football

Football, also known as soccer in some regions, is a team sport played between two teams of eleven players each (Rodrick, 2006). The objective of the game is to score goals by getting a round ball into the opposing team's goal, primarily using one's feet (hence the name "football") (Mason, 2017). Apart from the feet, other parts of the body except the hand can be used to play football. The game is played on a rectangular field with goalposts at either end. Individuals who play football are referred to as footballers (Iaiaet *al.*, 2009).

2.2.1 Types of Football

Basically, footballers can be categorized into two based on their motivation of playing the sport.

They are;

Amateur Football: Amateur football refers to the practice of playing football for fun, recreation and as hobby rather than as a career which is a source of income (Mason, 2017). Those who play football at the non-professional level are known as amateur footballers (Iaiyet *al.*, 2009).

Features of Amateur Football:

The following are features that characterize amateur football; Most amateur footballers play football as a hobby, for fun and recreational purposes (Mason, 2017), Amateur football players don't earn money for playing football (Mason, 2017), Amateur football is commonly organized into local leagues, tournaments, or community competitions (Zelyurt & Ataçoçuğu 2016), In amateur football, most football rules and regulations are not followed (Zelyurt & Ataçoçuğu 2016), Amateur teams may have volunteer coaches and staff who contribute their time and expertise without financial compensation (Zelyurt & Ataçoçuğu 2016).

Amateur football receives limited media exposure compared to professional leagues. Matches may not be televised, and coverage may be focused on local community publications or social media (Zelyurt & Ataçoçuğu 2016).

Amateur football teams may be self-funded or rely on contributions from players and local clubs to cover expenses such as equipment, uniforms, and facility rentals.

Amateur footballers typically have limited time for training compared to professionals who may train daily. Training sessions for amateurs may occur during evenings or weekends (Zelyurt & Ataçoçuğu 2016).

Amateur teams may have players with a wide range of skill levels and experience. Some may be beginners, while others have played the sport for years (Zelyurt & Ataçoçuğu 2016).

Amateur football players are usually novice on some certain professional football rules and regulations (Mason, 2017).

Professional Football: Professional football is a brand of football where players play football to make a living at a high competitive level (Rodrick, 2006). Individuals who play football at this level are referred to as professional footballers (Mason, 2017).

Features of Professional Football:

The following are features that characterize professional football;

It is very competitive (Mason, 2017). Professional clubs and national teams participate in prestigious international competitions such as the UEFA Champions League, Copa Libertadores, and AFC Champions League, World Cup etc, providing opportunities to compete against other top clubs from different regions (Rodrick, 2006).

It is organize into leagues with dedicated fanbases and supporters who passionately follow and cheer for their favourite clubs. Matches often draw large crowds, creating an electric atmosphere in stadiums (Rodrick, 2006).

Professional football players earn a living from it. Because of this players play the game with full time commitment. Players engage in regular training sessions, physical conditioning, tactical preparations, and adherence to team schedules (Rodrick, 2006).

Professional football is organized into football teams and clubs, with coaching crew, club administrator and managers (Rodrick, 2006).

Football players usually sign contracts with professional football clubs or teams. The contracts specify details such as salary, contract duration, performance expectations, and other relevant clauses (Rodrick, 2006).

There are insurance packages that covers injury of players (Rodrick, 2006).

There are rules and regulations set up by the Football International of Football Association (FIFA), and each local league organizing bodies (Rodrick, 2006).

There is provision of adequate football facilities and equipment like stadiums, jerseys, football wears, etc (Rodrick, 2006).

It is played within a standard time of at least 90minutes. 45 minutes for each half

It involves wide media coverage and broadcasting (Rodrick, 2006).

Professional football features a transfer market where players can be bought and sold between clubs. Transfer fees and negotiations play a significant role in shaping team rosters (Rodrick, 2006).

Many professional players are represented by sports agents who negotiate contracts, endorsements, and other business deals on their behalf (Rodrick, 2006).

2.2.2 Injury Prevention in Football

Football (soccer) is one of the most widely played and watched sports globally, but it carries a substantial risk of injury due to its dynamic and contact-based nature. Injuries in football can lead to time lost from training and matches, reduced performance, long-term physical consequences, and even psychological distress (Ekstrand et al., 2011). Therefore, injury prevention is a vital component of football training and sports medicine practice. Injury prevention strategies in football include:

Warm-up and Neuromuscular Training

Structured warm-up routines are among the most effective tools for reducing injury incidence. The FIFA Medical and Research Centre (F-MARC) developed the FIFA 11+, a comprehensive warm-up program consisting of running exercises, strength and plyometric drills, and balance training. Soligard et al. (2008) demonstrated that implementing the FIFA 11+ reduced overall injuries by 30% and severe injuries by up to 50% in youth female footballers. The program improves core stability, proprioception, and neuromuscular control, which are essential for injury resilience.

Strength and Conditioning

Targeted strength training, especially for the hamstrings, quadriceps, adductors, and core muscles, has been shown to reduce the risk of muscle strains and joint injuries. The Nordic Hamstring Exercise (NHE), for example, has been widely validated in preventing hamstring injuries. A meta-analysis by van Dyk et al. (2019) found that teams that implemented NHE experienced up to a 50% reduction in hamstring injuries.

Strengthening programs should also include eccentric and plyometric training to prepare muscles and tendons for high-intensity football movements like sprinting, jumping, and changing direction (Hewett et al., 2006).

Load Management

Proper training load monitoring is critical in balancing the demands of matches and training with adequate recovery. Gabbett (2016) emphasized the “acute-to-chronic workload ratio” (ACWR), where a spike in short-term training load compared to long-term load increases injury risk. Maintaining an optimal ACWR (0.8 to 1.3) helps avoid overload and overuse injuries.

Flexibility and Mobility Exercises

Maintaining adequate joint range of motion and muscle flexibility helps prevent muscle strains and joint injuries. Dynamic stretching before play and static stretching during recovery periods contribute to overall mobility and muscle health (Behm et al., 2016). However, flexibility routines should be individualized and sport-specific.

Protective Equipment and Playing Surfaces

Wearing appropriate gear—including shin guards, well-fitted boots, and ankle supports—reduces the severity of impact-related injuries. Additionally, proper field maintenance and safe playing surfaces are essential. Uneven or slippery pitches contribute significantly to non-contact injuries such as ankle sprains and ACL ruptures (Steffen et al., 2007).

Injury Surveillance and Medical Screening

Regular pre-participation medical evaluations (PPME) and injury surveillance systems help identify at-risk players and monitor injury patterns. Screening for imbalances, previous injury history, and physical deficits allows for early intervention (Bahr & Holme, 2003). Data-driven prevention plans can then be developed by team medical staff.

Technical and Tactical Education

Educating players on proper technique, such as safe tackling and landing mechanics, reduces injury risk. Coaches should also incorporate decision-making drills and position-specific strategies that lower exposure to high-risk scenarios during play (Dvorak & Junge, 2000).

Psychological Training

Stress, anxiety, and lack of focus have been identified as contributing factors to injury. Psychological skills training, including mindfulness, stress management, and goal-setting, may

help reduce injury incidence (Ivarsson et al., 2017). A holistic approach that includes mental readiness improves both performance and safety.

2.2.3 Role of Physiotherapy in Injury Prevention among Footballers

Physiotherapy plays a central role in the prevention of injuries among footballers, encompassing strategies ranging from physical assessments and conditioning to education, rehabilitation, and return-to-play protocols. Football is a physically demanding sport involving high-speed running, rapid changes in direction, jumping, and physical contact, all of which predispose players to injuries, especially of the lower limbs (Ekstrand et al., 2011). The proactive engagement of physiotherapists in training and match preparation significantly reduces the occurrence and recurrence of such injuries.

Pre-participation Screening and Risk Assessment

One of the primary roles of physiotherapists in injury prevention is pre-season screening. This involves evaluating players for biomechanical imbalances, muscle weaknesses, joint instabilities, and previous injury history that may increase the risk of future injuries (Bahr & Holme, 2003). Through tools such as the Functional Movement Screen (FMS), Y-Balance Test, and isokinetic testing, physiotherapists can identify deficits that require correction before competitive play begins.

Designing Individualized Injury Prevention Programs

Based on assessment results, physiotherapists design individualized strength, flexibility, and neuromuscular training programs. These programs often include eccentric hamstring exercises, such as the Nordic Hamstring Curl, which has been shown to significantly reduce the incidence of hamstring injuries (van Dyk et al., 2019). Exercises that target core stability, dynamic balance,

and agility are also incorporated to enhance joint control and minimize the risk of non-contact injuries like anterior cruciate ligament (ACL) tears (Hewett et al., 2006).

Warm-up and Cool-down Routines

Physiotherapists ensure that players perform effective warm-up routines, such as the FIFA 11+ program. This structured warm-up improves proprioception, neuromuscular coordination, and overall readiness for play. Studies have shown that teams consistently using FIFA 11+ experience up to a 50% reduction in injuries (Soligard et al., 2008). Physiotherapists also oversee cool-down protocols, including static stretching and soft tissue recovery techniques, which help prevent delayed onset muscle soreness (DOMS) and facilitate faster recovery.

Load Management and Monitoring

Physiotherapists work closely with coaches and strength and conditioning staff to monitor training load and match exposure, aiming to avoid overtraining and fatigue, which are key predictors of injury (Gabbett, 2016). Tools such as session RPE (Rating of Perceived Exertion), GPS tracking, and heart rate variability are often used to assess player workload. By maintaining an appropriate balance between training stress and recovery, physiotherapists help prevent overuse injuries.

Taping, Bracing, and Manual Therapy

During training and competition, physiotherapists provide preventive support techniques, such as taping and bracing, particularly for players with a history of ankle sprains or knee instability. Manual therapy techniques, including soft tissue mobilization and joint manipulation, are used to optimize movement patterns and reduce muscle tension, enhancing performance while minimizing injury risk (Cagnie et al., 2007).

Education and Injury Awareness

Physiotherapists are also responsible for educating footballers on injury risk factors, safe movement techniques, and proper equipment use. Through workshops and one-on-one sessions, players are trained in landing mechanics, cutting techniques, and safe tackling practices. Educating athletes about the importance of hydration, nutrition, rest, and sleep is also crucial in preventing injuries and promoting overall health (Ivarsson et al., 2017).

Rehabilitation and Re-injury Prevention

While rehabilitation is often considered reactive, physiotherapists incorporate re-injury prevention strategies as part of rehabilitation. This includes progressive return-to-play protocols, biomechanical re-education, and ensuring that players have regained adequate strength, balance, and confidence before resuming full activity. A poorly rehabilitated injury significantly increases the risk of recurrence (Orchard, 2001).

Multidisciplinary Collaboration

Injury prevention in football is most effective when physiotherapists work as part of a multidisciplinary team that includes coaches, doctors, fitness trainers, and psychologists. This collaborative approach ensures that all aspects of player health and performance are addressed comprehensively, creating an optimal environment for injury prevention.

A summary of relevant literature related to this dissertation is presented in Table 2.1

2.3 Empirical Review of Literature

Table 2: Empirical Table

AUTHOR/YEAR/COUNTRY	TITLE	SAMPLE SIZE	AIM OF STUDY	STUDY TYPE	FINDINGS
Backarman et al. (2022), Saudi Arabia	An intervention plan for preventing and handling amateur soccer players' injuries	The study included 246 participants in the intervention group and 256 in the control group (n = 502)	To measure the impact of an intervention educational plan on improving amateur soccer players' knowledge and skills in preventing and handling soccer-related injuries	Experimental Study	In multiple scales and overall score levels, intervention group participants achieved significantly higher scores than their control group counterparts. Educational assistance had a good impact on their knowledge and skills.
Bizzini et al. (2014), Switzerland	Preventive effects of the 11+ injury prevention programme in a large community football team over 8 years	Longitudinal study with 1,447 amateur football players. Injury rates and compliance with the 11+ program were tracked	To investigate the long-term effects of an injury prevention program in community football players	Longitudinal study	The 11+ injury prevention program demonstrated sustained effectiveness in reducing overall injury rates over an 8-year period.

Faude et al. (2012), Germany	Injury prevention in football – what works	Systematic review and meta-analysis of 42 studies	To review the effectiveness of injury prevention strategies in football	Systematic review and meta-analysis	Injury prevention programs combining balance, strength, and proprioceptive training show the most promising results in reducing injury rates.
Gebert et al. (2019), Switzerland	Injury Prevention in Amateur Soccer: A Nation-Wide Study on Implementation and Associations with Injury Incidence	2004 (n = 1029), 2008 (n = 705), 2015 (n = 1008)	To examine the implementation of injury prevention in the real-world context of Swiss amateur soccer	Cross-sectional survey	Level of implementation of prevention programmes is still unsatisfactory. Additional programmes did not increase willingness to implement them. Barriers must be addressed.
Haxhi et al. (2021), Kosovo	Knowledge and Attitudes of Amateur Football Players Regarding the Prevention of Sports Injuries	Cross-sectional survey of 224 amateur football players	To assess the knowledge and attitudes of amateur footballers towards sports injury prevention	Cross-sectional survey	Players had moderate knowledge and positive attitudes, though specific areas showed room for improvement.

Hoef et al. (2022), Germany	Adherence to an injury prevention program in male amateur football players is affected by players' age, experience and perceptions	Data from 98 of 221 football players from a cluster RCT	To investigate relationships between players' characteristics and adherence to an injury prevention programme	Randomised controlled trial	Adherence was better among older, more experienced players. Perceptions of the programme's usefulness, intensity, and functionality affected adherence.
Junge et al. (2017), Switzerland	Country-wide campaign to prevent soccer injuries in Swiss amateur players	Prospective cohort study with 49,490 amateur players	To evaluate the impact of a country-wide campaign on soccer injury prevention	Prospective cohort study	The campaign led to a significant reduction in soccer injury incidence among amateur players.
Oghumu (2025), Nigeria	Pattern of Sport Injury and its association with Injury Prevention Strategies in male professional footballers in calabar, Nigeria.	Cross-sectional survey of 130 professional footballers	To investigate the pattern of sport injuries among male professional footballers in Calabar and to evaluate the association between sport injury patterns and injury prevention strategies	Cross-sectional survey	High risk of sport injuries exist among male professional footballers in Calabar, with dislocation and sprains as the most common injuries. Injuries prevention strategies were associated with the nature of injuries sustained

Owoeye et al. (2017), Nigeria	Injuries in male and female semi-professional football (soccer) players in Nigeria: prospective study of a National Tournament	756 players (356 males, 300 females) from 22 teams	To evaluate the incidence and pattern of injuries in semi-professional Nigerian football players	Prospective cohort design	High injury incidence was recorded, though most injuries did not cause time-loss. Patterns were consistent with earlier studies. Need for more prevention initiatives.
Soligard et al. (2008), Norway	Comprehensive warm-up programme to prevent injuries in young female footballers	Cluster-randomized controlled trial with 1,410 female youth players	To assess effectiveness of a warm-up program in reducing injuries in female youth football	Cluster-randomized controlled trial	The warm-up program significantly reduced the risk of overall and severe injuries in young female players.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Participants

The study population comprised undergraduate students of the University of Benin aged 18 years and above, who are involved in playing football in the University of Benin campus.

3.1.1 Inclusion Criteria

Participants eligible for this study were:

- i. Individuals who are 18 years and above and are willing to give informed consent to participate in the study.
- ii. Players who play football at faculty or departmental level.
- iii. Players who have been involved in football activities for at least six months prior to the time of data collection.
- iv. Individuals who are in 200Level and above.

3.1.2 Exclusion Criteria

The study would exclude the following individuals:

- i. faculty or departmental student football players who engage in professional football.
- ii. Individuals who have deformities or musculoskeletal issues of any sort.
- iii. Individuals who engage in other sports apart from Football.

3.2 Materials

3.2.1 Apparatus/ Instrument

The following instruments were used for data collection

- i. Height meter (Stadiometer)

- ii. Weighing scale
- iii. Injury prevention questionnaire

Height meter SECA 213 MODEL (Stadiometer):

A height meter, also known as a stadiometer, is a device used to measure human height accurately. It typically consists of a vertical ruler or scale attached to a stable base, often with a sliding headpiece that rests on the top of the head. Height meters are widely used in medical, fitness, and research settings to assess growth, monitor health conditions, and collect anthropometric data. A height meter measures the distance from the floor to the top of a person's head while they stand upright. Height meter are widely recognized as valid tools for measuring height when used properly (subject standing straight, heels together, head in Frankfort plane) (Liu et al., 2021). A study using digital stadiometers found Intra class Correlation Coefficients (ICCs) > 0.98, indicating excellent reliability (Martins et al., 2022).

Weighing scale (TANITA 876 MODEL):

A weighing scale, also known as a mass scale, weight scale, mass balance, or weight balance, is a crucial device used for the precise determination of an object's weight or mass. These scales come in a variety of sizes and types, from small laboratory balances to heavy-duty industrial models, and are calibrated to display measurements in specific units such as grams, kilograms, ounces, or pounds, depending on the intended use. Calibration is an essential process to ensure the accuracy and reliability of the scale's weight measurements, involving adjustments and testing to guarantee consistent and precise readings. It has a validity of 95-99% and a reliability of 95-98% (Frija-Masson et al, 2021).

Injury Prevention Questionnaire:

A structured questionnaire developed by Geertsema et al. (2021) was adopted to assess knowledge, beliefs, and practices related to injury prevention (Appendix A). The instrument comprises 18 items divided into three domains: (1) injury prevention knowledge, (2) attitudes and beliefs, and (3) injury prevention practices within club settings. Each item employed a 5-point Likert scale, with an additional "Don't know" or "others" option for improved clarity. The questionnaire was originally designed for elite female footballers and administered during the 2019 FIFA Women's World Cup.

In this study, the questionnaire was adapted to suit amateur footballers in the University of Benin with minor modifications to contextual terminology. No changes were made to the underlying structure or response format.

The questionnaire has been previously used in elite athlete populations and was pilot-tested by Geertsema et al. (2021) with two researchers, a footballer, and a member of the public. Five questions were reworded to improve clarity, suggesting preliminary face and content validity. Although internal consistency statistics were not explicitly reported in the original publication, the structured development and expert validation support its content credibility.

For this study, face and content validity was reaffirmed by a panel of two sports physiotherapists and a coach to ensure relevance in the local context.

3.3 Methods

3.3.1 Research Design

This study was a descriptive cross-sectional analytical design.

3.3.2 Sampling Technique/ Sample Size Calculation

This study adopted a multi-stage sampling technique to ensure adequate representation across the various faculties within the University of Benin. The university comprises thirteen (13) faculties, from which six (6) faculties were randomly selected using a simple random sampling method. Each faculty was assigned a unique identification number, and a random number generator was used to select six faculties without replacement. The 6 faculties gotten include Faculties of Basic Medical sciences, Agricultural science, Life science, Engineering, Environmental & Management science, Physical science.

From each of the six selected faculties, two (2) departments each were randomly chosen using simple random sampling, resulting in a total of twelve (12) departments that will constitute the sampling strata.

The total number of amateur football players in each selected department was obtained from the captains and coaches of each team to determine the overall population size for the study.

Table 2: Sample Techniques

Faculty	Department	No of Amateur Footballers
Basic Medical Science	Radiography	99
	Physiotherapy	93
Agricultural Science	Animal Science	88
	Agricultural Economics	89
Life Science	Optometry	118
	Science Laboratory Technology	90
Engineering	Computer Engineering	112
	Civil Engineering	104
Environmental & Management science	Quantity Survey	94
	Architecture	98
Physical Science	Statistics	67
	Computer Science	90
		TOTAL = 1142

Table 3: Sample Size

Faculty	Department	Number of Amateur Footballers	Allocated Sample Size
Basic Medical Sciences	Radiography	99	$(99 / 1142) \times 296 = \mathbf{26}$
	Physiotherapy	93	$(93 / 1142) \times 296 = \mathbf{24}$
Agricultural Science	Animal Science	88	$(88 / 1142) \times 296 = \mathbf{23}$
	Agricultural Economics	89	$(89 / 1142) \times 296 = \mathbf{23}$
Life Science	Optometry	118	$(118 / 1142) \times 296 = \mathbf{31}$
	Science Laboratory Technology	90	$(90 / 1142) \times 296 = \mathbf{23}$
Engineering	Computer Engineering	112	$(112 / 1142) \times 296 = \mathbf{29}$
	Civil Engineering	104	$(104 / 1142) \times 296 = \mathbf{27}$
Environmental & Management Sciences	Quantity Survey	94	$(94 / 1142) \times 296 = \mathbf{24}$
	Architecture	98	$(98 / 1142) \times 296 = \mathbf{25}$
Physical Science	Statistics	67	$(67 / 1142) \times 296 = \mathbf{17}$
	Computer Science	90	$(90 / 1142) \times 296 = \mathbf{23}$
Total		1142	296

The appropriate sample size was determined using **Slovin's formula** as follows:

$$n = \frac{N}{1 + N[e]^2} \quad (\text{Slovin's Formula})$$

n = required sample size

N = population size (1142)

e = level of precision (0.05 for 95% confidence).

Given;

$$N = 1142$$

$$e = 0.05$$

$$n = 1142 / [1 + 1142(0.05)^2]$$

n = 296 participants

To proportionally allocate the total sample size of **296** across the 12 departments based on their population sizes this formula was used:

$$\text{Department Sample Size} = (\text{Department population} / \text{Total population}) \times \text{Total sample size}$$

Where:

$$\text{Total population} = \mathbf{1,142}$$

$$\text{Total sample size} = \mathbf{296}$$

Amateur football players who meet the inclusion criteria were consecutively selected to fulfil the allocated sample size for that department. However 298 participants was recruited for the study.

3.2.3 Research Procedure/Procedure for Data Collection

Prior to the commencement of data collection, ethical approval was obtained from the University of Benin Research and Ethics Committee to ensure that the study meets all necessary ethical

standards. In addition to this, formal permissions was sought from relevant university authorities, including the Sports Department and the Student Affairs Division, to enable access to amateur football players across the campus. These permissions ensured that the study was conducted with institutional backing and in accordance with university protocols.

The recruitment of participants followed the sampling procedure earlier outlined. Amateur football players from selected departments, particularly those participating in inter-faculty and recreational university football competitions, were approached. During recruitment, the researcher introduced the study to the players, clearly explaining the objectives, procedures, and the voluntary nature of participation. Emphasis was placed on the confidentiality of the information provided and the fact that there are no negative consequences for choosing not to participate.

Following recruitment, each eligible participant was presented with an informed consent form, which detailed the purpose of the study, what participation entails, potential risks and benefits, and measures taken to ensure data confidentiality. Only individuals who willingly sign the consent form were included in the study, ensuring adherence to ethical research standards and respect for participant autonomy.

Once consent was obtained, data collection proceed through the administration of a structured, self-administered questionnaire. The questionnaire was distributed in hardcopy to participants. Participants were given ample time to complete the questionnaire, and the researcher was available on-site to provide assistance or clarification where needed, especially for those who had difficulty understanding certain questions.

All collected data were treated with strict confidentiality. All information obtained were used solely for the purposes of the study and were not disclosed to any third party without appropriate consent.

Measurement of Heights: Participants' heights was measured with a height meter to the nearest 0.1m. Participants were instructed to stand erect by the wall with their backs against the wall and feet together. Then the researcher placed a meter rule on the participants' vertex and takes a reading from the height meter (WHO, 2008).

Measurement of Weight: Participants' weights were measured with a standard weighing scale to the nearest 0.1Kg. The participants were asked to be on light shorts and stand on the weighing scale with head erect. Then the researchers read the weights from the scale and record it (WHO, 2008).

3.2.4 Ethical Consideration

Ethical approval for this study was obtained from the Health Research and Ethics Committee of the University of Benin (CMS/REC/2024/821) Appendix C, and written informed consent was obtained from participants.

3.2.5 Data Analysis

Data was analysed using the IBM Statistical Package for the Social Sciences, version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize data. Chi-Square test was used to determine the association between level of awareness and the practice of sports injury prevention strategies among amateur football players in the University of Benin while the level of statistical significance was set at an alpha value of $p < 0.05$.

CHAPTER FOUR

RESULTS

4.1 Physical Characteristics of the Respondents

A total of 298 amateur football players participated in the study. Their physical characteristics show the mean height, weight, and body mass index (BMI) of respondents to be 1.92 ± 4.13 m, 65.71 ± 9.05 Kg, and 23.47 ± 4.99 Kg/m², respectively. The table indicates a fairly homogeneous group in terms of body size, with heights ranging from 1.30 m to 73.00 m, weights from 45.00 Kg to 100.00 Kg, and BMI values ranging from 0.01 kg/m² to 48.52 Kg/m². (Table 4).

Table 4: Physical Characteristics of all Respondents (N=298)

Variables	Mean \pm SD	Minimum	Maximum
Height (m)	1.92 \pm 4.13	1.30	73.00
Weight (Kg)	65.71 \pm 9.05	45.00	100.00
Body Mass Index (Kg/m ²)	23.47 \pm 4.99	.01	48.52

4.1.2 Socio-Demographic Characteristics of the Respondents

The age distribution revealed that the majority of respondents (66.6%) were within the 18–25 years category, while 46 (12.4%) were between 26–30 years. A total of 180 (60.4%) participants were male, and 118 (39.6%) were female. Regarding playing position, most participants were defenders (29.9%), followed by midfielders (21.0%), forwards (18.1%), and goalkeepers (9.7%). With respect to academic level, 300-level students (22.9%) constituted the highest proportion, followed by 100-level (21.6%), 400-level (18.1%), and 200-level (17.8%) students. Participants were drawn from a wide range of departments, with the highest representation from Agricultural Economics (7.8%), Architecture (7.8%), Civil Engineering (7.3%), and Physiotherapy (7.3%). The socio-demographic characteristics of the participants are summarized (Table 5).

Table 5: Sociodemographic Characteristics of the Respondents (N=298)

Variable	Category	Frequency	Percentage (%)
Age	18-25	247	66.6
	26-30	46	12.4
	31 -35	3	0.8
	36 -40	2	0.5
Sex	Male	180	60.4
	Female	118	39.6
Playing Position	Goal keeper	36	9.7
	Defender	111	29.9
	Midfielder	78	21.0
	Forward	67	18.1
Level	200	80	21.6
	300	66	17.8
	400	85	22.9
	500	67	18.1
Department	Radiography	23	6.2
	Physiotherapy	27	7.3
	Animal science	20	5.4
	Agriculture economics	29	7.8
	Optometry	27	7.3
	SLT	24	6.5
	Computer engineering	24	6.5
	Civil engineering	27	7.3
	Quantity survey	22	5.9
	Architecture	29	7.8
	Statistics	26	7.0
	Computer science	20	5.4
	Faculty	Basic medical sciences	40
Agricultural science		49	13.2
Life science		51	13.7
Engineering		51	13.7
Environmental science		51	13.7
Physical science		46	12.4

4.1.3: Level of Awareness of Sports Injury Prevention Strategies among Amateur Football Players

The distribution of responses on the level of awareness of sports injury prevention strategies among amateur football players reveals most of the respondents (49.4%) perceived a high to moderate risk of sustaining injury as footballers, while 23.8% perceived the risk as low and 26.8% were uncertain. The most frequently reported types of injury were dislocations (17.4%), sprains (17.1%), and contusions (16.8%), whereas fractures (12.4%) were the least common.

The knee (7.4%), groin (7.7%), and head (9.4%) were the body parts most commonly exposed to injury. A large proportion of players (53.7%) considered injury prevention to be either very important (25.8%) or moderately important (27.9%).

When asked about the types of injuries footballers are commonly exposed to, over half of the participants identified thigh (55.7%), ankle (46.6%), and groin injuries (49.0%) as the most frequent. The major reasons for injuries cited included low muscle strength (43.3%), hard tackles (43.0%), poor pitch quality (39.6%), and reduced recovery time (37.9%).

With respect to perception and attitudes, nearly half (42.9%) of the players disagreed with the statement “It’s more important to play than to do prevention,” indicating a generally positive attitude toward injury prevention. Furthermore, 33.6% agreed that the coach’s motivation affects players’ motivation to prevent injuries, though 19.5% were uncertain. In assessing players’ general feelings about injury prevention strategies, 29.2% expressed positive or very positive feelings, while 38.3% expressed neutral or negative opinions. Regarding awareness and practice, 39.9% reported having received advice about injury prevention programmes, while 31.9% indicated that they had performed some form of injury prevention activity during the season. However, 34.9% were unsure whether they had implemented such measures.

The most commonly targeted injuries for prevention were those involving the thigh (18.5%), knee (15.4%), head (15.1%), and ankle (15.1%). Concerning medical support, nearly all teams (99.3%) had access to a team doctor, but access to other support personnel such as physiotherapists (0%), massage therapists (16.8%), and sports scientists (16.8%) was limited. About one-fifth (19.8%) of the respondents indicated that their teams had no medical support. (Table 6A and Table 6B)

Table 6A: Level of Awareness of Risk of Sport injuries and body part injured among Amateur Football Players

S/N	Item	Response Options	Frequency (n)	Percentage (%)		
1	Risk of sustaining injury as a footballer	High	72	24.2		
		Moderate	75	25.2		
		Low	71	23.8		
		Don't know	80	26.8		
2	Most common type of injury frequently exposed to	Sprain	51	17.1		
		Strain	47	15.8		
		Dislocation	52	17.4		
		Contusion	50	16.8		
		Fracture	37	12.4		
		Others	61	20.5		
		3	Body part most exposed to injury	Head	28	9.4
Neck	21			7.0		
Shoulder	8			2.7		
Elbow	19			6.4		
Thigh (Hamstrings or Quadriceps)	12			4.0		
Hip	10			3.4		
Knee	22			7.4		
Ankle	13			4.4		
Groin	23			7.7		
Others	0			0.0		
4	Injuries most important to prevent			Head	49	16.4
				Thigh	42	14.1
				Knee	57	19.1
		Ankle	55	18.5		
		Groin	52	17.4		
		Others	43	14.4		
		5	Importance of preventing injuries	Very important	77	25.8
Moderately important	83			27.9		
Not very important	83			27.9		
Don't know	55			18.5		
6	Injury's footballers are exposed to	Head	108	36.2		
		Thigh	166	55.7		
		Knee	137	46.0		
		Ankle	139	46.6		
		Groin	146	49.0		
		Others	115	38.6		
7	Common reasons for injuries	Too little training	97	32.6		
		Too much training	89	29.9		
		Too many matches	68	22.8		
		Hard tackles	128	43.0		
		Low muscle strength	129	43.3		
		Reduced mobility	78	26.2		
		Reduced recovery time	113	37.9		
		Artificial turf	91	30.5		
		Poor pitch quality	118	39.6		
		Others	67	22.5		

Table 6B: Level of Awareness of Sport Injuries Prevention Strategies among Amateur Football Players

S/N	Item	Response Options	Frequency (n)	Percentage (%)
8	Agreement: “It’s more important to play than to do prevention”	Fully agree	61	20.5
		Agree	39	13.1
		Not sure	37	12.4
		Disagree	63	21.1
		Totally disagree	65	21.8
		Don’t know	33	11.1
9	Agreement: “Coach’s motivation affects players’ motivation to prevent injuries”	Fully agree	53	17.8
		Agree	47	15.8
		Not sure	52	17.4
		Disagree	42	14.1
		Totally disagree	46	15.4
		Don’t know	58	19.5
10	Feelings about injury prevention strategies	Very positive	48	16.1
		Positive	39	13.1
		Neutral	53	17.8
		Negative	50	16.8
		Very negative	64	21.5
		Don’t know	44	14.8
11	Received advice about injury prevention programmes	Yes	119	39.9
		No	93	31.2
		Don’t know	86	28.9
12	Performed injury prevention strategies this season	Yes	95	31.9
		No	99	33.2
		Don’t know	104	34.9
13	Types of injuries tried to prevent	Head	45	15.1
		Thigh	55	18.5
		Knee	46	15.4
		Ankle	45	15.1
		Groin	42	14.1
		Others	37	12.4
14	Medical support available in team	Team doctor	296	99.3
		Physiotherapist	0	0.0
		Massage therapist	50	16.8
		Sports scientist	50	16.8
		Access to doctor (external)	99	33.2
		Access to physiotherapist (external)	25	8.4
		Access to massage therapist (external)	0	0.0
		Access to sports scientist (external)	25	8.4
		No medical support	59	19.8
		Don’t know	0	0.0
		Other	0	0.0

4.1.4 : Extent of Practice of Injury Prevention Strategy

Amateur football players reported variable levels of engagement in different injury-prevention strategies, with most activities being practiced at moderate frequencies (two to five times per week). Participation in the FIFA 11+ programme was moderate, as 54 (18.1%) reported using it three times per week and 42 (14.1%) five to six times weekly, although 38 (12.8%) did not perform it at all. Similarly, the general warm-up programme was commonly performed three to five times weekly (15.4% each), while 17.4% reported no participation.

Engagement in movement preparation or sport-specific drills was evenly distributed across all frequencies (12.8–15.1%), indicating steady but not intensive use. Strength training on the pitch showed relatively higher adherence, with 57 (19.1%) performing it six times weekly and only 31 (10.4%) not practicing it, whereas strength training in separate sessions peaked at five to six sessions per week (16.8–16.1%). Flexibility training, both on and off the pitch, was practiced regularly by many players. Flexibility on the pitch was performed twice (15.8%) or six times (15.1%) per week, while flexibility before or after training peaked at three (16.8%) and five (15.1%) sessions weekly. For flexibility in separate sessions, 54 (18.1%) trained twice and 45 (15.1%) six times weekly.

Sprint training was moderately practiced, with 45 (15.1%) performing it twice and 50 (16.8%) five times weekly, though 12.8% reported no participation. Cool-down exercises followed a similar pattern, with 54 (18.1%) performing them four and 46 (15.4%) five times weekly. Practice of specific prevention protocols was generally lower and evenly distributed (\approx 12–16% across all frequencies), while balance and core-stability training were among the most consistent: 51 (17.1%) practiced it three and 53 (17.8%) five times per week, with only 35 (11.7%) reporting

no participation. Other preventive measures such as taping or protective gear were performed six times weekly by 50 (16.8%) players, although 47 (15.8%) did not use them at all.(Table 7)

Table 7: Extent of Practice of Injury Prevention Strategy

Injury Prevention Strategy	None (1x)	Once/week (2x)	Twice/week (3x)	3x/week (4x)	4x/week (5x)	5x/week (6x)	6x/week (7x)
FIFA 11+	38 (12.8%)	33 (11.1%)	51 (17.1%)	54 (18.1%)	38 (12.8%)	42 (14.1%)	42 (14.1%)
General warm-up programme	52 (17.4%)	41 (13.8%)	35 (11.7%)	46 (15.4%)	40 (13.4%)	46 (15.4%)	38 (12.8%)
Movement preparation / sport-specific movement	45 (15.1%)	38 (12.8%)	41 (13.8%)	43 (14.4%)	44 (14.8%)	45 (15.1%)	42 (14.1%)
Strength training on the pitch	31 (10.4%)	42 (14.1%)	38 (12.8%)	50 (16.8%)	41 (13.8%)	39 (13.1%)	57 (19.1%)
Strength training in a separate session	53 (17.8%)	39 (13.1%)	42 (14.1%)	38 (12.8%)	50 (16.8%)	48 (16.1%)	28 (9.4%)
Flexibility training on the pitch	42 (14.1%)	46 (15.4%)	47 (15.8%)	37 (12.4%)	42 (14.1%)	39 (13.1%)	45 (15.1%)
Flexibility training before or after training	40 (13.4%)	42 (14.1%)	50 (16.8%)	47 (15.8%)	45 (15.1%)	47 (15.8%)	27 (9.1%)
Flexibility training in a separate session	43 (14.4%)	44 (14.8%)	54 (18.1%)	45 (15.1%)	30 (10.1%)	37 (12.4%)	45 (15.1%)
Sprint training	38 (12.8%)	40 (13.4%)	45 (15.1%)	42 (14.1%)	36 (12.1%)	50 (16.8%)	47 (15.8%)
Cool down	34 (11.4%)	43 (14.4%)	39 (13.1%)	34 (11.4%)	54 (18.1%)	46 (15.4%)	48 (16.1%)
Specific prevention protocol	48 (16.1%)	48 (16.1%)	43 (14.4%)	37 (12.4%)	39 (13.1%)	48 (16.1%)	35 (11.7%)
Balance and core stability training	35 (11.7%)	32 (10.7%)	41 (13.8%)	51 (17.1%)	40 (13.4%)	53 (17.8%)	46 (15.4%)
Other prevention measures	47 (15.8%)	48 (16.1%)	36 (12.1%)	44 (14.8%)	31 (10.4%)	42 (14.1%)	50 (16.8%)

4.1.4 Association between Age and Injury Prevention Strategies

The association between age group and extent of practice of various injury-prevention strategies among amateur football players shows that no significant associations were also observed for strength training on the pitch ($\chi^2 = 15.67$, $p = 0.616$) or strength training in a separate session ($\chi^2 = 15.67$, $p = 0.616$). For flexibility training on the pitch and flexibility before or after training, both analyses were non-significant ($\chi^2 = 23.71$, $p = 0.165$). Likewise, flexibility training in a separate session did not differ significantly across age groups ($\chi^2 = 19.29$, $p = 0.374$). No significant association were found for sprint training ($\chi^2 = 19.29$, $p = 0.374$), or specific prevention protocols ($\chi^2 = 14.53$, $p = 0.694$). Other preventive measures ($\chi^2 = 22.67$, $p = 0.204$) showed no significant age-related variation in frequency of practice (Table 8A).

Across all injury-prevention domains, the Chi-square analysis revealed no statistically significant associations between age and frequency of practice ($p > 0.05$). For the FIFA 11+ programme, differences across age categories were not significant ($\chi^2 = 12.04$, $p = 0.845$). The pattern was identical for the general warm-up programme ($\chi^2 = 12.04$, $p = 0.845$). Similarly, movement preparation or sport-specific drills showed no significant association with age ($\chi^2 = 19.56$, $p = 0.358$). Cool-down exercises ($\chi^2 = 14.53$, $p = 0.694$), Balance and core-stability training ($\chi^2 = 22.67$, $p = 0.204$). (Table 8B).

Table 8A: Association of Age and Sport Injury Prevention Strategies among Amateur Football Players.

Injury Prevention Strategy	Age Group (years)	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	X ²	P
Strength Training on the Pitch	18–25	26 (8.7%)	34 (11%)	32 (10.2%)	40 (13.5%)	35 (11.8%)	32 (10.72%)	48 (16.8%)	15.7	0.616
	26–30	4 (1.3%)	7 (2.3%)	6 (2.3%)	8 (2.7%)	5 (1.6%)	7 (2.3)	6 (4.2%)		
	31–35	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.6%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Strength Training in a Separate Session	18–25	26 (8.7%)	34 (11%)	32 (10.2%)	40 (13.5%)	35 (11.8%)	32 (10.72%)	48 (16.8%)	15.7	0.616
	26–30	4 (1.3%)	7 (2.3%)	6 (2.3%)	8 (2.7%)	5 (1.6%)	7 (2.3)	6 (4.2%)		
	31–35	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.6%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Flexibility Training on the Pitch	18–25	30 (10.1%)	38 (12%)	37 (12.2%)	31 (10.4%)	33 (11.1%)	36 (12.2%)	42 (14.1%)	23.8	0.165
	26–30	10 (3.3%)	8 (2.7%)	19 (6.3%)	6 (2.0%)	7 (2.3%)	3 (1.3%)	2 (0.1%)		
	31–35	2 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
Flexibility Training Before/After Training	18–25	30 (10.1%)	38 (12%)	37 (12.2%)	31 (10.4%)	33 (11.1%)	36 (12.2%)	42 (14.1%)	23.7	0.165
	26–30	10 (3.3%)	8 (2.7%)	10 (3.3%)	6 (2.0%)	7 (2.3%)	3 (1.3%)	2 (0.1%)		
	31–35	2 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
Flexibility Training in a Separate Session	18–25	35 (11.8%)	35 (11%)	46 (15.2%)	35 (11.8%)	29 (9.8%)	32 (10.2%)	35 (11.8%)	19.3	0.374
	26–30	6 (2.0%)	8 (2.7%)	7 (2.3%)	10 (3.3%)	1 (0.3%)	5 (1.0)	7 (6.2%)		
	31–35	2 (0.6%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
	36–40	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Sprint Training	18–25	35 (11.8%)	35 (11%)	46 (15.2%)	35 (11.8%)	29 (9.8%)	32 (10.2%)	35 (11.8%)	19.3	0.374
	26–30	6 (2.0%)	8 (2.7%)	7 (2.3%)	10 (3.3%)	1 (0.3%)	5 (1.0)	7 (6.2%)		
	31–35	2 (0.6%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (2.3%)		
	36–40	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Specific Prevention Protocol	18–25	28 (9.4%)	38 (12%)	30 (10.2%)	30 (10.1%)	41 (13.8%)	39 (13.42%)	41 (13.1%)	14.5	0.694
	26–30	6 (2.0%)	4 (1.3%)	8 (2.3%)	3 (1.0%)	12 (4.0%)	7 (2.0)	8 (6.2%)		
	31–35	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0)	0 (0.0%)		

Table 8B: Association between Age and Sport Injury Prevention Strategies of FIFA 11+, Warm-up, Movement Preparation and Cool down, Balance and Core Stability Training, Other Prevention Measures among Amateur Football Players.

Injury Prevention Strategy	Age Group (years)	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	X ²	p-value
FIFA 11+	18–25	35 (11.8%)	29 (9.8%)	39 (13.2%)	46 (15.5%)	32 (10.8%)	33 (11.2%)	33 (11.1%)	12.0	0.845
	26–30	3 (1.0%)	4 (1.3%)	10 (3.3%)	7 (2.3%)	6 (2.0%)	9 (3.0%)	7 (2.4%)		
	31–35	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
	36–40	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
General Warm-up Programme	18–25	35 (11.8%)	29 (9.8%)	39 (13.2%)	46 (15.5%)	32 (10.8%)	33 (11.2%)	33 (11.1%)	12.0	0.845
	26–30	3 (1.0%)	4 (1.3%)	10 (3.3%)	7 (2.3%)	6 (2.0%)	9 (3.0%)	7 (2.4%)		
	31–35	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
	36–40	0 (0.0%)	0 (0.0%)	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
Movement Preparation / Sport-specific Drills	18–25	37 (12.5%)	33 (11%)	30 (10.2%)	37 (12.5%)	36 (12.1%)	41 (13.2%)	33 (11.8%)	19.7	0.358
	26–30	7 (2.3%)	5 (1.6%)	11 (3.3%)	6 (2.0%)	7 (2.3%)	4 (1.3%)	6 (2.5%)		
	31–35	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0)	0 (0.3%)		
	36–40	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Cool Down	18–25	28 (9.4%)	38 (12%)	30 (10.2%)	30 (10.1%)	41 (13.8%)	39 (13.42%)	41 (13.1%)	14.5	0.694
	26–30	6 (2.0%)	4 (1.3%)	8 (2.3%)	3 (1.0%)	12 (4.0%)	7 (2.0)	8 (6.2%)		
	31–35	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0 (0.0)	1 (0.3%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	1 (0.3%)	0 (0.0)	0 (0.0%)		
Balance and Core Stability Training	18–25	27 (9.1%)	25 (8.4%)	33 (11.2%)	45 (15.2%)	33 (11.1%)	44 (14.12%)	40 (13.8%)	22.7	0.204
	26–30	8 (2.7%)	7 (2.3%)	8 (2.3%)	3 (1.0%)	7 (2.3%)	7 (2.7)	8 (8.2%)		
	31–35	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	2 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.6%)	0 (0.0%)	0 (0.0)	0 (0.0%)		
Other Prevention Measures	18–25	27 (9.1%)	25 (8.4%)	33 (11.2%)	45 (15.2%)	33 (11.1%)	44 (14.12%)	40 (13.8%)	22.8	0.204
	26–30	8 (2.7%)	7 (2.3%)	8 (2.3%)	3 (1.0%)	7 (2.3%)	7 (2.7)	8 (8.2%)		
	31–35	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.3%)	0 (0.0%)	2 (0.0)	0 (0.0%)		
	36–40	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.6%)	0 (0.0%)	0 (0.0)	0 (0.0%)		

4.1.5: Association between Sex and Injury Prevention Strategies

The association between sex and the extent of practice of injury prevention strategies among amateur football players reveals that there were significant associations for the general warm-up programme ($\chi^2 = 14.088$, $p = 0.029$), and the specific prevention protocol ($\chi^2 = 15.163$, $p = 0.019$) with gender. Strength training on the pitch ($\chi^2 = 5.946$, $p = 0.429$), and strength training in a separate session ($\chi^2 = 5.028$, $p = 0.540$) no significant sex-related differences were observed. Similarly, flexibility training on the pitch ($\chi^2 = 7.669$, $p = 0.263$), before or after training ($\chi^2 = 5.296$, $p = 0.506$), and in a separate session ($\chi^2 = 8.570$, $p = 0.199$) did not differ significantly by sex. The same trend was observed for sprint training ($\chi^2 = 6.348$, $p = 0.385$), balance and core stability training ($\chi^2 = 6.661$, $p = 0.353$), and other prevention measures ($\chi^2 = 1.966$, $p = 0.923$), (Table 9A).

For all other strategies such as FIFA 11+ ($\chi^2 = 4.522$, $p = 0.606$), these findings indicate that male and female players differed significantly in how often they engaged in general warm-up and specific prevention routines, with male players generally reporting higher frequencies of participation, movement preparation or sport-specific drills ($\chi^2 = 5.794$, $p = 0.447$), cool-down exercises ($\chi^2 = 4.816$, $p = 0.568$), (Table 9B).

Table 9A: Association between Sex and Injury Prevention Strategies among Amateur Football Players.

Injury Prevention Strategy	Sex	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	χ^2	p-value
Strength Training on the Pitch	Male	21 (7.1%)	25 (8.6%)	26 (8.8%)	25 (8.5)	28 (9.5%)	24 (8.1%)	31 (10.5%)	5.946	0.429
	Female	10 (3.3%)	17 (5.7%)	12 (4.1%)	25 (4.5)	13 (4.4%)	15 (5.1%)	26 (8.8%)		
Strength Training in a Separate Session	Male	34 (11.5%)	20 (6.8%)	24 (8.1%)	20 (8.8)	30 (10.1%)	32 (10.9%)	20 (6.8%)	5.028	0.54
	Female	19 (6.4%)	19 (6.4%)	18 (6.1%)	18 (6.1)	20 (6.8%)	16 (5.4%)	8 (2.7%)		
Flexibility Training on the Pitch	Male	25 (8.5%)	27 (9.1%)	23 (7.8%)	27 (7.1)	25 (8.5%)	28 (9.5%)	25 (8.5%)	7.669	0.263
	Female	17 (5.7%)	19 (6.4%)	24 (8.1%)	10 (8.4)	17 (5.7%)	11 (3.7%)	20 (6.8%)		
Flexibility Training Before/After Training	Male	27 (9.1%)	23 (7.8%)	29 (9.9%)	31 (9.5)	22 (7.4%)	30 (10.1%)	18 (6.1%)	5.296	0.506
	Female	13 (4.4%)	19 (6.4%)	21 (7.1%)	16 (7.4)	23 (7.8%)	17 (5.7%)	9 (3.0%)		
Flexibility Training in a Separate Session	Male	28 (9.5%)	31 (10.5%)	33 (11.2%)	25 (11.5)	22 (7.4%)	19 (6.4%)	22 (7.4%)	8.57	0.199
	Female	15 (5.1%)	13 (4.4%)	21 (7.1%)	20 (7.8)	8 (2.7%)	18 (6.01%)	23 (7.8%)		
Sprint Training	Male	25 (8.1%)	24 (8.1%)	23 (7.8%)	29 (7.8)	25 (8.5%)	30 (10.1%)	24 (8.1%)	6.348	0.385
	Female	13 (4.4%)	16 (5.4%)	22 (7.4%)	13 (7.4)	11 (3.7%)	20 (6.8%)	23 (7.8%)		
Specific Prevention Protocol	Male	22 (7.4%)	35 (11.9%)	22 (7.4%)	29 (7.8)	23 (7.8%)	26 (8.8%)	23 (7.8%)	15.163	0.019*
	Female	26 (8.8%)	13 (4.4%)	21 (7.1%)	8 (7.7)	16 (5.4%)	22 (7.4%)	12 (4.1%)		
Balance and Core Stability Training	Male	21 (7.1%)	26 (8.9%)	24 (8.1%)	29 (8.8)	23 (7.8%)	30 (10.1%)	27 (9.1%)	6.661	0.353
	Female	14 (4.7%)	6 (2.0%)	17 (5.7%)	22 (5.4)	17 (5.8%)	23 (7.8%)	19 (6.4%)		
Other Prevention Measures	Male	29 (9.8%)	28 (9.5%)	23 (7.8%)	28 (7.5)	18 (6.1%)	22 (7.4%)	32 (10.8%)	1.966	0.923
	Female	18 (6.1%)	20 (6.7%)	13 (4.4%)	16 (4.4)	13 (4.4%)	20 (6.8%)	18 (6.1%)		

Table 9B: Association between Sex and Injury Prevention Strategies of FIFA 11+, Warm-up, Movement Preparation and Cool down among Amateur Football Players.

Injury Prevention Strategy	Sex	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	χ^2	p-value
FIFA 11+	Male	20 (6.8%)	25 (8.4%)	30 (10.1%)	31 (10.5)	23 (7.8%)	25 (8.5%)	26 (8.8%)	4.522	0.606
	Female	18 (6.1%)	8 (2.7%)	21 (7.1%)	23 (7.8)	15 (5.1%)	17 (5.7%)	16 (5.4%)		
General Warm-up Programme	Male	24 (8.1%)	31 (10.5%)	22 (7.4%)	22 (7.4)	28 (9.5%)	31 (10.5%)	22 (7.4%)	14.088	0.029 *
	Female	28 (9.5%)	10 (3.4%)	13 (4.4%)	24 (4.1)	12 (4.1%)	15 (5.1%)	16 (5.4%)		
Movement Preparation / Sport-specific Drills	Male	28 (9.5%)	24 (8.1%)	26 (8.8%)	21 (8.1)	31 (10.5%)	28 (9.5%)	22 (7.4%)	5.794	0.447
	Female	17 (5.7%)	14 (4.8%)	15 (5.1%)	22 (5.4)	13 (4.4%)	17 (5.7%)	20 (6.8%)		
Cool Down	Male	23 (7.8%)	27 (9.1%)	26 (8.8%)	20 (8.8)	32 (10.8%)	29 (9.8%)	23 (7.8%)	4.816	0.568
	Female	11 (3.7%)	16 (5.4%)	13 (4.4%)	14 (4.7)	22 (7.4%)	17 (5.7%)	25 (8.5%)		

4.1.6 Association between Playing Position and Extent of Practice of Injury Prevention Strategies

The analysis also revealed no significant association between playing position and strength training on the pitch ($\chi^2 = 23.351$, $p = 0.801$) or strength training in a separate session ($\chi^2 = 25.743$, $p = 0.688$). Flexibility training whether performed on the pitch ($\chi^2 = 31.293$, $p = 0.401$), before or after training ($\chi^2 = 21.601$, $p = 0.868$), or in a separate session ($\chi^2 = 31.150$, $p = 0.408$) showed no significant association with playing position. No significant associations were also found for sprint training ($\chi^2 = 23.420$, $p = 0.798$), or specific prevention protocols ($\chi^2 = 36.428$, $p = 0.194$). Similarly, balance and core stability training ($\chi^2 = 26.866$, $p = 0.630$) and other prevention measures ($\chi^2 = 38.290$, $p = 0.142$) showed no statistically significant associations with playing position. (Table 10A)

For the FIFA 11+ programme, no significant association was observed between playing position and practice frequency ($\chi^2 = 40.081$, $p = 0.103$). Similarly, there was no significant association for the general warm-up programme ($\chi^2 = 35.621$, $p = 0.221$) or movement preparation/sport-specific drills ($\chi^2 = 19.964$, $p = 0.917$), cool-down activities ($\chi^2 = 22.383$, $p = 0.840$). (Table 10B)

Table 20A: Association between Playing Position and Injury Prevention Strategy among Amateur Football Players.

Injury Prevention Strategy	Playing Position	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	χ^2	p-value
Flexibility Training Before/After Training	Goalkeeper	4 (1.4%)	4 (1.4%)	7 (2.4%)	6 (2.0%)	6 (2.0%)	5 (1.7%)	4 (1.4%)	21.601	0.868
	Defender	15 (5.1%)	12 (4.1%)	17 (5.7%)	17 (5.7%)	21 (7.1%)	15 (5.1%)	14 (4.7%)		
	Midfielder	10 (3.4%)	15 (5.1%)	13 (4.4%)	15 (5.0%)	9 (3.0%)	11 (3.7%)	5 (1.7%)		
	Forward	10 (3.4%)	10 (3.4%)	12 (4.1%)	7 (2.4%)	9 (3.0%)	15 (5.1%)	4 (1.4%)		
Flexibility Training in a Separate Session	Goalkeeper	7 (2.4%)	3 (1.0%)	7 (2.4%)	6 (2.0%)	1 (0.3%)	5 (1.7%)	7 (2.4%)	31.15	0.408
	Defender	11 (3.7%)	18 (6.1%)	22 (7.4%)	16 (5.4%)	15 (5.1%)	15 (5.1%)	14 (4.7%)		
	Midfielder	11 (3.7%)	17 (5.7%)	11 (3.7%)	14 (4.7%)	5 (1.7%)	10 (3.4%)	10 (3.4%)		
	Forward	13 (4.4%)	6 (2.0%)	13 (4.4%)	7 (2.4%)	9 (3.0%)	5 (1.7%)	14 (4.7%)		
Sprint Training	Goalkeeper	4 (1.4%)	4 (1.4%)	4 (1.4%)	4 (1.4%)	6 (2.0%)	7 (2.4%)	7 (2.4%)	23.42	0.798
	Defender	14 (4.7%)	17 (5.7%)	17 (5.7%)	19 (6.4%)	10 (3.4%)	15 (5.1%)	19 (6.4%)		
	Midfielder	7 (2.4%)	10 (3.4%)	12 (4.1%)	7 (2.4%)	12 (4.1%)	18 (6.1%)	12 (4.1%)		
	Forward	11 (3.7%)	8 (2.7%)	10 (3.4%)	12 (4.1%)	7 (2.4%)	10 (3.4%)	9 (3.1%)		
Specific Prevention Protocol	Goalkeeper	2 (0.7%)	8 (2.7%)	7 (2.4%)	5 (1.7%)	6 (2.1%)	6 (2.0%)	2 (0.7%)	36.428	0.194
	Defender	19 (6.4%)	22 (7.4%)	15 (5.1%)	12 (4.1%)	8 (2.7%)	18 (6.1%)	17 (5.8%)		
	Midfielder	13 (4.4%)	8 (2.7%)	11 (3.7%)	7 (2.4%)	14 (4.7%)	16 (5.4%)	9 (3.0%)		
	Forward	13 (4.4%)	10 (3.4%)	9 (3.0%)	10 (3.4%)	10 (3.4%)	8 (2.7%)	7 (2.4%)		
Balance and Core Stability Training	Goalkeeper	5 (1.7%)	2 (0.7%)	7 (2.4%)	3 (1.0%)	6 (2.0%)	7 (2.4%)	6 (2.0%)	26.866	0.63
	Defender	14 (4.7%)	13 (4.4%)	17 (5.7%)	21 (7.1%)	14 (4.7%)	17 (5.7%)	15 (5.0%)		
	Midfielder	13 (4.4%)	6 (2.0%)	12 (4.1%)	11 (3.7%)	11 (3.7%)	13 (4.4%)	12 (4.0%)		
	Forward	3 (1.0%)	10 (3.4%)	5 (1.7%)	14 (4.7%)	9 (3.0%)	15 (5.1%)	11 (3.7%)		
Other Prevention Measures	Goalkeeper	2 (0.7%)	7 (2.4%)	4 (1.4%)	6 (2.0%)	7 (2.4%)	5 (1.7%)	5 (1.7%)	38.29	0.142
	Defender	18 (6.1%)	19 (6.4%)	9 (3.0%)	16 (5.4%)	15 (5.1%)	15 (5.1%)	19 (6.4%)		
	Midfielder	13 (4.4%)	12 (4.1%)	10 (3.4%)	9 (3.0%)	6 (2.0%)	11 (3.7%)	17 (5.7%)		
	Forward	13 (4.4%)	9 (3.0%)	10 (3.4%)	13 (4.4%)	2 (0.7%)	11 (3.7%)	9 (3.0%)		

Table 10B: Association between Playing Position and Injury Prevention Strategy among Amateur Football Players of FIFA 11+, Warm-up, Movement Preparation and Cool down among Amateur Football Players.

Injury Prevention Strategy	Playing Position	None (1×)	Once (2×)	Twice (3×)	3×/week (4×)	4×/week (5×)	5×/week (6×)	6×/week (7×)	χ^2	p-value
FIFA 11+	Goalkeeper	4 (1.4%)	2 (0.7%)	8 (2.7%)	9 (3.0%)	2 (0.7%)	9 (3.0%)	2 (0.7%)	40.081	0.103
	Defender	15 (5.1%)	18 (6.1%)	18 (6.1%)	24 (8.1%)	8 (2.7%)	14 (4.7%)	14 (4.7%)		
	Midfielder	10 (3.4%)	5 (1.7%)	14 (4.7%)	14 (4.7%)	16 (5.4%)	7 (2.4%)	12 (4.1%)		
	Forward	9 (3.1%)	8 (2.7%)	10 (3.4%)	7 (2.4%)	10 (3.4%)	12 (4.1%)	11 (3.7%)		
General Warm-up Programme	Goalkeeper	4 (1.4%)	7 (2.4%)	4 (1.4%)	8 (2.7%)	4 (1.4%)	2 (0.7%)	7 (2.4%)	35.621	0.221
	Defender	25 (8.5%)	11 (3.7%)	10 (3.4%)	13 (4.4%)	12 (4.1%)	23 (7.8%)	17 (5.7%)		
	Midfielder	12 (4.1%)	13 (4.4%)	12 (4.1%)	13 (4.4%)	10 (3.4%)	10 (3.4%)	8 (2.7%)		
	Forward	9 (3.0%)	9 (3.0%)	9 (3.0%)	12 (4.1%)	14 (4.7%)	8 (2.7%)	6 (2.4%)		
Movement Preparation / Sport-specific Drills	Goalkeeper	8 (2.7%)	4 (1.4%)	5 (1.7%)	4 (1.4%)	4 (1.4%)	5 (1.7%)	6 (2.1%)	19.964	0.917
	Defender	14 (4.7%)	15 (5.1%)	16 (5.4%)	19 (6.4%)	18 (6.1%)	14 (4.7%)	15 (5.1%)		
	Midfielder	13 (4.4%)	11 (3.7%)	12 (4.1%)	12 (4.1%)	7 (2.4%)	11 (3.7%)	12 (4.1%)		
	Forward	9 (3.0%)	6 (2.0%)	7 (2.4%)	8 (2.7%)	14 (4.7%)	14 (4.7%)	9 (3.0%)		
Cool Down	Goalkeeper	4 (1.4%)	5 (1.7%)	8 (2.7%)	3 (1.0%)	4 (1.4%)	7 (2.4%)	5 (1.7%)	22.383	0.84
	Defender	9 (3.0%)	14 (4.7%)	16 (5.4%)	17 (5.7%)	22 (7.4%)	13 (4.4%)	20 (6.8%)		
	Midfielder	11 (3.7%)	11 (3.7%)	8 (2.7%)	6 (2.0%)	14 (4.8%)	13 (4.4%)	15 (5.1%)		
	Forward	10 (3.4%)	12 (4.1%)	7 (2.4%)	8 (2.7%)	12 (4.1%)	11 (3.7%)	7 (2.4%)		

4.1.7 Association between Age and level of Awareness among Respondents

For the perceived risk of sustaining injury as a footballer, no significant association with age was observed ($\chi^2 = 5.987$, $p = 0.741$). Likewise, there was no significant association between age and the most common types of injuries frequently experienced ($\chi^2 = 18.054$, $p = 0.260$). Similarly, no significant Association was found between age and body parts most exposed to injury ($\chi^2 = 1.280$, $p = 0.973$) or the types of injuries considered most important to prevent ($\chi^2 = 11.262$, $p = 0.734$).

In addition, the perceived importance of preventing injuries was not associated with age ($\chi^2 = 15.430$, $p = 0.080$). Likewise, no significant associations were found between age and awareness of specific injuries footballers are exposed to, including head ($p = 0.637$), thigh ($p = 0.617$), knee ($p = 0.149$), ankle ($p = 0.916$), groin ($p = 0.522$), or other injuries ($p = 0.355$). For the common reasons for injuries, such as too little training ($p = 0.340$), hard tackles ($p = 0.453$), and poor pitch quality ($p = 0.980$), no significant associations with age were found. (Table 11A)

Perceptions and beliefs about injury prevention also showed no significant associations with age. For example, agreement with the statement “It’s more important to play than to do prevention” was not significantly associated with age ($\chi^2 = 8.652$, $p = 0.895$), nor was agreement with “Coach’s motivation affects players’ motivation to prevent injuries” ($\chi^2 = 7.808$, $p = 0.931$).

Likewise, the feelings about injury prevention strategies were not influenced by age ($\chi^2 = 11.958$, $p = 0.682$), and no significant association was found between age and whether players had received advice about injury prevention programmes ($\chi^2 = 4.249$, $p = 0.643$) or had performed injury prevention strategies during the season ($\chi^2 = 3.760$, $p = 0.709$).

In terms of specific types of injuries players attempted to prevent, age showed no significant Association for head ($p = 0.600$), thigh ($p = 0.554$), knee ($p = 0.816$), ankle ($p = 0.646$), groin ($p = 0.174$), or other injuries ($p = 0.245$). Similarly, availability of medical support was not

associated with age for team doctor ($p = 0.937$), massage therapist ($p = 0.727$), sports scientist ($p = 0.451$), access to doctor ($p = 0.621$), access to physiotherapist ($p = 0.837$), access to sports scientist ($p = 0.635$), or lack of medical support ($p = 0.668$). (Table 11B)

Table 11A: Association between Age and Level of Awareness among Respondents

S/N	Item	Response Options	18–25 yrs (n)	26–30 yrs (n)	31–35 yrs (n)	36–40 yrs (n)	χ^2	p-value
1	Risk of sustaining injury as a footballer	High	61	10	1	0	5.987	0.741
		Moderate	61	11	2	1		
		Low	60	11	0	0		
		Don't know	65	14	0	1		
2	Most common type of injury frequently exposed to	Sprain	46	4	1	0	18.054	0.260
		Strain	41	5	1	0		
		Dislocation	43	9	0	0		
		Contusion	37	10	1	2		
		Fracture	31	6	0	0		
		Others	49	12	0	0		
3	Body part most exposed to injury (example)	Head	218	42	3	2	1.280	0.973
		Neck	25	3	0	0		
		Shoulder	4	1	0	0		
		Elbow	7	0	0	0		
		Thigh	4	1	0	0		
		Hip	4	1	0	0		
		Knee	10	2	0	0		
		Ankle	8	2	0	0		
4	Injuries most important to prevent	Head	41	7	1	0	11.262	0.734
		Thigh	33	8	1	0		
		Knee	48	8	1	0		
		Ankle	50	5	0	0		
		Groin	40	11	0	1		
		Others	35	7	0	1		
5	Importance of preventing injuries	Very important	61	14	1	1	15.430	0.080
		Moderately important	77	6	0	0		
		Not very important	69	13	0	1		
		Don't know	40	13	2	0		
6	Injury's footballers are exposed to	Head (Yes)	88	19	1	0	1.698	0.637
		Thigh (Yes)	136	26	2	2	1.790	0.617
		Knee (Yes)	112	22	3	0	5.330	0.149
		Ankle (Yes)	115	21	2	1	0.511	0.916
		Groin (Yes)	122	23	1	0	2.250	0.522
		Others (Yes)	90	22	2	1	3.247	0.355
7	Common reasons for injuries	Too little training (Yes)	79	18	0	0	3.356	0.340
		Hard tackles (Yes)	104	23	1	0	2.624	0.453
		Poor pitch quality (Yes)	93	18	1	1	0.187	0.980

Table 11B.: Association between Age and Level of Awareness among Respondents

S/N	Item	Response Options	18–25 yrs (n)	26–30 yrs (n)	31–35 yrs (n)	36–40 yrs (n)	χ^2	p-value
8	Agreement: “It’s more important to play than to do prevention”	Fully agree	52	8	1	0	8.652	0.895
		Agree	32	7	0	0		
		Not sure	30	7	0	0		
		Disagree	54	8	1	0		
		Totally disagree	54	9	1	1		
		Don’t know	25	7	0	1		
9	Agreement: “Coach’s motivation affects players’ motivation to prevent injuries”	Fully agree	47	6	0	0	7.808	0.931
		Agree	37	8	1	1		
		Not sure	42	9	1	0		
		Disagree	36	6	0	0		
		Totally disagree	38	8	0	0		
		Don’t know	47	9	1	1		
10	Feelings about injury prevention strategies	Very positive	40	7	1	0	11.958	0.682
		Positive	28	11	0	0		
		Neutral	43	8	1	1		
		Negative	42	8	0	0		
		Very negative	55	7	1	1		
		Don’t know	39	5	0	0		
11	Received advice about injury prevention programmes	Yes	104	13	1	1	4.249	0.643
		No	74	18	1	0		
		Don’t know	69	15	1	1		
12	Performed injury prevention strategies this season	Yes	80	13	1	1	3.760	0.709
		No	80	18	0	1		
		Don’t know	87	15	2	0		
13	Types of injuries tried to prevent	Head (Yes)	39	5	1	0	1.867	0.600
		Thigh (Yes)	46	7	1	1	2.089	0.554
		Knee (Yes)	39	7	0	0	0.938	0.816
		Ankle (Yes)	36	9	0	0	1.658	0.646
		Groin (Yes)	31	11	0	0	4.969	0.174
		Others (Yes)	35	2	0	0	4.161	0.245
14	Medical support available in team	Team doctor	245	46	3	2	0.416	0.937
		Massage therapist	40	9	1	0	1.308	0.727
		Sports scientist	42	6	1	1	2.638	0.451
		Access to doctor (external)	83	15	0	1	1.770	0.621
		Access to physiotherapist (external)	20	5	0	0	0.854	0.837
		Access to sports scientist (external)	23	2	0	0	1.709	0.635
		No medical support	51	7	1	0	1.560	0.668

4.1.8 Association between Gender and Level of Awareness of Injury Prevention Strategies

The association between gender and level of awareness of injury prevention strategies among amateur football players shows there was no significant association between gender and perceived risk of sustaining injury as a footballer ($\chi^2 = 3.928$, $p = 0.269$), nor with the types of injuries frequently experienced ($\chi^2 = 2.456$, $p = 0.783$). Similarly, there were no significant associations between gender and awareness of body parts most exposed to injury including head ($p = 0.629$), neck ($p = 0.458$), shoulder ($p = 0.584$), elbow ($p = 0.223$), thigh ($p = 0.373$), hip ($p = 0.927$), knee ($p = 0.293$), and groin ($p = 0.628$). Although awareness of ankle injury approached significance ($p = 0.054$), the result remained statistically non-significant at the 0.05 level.

Gender was not significantly related to the types of injuries considered most important to prevent ($\chi^2 = 3.746$, $p = 0.587$), nor to perceptions about the importance of preventing injuries ($\chi^2 = 6.725$, $p = 0.081$). In the same vein, no significant associations were found between gender and awareness of injuries footballers are exposed to, such as head ($p = 0.582$), thigh ($p = 0.374$), knee ($p = 0.677$), ankle ($p = 0.820$), groin ($p = 0.505$), or others ($p = 0.708$). For common reasons for injuries, most items were non-significant, including too little training ($p = 0.246$), too much training ($p = 0.401$), too many matches ($p = 0.268$), hard tackles ($p = 0.753$), reduced mobility ($p = 0.168$), reduced recovery time ($p = 0.161$), artificial turf ($p = 0.613$), poor pitch quality ($p = 0.078$), and others ($p = 0.205$). However, a significant association was observed between gender and low muscle strength as a reason for injury ($\chi^2 = 4.712$, $p = 0.030$), suggesting that male and female players differed in their perception of low muscle strength as a contributing factor to injury. (Table 12A)

Regarding perceptions and attitudes, no significant associations were observed for agreement with the statements “It’s more important to play than to do prevention” ($\chi^2 = 3.041$, $p = 0.694$) or “Coach’s motivation affects players’ motivation to prevent injuries” ($\chi^2 = 5.335$, $p = 0.376$). Similarly, there was no significant association between gender and feelings about injury prevention strategies ($\chi^2 = 7.267$, $p = 0.202$).

On awareness and behavioural practices, a significant association was found between gender and receiving advice about injury prevention programmes ($\chi^2 = 6.784$, $p = 0.034$), with male players more likely to have received such advice than females. However, no significant association was observed between gender and having performed injury prevention strategies during the season ($\chi^2 = 2.956$, $p = 0.228$).

For the types of injuries players tried to prevent, a significant association was observed for knee injuries ($\chi^2 = 7.253$, $p = 0.007$), with males more likely to target knee injury prevention than females. Other types including head ($p = 0.206$), thigh ($p = 0.587$), ankle ($p = 0.696$), groin ($p = 0.370$), and others ($p = 0.900$) showed no significant association. In terms of medical support availability, gender was not significantly related to the presence of team doctor ($p = 0.251$), massage therapist ($p = 0.485$), sports scientist ($p = 0.703$), access to doctor ($p = 0.763$), access to physiotherapist ($p = 0.701$), access to sports scientist ($p = 0.701$), or absence of medical support ($p = 0.$) (Table 12B)

Table 12A: Association between Gender and Level of Awareness among Respondents

S/N Item	Response Options	Male (n)	Female (n)	χ^2	p-value
1 Risk of sustaining injury as a footballer	High	47	25	3.928	0.269
	Moderate	50	25		
	Low	38	33		
	Don't know	45	35		
2 Most common type of injury frequently exposed to	Sprain	31	20	2.456	0.783
	Strain	31	16		
	Dislocation	31	21		
	Contusion	33	17		
	Fracture	20	17		
	Others	34	27		
3 Body part most exposed to injury (example)	Head	16	12	0.927	0.629
	Neck	14	7	1.562	0.458
	Shoulder	4	4	1.075	0.584
	Elbow	15	4	2.998	0.223
	Thigh	9	3	1.974	0.373
	Hip	6	4	0.152	0.927
	Knee	10	12	2.457	0.293
	Ankle	8	5	5.823	0.054
	Groin	9	9	0.930	0.628
4 Injuries most important to prevent	Head	27	22	3.746	0.587
	Thigh	28	14		
	Knee	39	18		
	Ankle	30	25		
	Groin	30	22		
	Others	26	17		
5 Importance of preventing injuries	Very important	56	21	6.725	0.081
	Moderately important	46	37		
	Not very important	46	37		
	Don't know	32	23		
6 Injuries footballers are exposed to	Head	63	45	0.303	0.582
	Thigh	104	62	0.792	0.374
	Knee	81	56	0.173	0.677
	Ankle	83	56	0.052	0.820
	Groin	91	55	0.444	0.505
	Others	71	44	0.140	0.708
7 Common reasons for injuries	Too little training	54	43	1.347	0.246
	Too much training	57	32	0.704	0.401
	Too many matches	45	23	1.228	0.268
	Hard tackles	76	52	0.099	0.753
	Low muscle strength	87	42	4.712	0.030*
	Reduced mobility	42	36	1.899	0.168
	Reduced recovery time	74	39	1.967	0.161
	Artificial turf	53	38	0.256	0.613
	Poor pitch quality	64	54	3.105	0.078
	Others	36	31	1.608	0.205

Table 12B: Association between Gender and Level of Awareness among Respondents

S/N	Item	Response Options	Male (n)	Female (n)	χ^2	p-value
8	Agreement: "It's more important to play than to do prevention"	Fully agree	37	24	3.041	0.694
		Agree	20	19		
		Not sure	20	17		
		Disagree	41	22		
		Totally disagree	42	23		
		Don't know	20	13		
9	Agreement: "Coach's motivation affects players' motivation to prevent injuries"	Fully agree	35	18	5.335	0.376
		Agree	30	17		
		Not sure	32	20		
		Disagree	19	23		
		Totally disagree	27	19		
		Don't know	37	21		
10	Feelings about injury prevention strategies	Very positive	27	21	7.267	0.202
		Positive	19	20		
		Neutral	28	25		
		Negative	34	16		
		Very negative	41	23		
		Don't know	31	13		
11	Received advice about injury prevention programmes	Yes	78	41	6.784	0.034*
		No	60	33		
		Don't know	42	44		
12	Performed injury prevention strategies this season	Yes	60	35	2.956	0.228
		No	53	46		
		Don't know	67	37		
13	Types of injuries tried to prevent	Head	31	14	1.596	0.206
		Thigh	35	20	0.295	0.587
		Knee	36	10	7.253	0.007*
		Ankle	26	19	0.153	0.696
		Groin	28	14	0.802	0.370
		Others	22	15	0.016	0.900
14	Medical support available in team	Team doctor	178	118	1.320	0.251
		Physiotherapist	– (constant)	–	–	–
		Massage therapist	28	22	0.487	0.485
		Sports scientist	29	21	0.145	0.703
		Access to doctor (external)	61	38	0.091	0.763
		Access to physiotherapist (external)	16	9	0.148	0.701
		Access to sports scientist (external)	16	9	0.148	0.701
		No medical support	37	22	0.164	0.685

4.1.9 Association between Playing Positions and Level of Awareness

The association between playing position and level of awareness of injury prevention strategies among amateur football players shows no significant association was observed between playing position and the perceived risk of sustaining injury as a footballer ($\chi^2 = 19.467$, $p = 0.193$) or with the types of injuries most frequently experienced ($\chi^2 = 30.605$, $p = 0.202$).

Similarly, there was no significant Association between playing position and body parts most exposed to injury, including head ($p = 0.734$), neck ($p = 0.818$), shoulder ($p = 0.258$), elbow ($p = 0.965$), thigh ($p = 0.313$), hip ($p = 0.985$), knee ($p = 0.764$), ankle ($p = 0.759$), and groin ($p = 0.081$). Awareness of injuries considered most important to prevent also showed no significant association with playing position ($\chi^2 = 32.431$, $p = 0.146$).

Similarly, no significant Association was observed between playing position and the perceived importance of injury prevention ($\chi^2 = 13.670$, $p = 0.551$). No associations were found between playing position and awareness of specific injuries footballers are exposed to, such as head ($p = 0.910$), thigh ($p = 0.528$), knee ($p = 0.865$), ankle ($p = 0.638$), groin ($p = 0.428$), or others ($p = 0.250$). Similarly, common reasons for injuries including too little training ($p = 0.469$), too much training ($p = 0.319$), too many matches ($p = 0.777$), hard tackles ($p = 0.657$), low muscle strength ($p = 0.064$), reduced mobility ($p = 0.646$), reduced recovery time ($p = 0.642$), artificial turf ($p = 0.835$), poor pitch quality ($p = 0.311$), and others ($p = 0.800$) were not significantly associated with playing position. Perceptions of injury prevention also showed no significant associations. (Table 13A)

Agreement with statements such as “It’s more important to play than to do prevention” ($\chi^2 = 31.490$, $p = 0.173$) and “Coach’s motivation affects players’ motivation to prevent injuries” ($\chi^2 = 18.909$, $p = 0.801$) did not differ significantly by position.

Likewise, feelings toward injury prevention strategies were not associated with playing position ($\chi^2 = 16.337$, $p = 0.904$).

No significant associations were found between playing position and whether participants had received advice about injury prevention programmes ($\chi^2 = 6.952$, $p = 0.730$) or had performed injury prevention strategies during the season ($\chi^2 = 9.327$, $p = 0.501$). Similarly, types of injuries players tried to prevent—including head ($p = 0.628$), thigh ($p = 0.175$), knee ($p = 0.664$), ankle ($p = 0.736$), groin ($p = 0.171$), and others ($p = 0.605$)—showed no significant associations with playing position.

Regarding medical support availability, no significant associations were observed between playing position and access to a team doctor ($p = 0.904$), massage therapist ($p = 0.059$), sports scientist ($p = 0.998$), external doctor ($p = 0.850$), external physiotherapist ($p = 0.134$), or external sports scientist ($p = 0.779$). Although the association for massage therapist approached significance ($p = 0.059$), it did not reach the 0.05 threshold. Similarly, lack of medical support was not significantly associated with position ($p = 0.353$). (Table 13B)

Table 13A: Association between Playing Positions and Level of Awareness

S/N Item	Response Options	Goalkeeper (n)	Defender (n)	Midfielder (n)	Forward (n)	χ^2	p-value
1 Risk of sustaining injury as a footballer	High	9	26	12	21	19.467	0.193
	Moderate	11	26	20	17		
	Low	7	27	21	16		
	Don't know	9	32	25	13		
2 Most common type of injury frequently exposed to	Sprain	6	21	12	12	30.605	0.202
	Strain	6	18	12	8		
	Dislocation	5	22	11	14		
	Contusion	8	14	16	12		
	Fracture	5	16	5	8		
	Others	6	20	22	13		
3 Body part most exposed to injury (example)	Head	2	9	8	9	6.906	0.734
	Neck	1	9	6	4		
	Shoulder	1	3	2	3		
	Elbow	1	9	4	5		
	Thigh (Hamstrings/Quadriceps)	1	4	5	2		
	Hip	0	4	3	3		
	Knee	0	9	6	7		
	Ankle	1	5	2	4		
	Groin	0	6	5	4		
	Others	0	6	5	4		
4 Injuries most important to prevent	Head	8	7	13	11	32.431	0.146
	Thigh	3	14	13	11		
	Knee	5	26	14	11		
	Ankle	5	24	14	11		
	Groin	5	24	10	12		
	Others	10	16	11	5		
5 Importance of preventing injuries	Very important	8	26	19	21	13.670	0.551
	Moderately important	10	35	17	19		
	Not very important	11	28	22	21		
	Don't know	7	22	20	6		
6 Injuries footballers are exposed to	Head	2	38	30	23	1.524	0.910
	Thigh	2	64	48	33		
	Knee	2	48	37	31		
	Ankle	3	57	36	29		
	Groin	3	47	41	34		
	Others	0	47	27	28		
7 Common reasons for injuries	Too little training	3	36	21	26	4.584	0.469
	Too much training	0	27	27	23		
	Too many matches	2	22	17	17		
	Hard tackles	1	47	37	27		
	Low muscle strength	1	52	24	36		
	Reduced mobility	1	27	22	17		
	Reduced recovery time	3	47	27	24		
	Artificial turf	1	34	22	20		
	Poor pitch quality	1	50	31	25		
	Others	2	21	19	16		

Table 13B: Association between Playing Positions and Level of Awareness

S/N	Item	Response Options	Goalkeeper (n)	Defender (n)	Midfielder (n)	Forward (n)	χ^2	p-value
8	Agreement: "It's more important to play than to do prevention"	Fully agree	5	23	14	17	31.490	0.173
		Agree	8	16	10	4		
		Not sure	8	18	6	5		
		Disagree	5	21	19	18		
		Totally disagree	6	21	19	16		
		Don't know	4	12	10	7		
9	Agreement: "Coach's motivation affects players' motivation"	Fully agree	4	17	16	14	18.909	0.801
		Agree	4	22	10	10		
		Not sure	7	20	12	12		
		Disagree	3	20	12	7		
		Totally disagree	9	13	15	8		
		Don't know	9	19	13	16		
10	Feelings about injury prevention strategies	Very positive	6	15	16	11	16.337	0.904
		Positive	6	15	10	8		
		Neutral	4	23	14	9		
		Negative	8	20	12	10		
		Very negative	8	21	17	16		
		Don't know	4	17	9	12		
11	Received advice about injury prevention programmes	Yes	13	40	34	29	6.952	0.730
		No	11	32	24	24		
		Don't know	12	39	20	14		
12	Performed injury prevention strategies this season	Yes	14	33	28	17	9.327	0.501
		No	11	38	22	28		
		Don't know	11	40	28	22		
13	Types of injuries tried to prevent	Head	1	15	16	7	3.472	0.628
		Thigh	1	19	22	8	7.681	0.175
		Knee	2	16	12	9	3.232	0.664
		Ankle	0	19	13	7	2.769	0.736
		Groin	2	18	7	7	7.737	0.171
		Others	0	11	13	7	3.624	0.605
14	Medical support available in team	Team doctor	5	36	78	66	1.577	0.904
		Massage therapist	0	5	16	6	10.634	0.059
		Sports scientist	1	6	13	11	0.255	0.998
		Access to doctor (external)	2	11	26	26	1.995	0.850
		Access to physiotherapist (external)	2	4	8	4	8.430	0.134
		Access to sports scientist (external)	0	1	7	7	2.484	0.779
		No medical support	0	8	10	17	5.550	0.353

4.2 Hypothesis Testing

1. There would be no significant association between age group and the FIFA 11+ programme among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.845

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

2. There would be no significant association between age group and participation in a general warm-up programme among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.845

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

3. There would be no significant association between age group and movement preparation/sport-specific drills among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.358

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

4. There would be no significant association between age group and strength training on the pitch among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.616

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

5. There would be no significant association between age group and strength training in a separate session among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.616

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

6. There would be no significant association between age group and flexibility training on the pitch among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.165

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

7. There would be no significant association between age group and flexibility training before or after training among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.165

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

8. There would be no significant association between age group and flexibility training in a separate session among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.374

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

9. There would be no significant association between age group and sprint training among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.374

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

10. There would be no significant association between age group and cool down among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.694

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

11. There would be no significant association between age group and use of a specific prevention protocol among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.694

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

12. There would be no significant association between age group and balance and core stability training among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.204

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

13. There would be no significant association between age group and other prevention measures among amateur football players.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.204

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

14. There would be no significant association between sex and frequency of performing the FIFA 11+ programme.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.606

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

15. There would be no significant association between sex and frequency of participation in a general warm-up programme.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.029

DECISION: Since the observed p value is less than 0.05, the null hypothesis is therefore

REJECTED.

16. There would be no significant association between sex and frequency of movement preparation / sport-specific drills.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.447

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

17. There would be no significant association between sex and frequency of strength training on the pitch.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.429

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

18. There would be no significant association between sex and frequency of strength training in a separate session.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.540

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

19. There would be no significant association between sex and frequency of flexibility training on the pitch.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.263

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

20. There would be no significant association between sex and frequency of flexibility training before/after training.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.506

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

21. There would be no significant association between sex and frequency of flexibility training in a separate session.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.199

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

22. There would be no significant association between sex and frequency of sprint training.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.385

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

23. There would be no significant association between sex and frequency of performing a cool-down.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.568

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

24. There would be no significant association between sex and use of a specific prevention protocol.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.019

DECISION: Since the observed p value is less than 0.05, the null hypothesis is therefore

REJECTED.

25. There would be no significant association between sex and frequency of balance and core stability training.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.353

Judgement: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

26. There would be no significant association between sex and frequency of other prevention measures.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.923

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

27. There would be no significant association between playing position and frequency of performing the FIFA 11+ programme.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.103

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

28. There would be no significant association between playing position and frequency of participation in a general warm-up programme.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.221

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

29. There would be no significant association between playing position and frequency of movement preparation / sport-specific drills.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.917

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

30. There would be no significant association between playing position and frequency of strength training on the pitch.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.801

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

31. There would be no significant association between playing position and frequency of strength training in a separate session.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.688

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

32. There would be no significant association between playing position and frequency of flexibility training on the pitch.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.401

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

33. There would be no significant association between playing position and frequency of flexibility training before/after training.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.868

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

34. There would be no significant association between playing position and frequency of flexibility training in a separate session.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.408

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

35. There would be no significant association between playing position and frequency of sprint training.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.798

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

36. There would be no significant association between playing position and frequency of performing a cool-down.

Test: Chi-square test

Stated p value: 0.05

Observed χ^2 : 22.383

Observed p value: 0.840

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

37. There would be no significant association between playing position and use of a specific prevention protocol.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.194

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

38. There would be no significant association between playing position and frequency of balance and core stability training.

Test: Chi-square test

Stated p value: 0.05

Observed χ^2 : 26.866

Observed p value: 0.630

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

39. There would be no significant association between playing position and frequency of other prevention measures.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.142

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

40. There would be no significant association between gender and perceived risk of sustaining injury as a footballer.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.269

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

41. There would be no significant association between gender and the most common type of injury respondents are frequently exposed to.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.783

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

42. There would be no significant association between gender and the body part most exposed to injury.

Test: Chi-square test (note: χ^2/p reported per response option)

Stated p value: 0.05

Observed p values (example options): Head p = 0.629; Neck p = 0.458; Shoulder p = 0.584; Elbow p = 0.223; Thigh p = 0.373; Hip p = 0.927; Knee p = 0.293; Ankle p = 0.054; Groin p = 0.628.

DECISION: No option shows $p < 0.05$ (ankle is close at $p = 0.054$). Therefore, the null hypothesis is **NOT REJECTED** (no significant association overall based on the provided option-level tests).

43. There would be no significant association between gender and which injuries are most important to prevent.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.587

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

44. There would be no significant association between gender and the perceived importance of preventing injuries.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.081

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

45. There would be no significant association between gender and the types of injuries footballers are exposed to.

Stated p value: 0.05

Observed p values (example options): Head p = 0.582; Thigh p = 0.374; Knee p = 0.677;

Ankle p = 0.820; Groin p = 0.505; Others p = 0.708.

DECISION: All reported p-values > 0.05, so the null hypothesis is **NOT REJECTED.**

46. There would be no significant association between gender and the common reasons for injuries reported by respondents.

Test: Chi-square test (option-level χ^2 /p reported)

Stated p value: 0.05

Observed p values (example options): Too little training $p = 0.246$; Too much training $p = 0.401$; Too many matches $p = 0.268$; Hard tackles $p = 0.753$; **Low muscle strength $\chi^2 = 4.712$, $p = 0.030$** ; Reduced mobility $p = 0.168$; Reduced recovery time $p = 0.161$; Artificial turf $p = 0.613$; Poor pitch quality $p = 0.078$; Others $p = 0.205$.

DECISION: Because **low muscle strength** shows a statistically significant association with gender ($p = 0.030 < 0.05$), the overall null hypothesis is **REJECTED**.

47. There would be no significant association between gender and agreement with the statement “It’s more important to play than to do prevention.”

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.694

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

48. There would be no significant association between gender and agreement with the statement “Coach’s motivation affects players’ motivation to prevent injuries.”

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.376

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

49. There would be no significant association between gender and respondents’ feelings about injury prevention strategies.

Stated p value: 0.05

Observed p value: 0.202

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

50. There would be no significant association between gender and whether respondents received advice about injury prevention programmes.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.034

DECISION: Since the observed p value is less than 0.05, the null hypothesis is therefore **REJECTED**.

51. There would be no significant association between gender and whether respondents performed injury prevention strategies this season.

Test: Chi-square test

Alpha level: 0.05

Observed p value: 0.228

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

52. There would be no significant association between gender and the types of injuries respondents tried to prevent.

Test: Chi-square test (option-level χ^2 /p reported)

Stated p value: 0.05

Observed p values (example options): Head p = 0.206; Thigh p = 0.587; **Knee $\chi^2 = 7.253$, p = 0.007**; Ankle p = 0.696; Groin p = 0.370; Others p = 0.900.

DECISION: Because the **knee** category shows a statistically significant association (p = 0.007 < 0.05), the overall null hypothesis is **REJECTED**.

53. There would be no significant association between gender and the medical support available in the team.

Test: Chi-square test (option-level χ^2/p reported; physiotherapist entry constant)

Stated p value: 0.05

Observed p values (example options): Team doctor p = 0.251; Massage therapist p = 0.485;

Sports scientist p = 0.703; Access to doctor (external) p = 0.763; Access to physiotherapist

(external) p = 0.701; No medical support p = 0.685.

DECISION: All reported p-values > 0.05, so the null hypothesis is **NOT REJECTED**.

54. There would be no significant association between playing position and the perceived risk of sustaining injury as a footballer.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.193

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

55. There would be no significant association between playing position and the most common type of injury footballers are frequently exposed to.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.202

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

56. There would be no significant association between playing position and the body part most exposed to injury.

Test: Chi-square test (option-level χ^2/p reported for some body regions)

Stated p value: 0.05

Observed χ^2 / example p values: Head $\chi^2 = 6.906$, $p = 0.734$; Neck $\chi^2 = 5.967$, $p = 0.818$;

Shoulder $\chi^2 = 12.421$, $p = 0.258$; Thigh $\chi^2 = 11.602$, $p = 0.313$; Groin $\chi^2 = 16.731$, $p = 0.081$

(all others $p > 0.05$).

DECISION: Since all reported p values are greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

57. There would be no significant association between playing position and the type of injury considered most important to prevent.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.146

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

58. There would be no significant association between playing position and the perceived importance of preventing injuries.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.551

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

59. There would be no significant association between playing position and the types of injuries footballers are exposed to.

Test: Chi-square test

Stated p value: 0.05

Observed χ^2 / example p values: Head $\chi^2 = 1.524$, $p = 0.910$; Thigh $\chi^2 = 4.147$, $p = 0.528$;

Knee $\chi^2 = 1.885$, $p = 0.865$; Others $\chi^2 = 6.622$, $p = 0.250$.

DECISION: Since all reported p values are greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

60. There would be no significant association between playing position and the perceived common reasons for injuries.

Test: Chi-square test (option-level χ^2/p reported)

Stated p value: 0.05

Observed χ^2 / example p values: Too little training $\chi^2 = 4.584$, $p = 0.469$; Too much training

$\chi^2 = 5.866$, $p = 0.319$; Low muscle strength $\chi^2 = 10.416$, $p = 0.064$; Poor pitch quality $\chi^2 =$

5.955, $p = 0.311$ (all others $p > 0.05$).

DECISION: Since all reported p values are greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

61. There would be no significant association between playing position and agreement with the statement "It's more important to play than to do prevention."

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.173

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

62. There would be no significant association between playing position and agreement with the statement “Coach’s motivation affects players’ motivation.”

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.801

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

63. There would be no significant association between playing position and players’ feelings about injury prevention strategies.

Test: Chi-square test

Observed p value: 0.904

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

64. There would be no significant association between playing position and whether players have received advice about injury prevention programmes.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.730

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore

NOT REJECTED.

65. There would be no significant association between playing position and performance of injury prevention strategies during the current season.

Test: Chi-square test

Stated p value: 0.05

Observed p value: 0.501

DECISION: Since the observed p value is greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

66. There would be no significant association between playing position and the types of injuries players have tried to prevent.

Test: Chi-square test (option-level χ^2 /p reported)

Stated p value: 0.05

Observed χ^2 / example p values: Thigh $\chi^2 = 7.681$, $p = 0.175$; Groin $\chi^2 = 7.737$, $p = 0.171$;

Others $\chi^2 = 3.624$, $p = 0.605$ (all $p > 0.05$).

DECISION: Since all reported p values are greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

67. There would be no significant association between playing position and the availability of medical support in the team.

Test: Chi-square test (option-level χ^2 /p reported)

Stated p value: 0.05

Observed χ^2 / example p values: Team doctor $\chi^2 = 1.577$, $p = 0.904$; Massage therapist $\chi^2 = 10.634$, $p = 0.059$; Access to physiotherapist (external) $\chi^2 = 8.430$, $p = 0.134$; No medical support $\chi^2 = 5.550$, $p = 0.353$.

DECISION: Since all reported p values are greater than 0.05, the null hypothesis is therefore **NOT REJECTED**.

CHAPTER FIVE

DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

5.1 Discussion

This study assessed the level of awareness and practice of sports injury prevention strategies among amateur football players in the University of Benin.

The socio-demographic results showed that most respondents were within the 18–25 years age category and were predominantly male. This finding was expected, as football participation at the university level is largely popular among young adults who are physically active and energetic (Pereira *et al.*, 2021). The male dominance observed aligns with the findings of Magdalene Ukuedojor. (2025), who reported similar gender disparity among student footballers. The low female representation could be due to cultural and social barriers that discourage female participation in competitive football in Nigeria (Nwankwo, 2023).

The distribution of players across field positions revealed that most respondents played as defenders or midfielders, suggesting these positions are more appealing due to their high involvement during play and less specialized demands compared to goalkeeping. This observation is in agreement with Sarmiento *et al.* (2024), who noted that amateur footballers tend to prefer positions that promote greater interaction and participation in gameplay.

Regarding awareness of sports injury prevention, nearly half of the respondents perceived a moderate to high risk of sustaining injuries during football. This reflects a fair level of awareness of injury risks, consistent with the findings of (Gurauet *al.* (2023b), who reported that amateur athletes generally acknowledge their vulnerability to injuries. However, the number of respondents with low or uncertain risk perception suggests that some players still underestimate

the likelihood of injuries, likely due to limited exposure to structured injury-prevention education within the university football program.

In terms of practical engagement, the study found moderate participation in general warm-up, strength, and flexibility exercises. This agrees with *Asgari et al. (2022)*, who reported that athletes who regularly engage in structured warm-up routines experience fewer injuries. However, the FIFA 11+ programme validated global injury-prevention protocol was rarely practiced. This could be attributed to low awareness of the programme or the absence of trained coaches to supervise its implementation. Similarly, the limited availability of physiotherapists or sports scientists among teams shows the lack of professional medical support in university football settings.

The moderate engagement in preventive practices observed in this study suggests that players recognize the importance of injury prevention but lack consistent guidance and supervision. This observation supports the findings of *Owoeye et al. (2017)* and *Geertsema et al. (2021)*, who reported similar moderate participation among amateur footballers. The fair participation in balance and core-stability exercises indicates a basic understanding of prevention concepts, though not always applied systematically.

No significant association was found between age and the extent of practice of injury-prevention strategies, implying that players across all age categories practiced similar routines. This finding aligns with *Ross et al. (2024)*, who observed no age-related differences in adherence to preventive programs. The uniformity may result from the narrow age range of university footballers and their shared training environment, suggesting that age alone does not influence prevention behaviours in this setting.

Significant associations were observed between sex and two prevention practices—general warm-up and specific preventive protocols, with males demonstrating slightly higher

participation rates. This finding is consistent with Shamlaye, Tomšovský & Fulcher. (2020), who noted that male players are more likely to engage in structured warm-ups due to greater emphasis on physical conditioning in male teams. The observed difference may also reflect disparities in access to training resources or coaching emphasis between male and female players.

No significant association was found between playing position and injury-prevention practices, indicating that preventive routines were similar across positions. This aligns with Bizzini & Dvorak, (2015) who observed that amateur teams rarely differentiate prevention programs by playing role. The absence of position-specific interventions, however, may limit the overall effectiveness of injury prevention since risk profiles vary across positions.

Similarly, no significant association was observed between gender and most aspects of awareness of injury-prevention strategies, except for low muscle strength, advice about injury prevention, and knee injury prevention, which showed significant differences. This suggests that both male and female players shared comparable knowledge levels, although males appeared more likely to receive preventive guidance and emphasize knee injury prevention. This agrees with Owoeye et al. (2017), who found minimal gender variation in prevention knowledge, but contrasts with John *et al.* (2025), who reported higher awareness among males due to structured coaching exposure. The minor gender differences noted here may result from the lack of formal injury-prevention education within the football program, highlighting the need for equal access to training for all players.

Finally, there was no significant association between playing position and the level of awareness of injury prevention strategies. Goalkeepers, defenders, midfielders, and forwards displayed comparable levels of awareness and attitudes toward prevention. This finding aligns with Gebert *et al.* (2019), who reported that amateur players generally receive team-wide rather than position-specific prevention education. The uniformity across playing positions may be

attributed to collective training structures, where all players undergo similar drills, suggesting that awareness is more influenced by team-level exposure than by positional demands.

5.2 Conclusion

This study concluded that amateur football players at the University of Benin demonstrated moderate awareness and practice of sports injury prevention strategies. Most players recognized the risk of injury and valued prevention, yet only a fraction consistently engaged in structured programs like FIFA 11+. The study found that age and playing position did not significantly influence practice, but male players were more involved in general warm-ups and specific prevention routines. The findings highlight the need for increased education, structured preventive programs, and improved access to physiotherapy services within university football.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made:

1. Physiotherapists and coaches should organize regular workshops and training sessions to educate amateur football players on the importance and correct execution of injury prevention strategies such as the FIFA 11+ programme.
2. The University Sports Department should integrate structured injury prevention programs into all training schedules for departmental and faculty teams.
3. Access to physiotherapy and sports medicine professionals should be expanded to provide guidance, monitoring, and injury management for players. Coaches should play a leading role in motivating and supervising players during warm-ups and preventive exercises.
4. Female players should be given equal access to injury prevention education and training resources to bridge the participation gap.

5.4 Implications for Further Study

Future studies should explore the barriers to effective implementation of injury prevention strategies among amateur footballers, including the influence of coaching styles, access to facilities, and player motivation. Additionally, longitudinal studies could be conducted to evaluate the effectiveness of specific injury prevention programs like FIFA 11+ on injury rates among university players. Further research may also examine the role of physiotherapists in promoting preventive culture in sports at tertiary institutions.

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APPENDIX A

QUESTIONNAIRE

The following questionnaire aims to assess the level of awareness and practice of sports injury prevention strategies among amateur football players in the University of Benin. Your honest and confidential responses are valuable to this research.

Informed Consent (Tick the box if willing to participate)

I have been informed about the nature and purpose of this study. I understand what my participation involves, and I agree to participate

SECTION 1: SOCIO DEMOGRAPHIC DATA

1. Age: (18-25) (26-30) (31-35) (36-40)
2. Sex: Male Female
3. Department: _____
4. Faculty: _____
5. Current Level: 200level 300level 400level 500level 600level
6. Playing Position: Goalkeeper Defender Midfielder Forward
7. Physical characteristics
a) Height (m) _____ b) Weight (Kg) _____ c) BMI (Kg/m²) _____

SECTION 2: LEVEL OF AWARENESS OF SPORT INJURY PREVENTION STRATEGIES

1. In your opinion, how big is the risk to you as a footballer of sustaining an injury?
 High Moderate Low Don't know

2. What are the most common type of injury you are frequently exposed to?

sprain strain dislocation contusion fracture others please specify

3. Which part of your body is exposed to injury the most

	left	Right
Head		
Neck		
Shoulder		
Elbow		
Thigh <input type="checkbox"/> hamstrings <input type="checkbox"/> quadriceps		
Hip		
Knee		
Ankle		
Groin		
Others specify		

4. What kind of injuries do you think are most important to prevent

Head Thigh (hamstrings or quadriceps) Knee Ankle Groin Other (please specify)_____

5. How important do you think it is for you as a footballer to try to prevent injuries? Very important Moderately important Not very important Don't know

6. What kind of injuries do you think footballers are exposed to? (multiple answers possible)

Head Thigh (hamstrings or quadriceps) Knee Ankle Groin Other (please specify)_____

7. What do you think are the most common reasons for injuries among footballers? (multiple answers possible)
- Too little training Too much training Too many matches Hard tackles Low muscle strength Reduced mobility Reduced recovery time between matches Artificial turfs Poor pitch quality Other (please specify)
8. To what extent do you agree with this statement: “It is more important to use the training time to play football than to do injury prevention strategies”? Fully agree Agree Not sure Disagree Totally disagree Don’t know
9. To what extent do you agree with this statement: “The motivation of the coach affects the players’ motivation to do injury prevention strategies”? Fully agree Agree Not sure Disagree Totally disagree Don’t know
10. How do you feel about injury prevention strategies? Very positive Positive Neutral Negative Very negative Don’t know
11. Have you previously received advice about injury prevention programmes? Yes No Don’t know
12. Have you done any injury prevention strategies or carried out other preventive measures to reduce the risk of injury during this season? Yes No Don’t know
13. If yes, what kind of injuries have you tried to prevent (multiple answers possible)? Head Thigh (hamstrings or quadriceps) Knee Ankle Groin, Other (please specify)_____
14. Regarding the medical support staff available to you in your club, do you have (multiple answers possible)

- i. A team doctor
- ii. A team physiotherapist
- iii. A team massage therapist
- iv. A team sports scientist strength and conditioning coach
- v. Access to a doctor (not dedicated to your team)
- vi. Access to a physiotherapist(not dedicated to your team)
- vii. A team massage therapist (not dedicated to your team)
- viii. Access to a sport scientist strength and conditioning coach (not dedicated to your team)
- ix. No medical support
- x. Don't know
- xi. Other (please specify)

What type of injury prevention strategies do you do with your club? And how many times per week?

SECTION 3: HOW OFTEN DO YOU USE THE FOLLOWING INJURY PREVENTION STRATEGIES?

Times per week	none	once	twice	3x	4x	5x	6x
FIFA 11+							
General warm up programme							
Movement preparation/sport specific movement							
Strength training on the pitch							
Strength training in a separate session							

Flexibility training on the pitch							
Flexibility training before or after football training							
Flexibility training in a separate session							
Sprint training							
Cool down							
Specific prevention protocol							
Balance and core stability							
Other prevention measures							

This is an injury prevention questionnaire (Geertsemaet *al.*, 2021)

APPENDIX B

INFORMED CONSENT FORM

Title of the Study: Level of awareness and practice of sports injury prevention strategies among amateur football players in university of Benin.

Investigator: Okolie Emmanuel

Contact Phone Number: 07045412963

Purpose of the Study: You are invited to take part in a research study aimed at understanding the level of awareness and practice of sports injury prevention strategies among amateur football players in university of Benin. The goal of this study is to investigate how aware amateur football players at the University of Benin are engaged in sport injury prevention strategies and how often they applied them in practice.

Participants: You are eligible to participate if you are football players in the University of Benin. Participation is voluntary, and you will be required to respond to questionnaires relating to your level of awareness and practice of sports injury prevention strategies among amateur football players in university of Benin.

Procedure: You will be asked to fill out standardized questionnaires that assess your levels of awareness and practice of sports injury prevention strategies. This process will take approximately 15–20 minutes and will be conducted in a safe and private setting. No physical or medical examination is involved.

Benefits of Participation: Participants will gain awareness of injury prevention strategies, understand safer training methods, improve performance, contribute to better university programs, and may receive educational feedback for safer play.

Risks of Participation: There are no foreseeable risks associated with participation in this study. All information will be kept confidential, and you may withdraw from the study at any time without any consequences.

Cost/Compensation: There is no cost whatsoever associated with your participation in this Study.

Contact Information: If you have any questions or concerns about the study, you can contact the named investigator on the stated phone number.

Confidentiality: All responses will be treated as strictly confidential. No names or identifying information will be recorded. Data will be used solely for academic research purposes.

Voluntary Participation: Participation in this study is completely voluntary. You are free to refuse or withdraw at any time without any penalty.

Participant Consent: Now that the study has been clearly explained to me and I fully understand the content and process, I agree to voluntarily take part in this study.

.....
Participant's Signature and Date

.....
Witness's signature and Date

.....
Researcher's Sign-ature and Date

APPENDIX C

ETHICAL APPROVAL



RESEARCH ETHICS COMMITTEE
COLLEGE OF MEDICAL SCIENCES
UNIVERSITY OF BENIN, BENIN CITY, NIGERIA.



Chairman: Prof. F. A Imarhiagbe
MBChb, FMCP
Cert Clin Res and ethics (NIH), MD.
0803449092

Email: researchethics.cms@gmail.com

P.M.B 1154, BENIN CITY

Our Ref: CMS/REC/01/VOL.2/821

Date: 7th August, 2025

Re: LEVEL OF AWARENESS AND PRACTICE OF SPORTS INJURY PREVENTION STRATEGIES AMONG AMATEUR FOOTBALL PLAYERS IN UNIVERSITY OF BENIN

Name of Principal Investigator: **OKOLIE EMMANUEL**
Department Of Physiotherapy,
School of Basic Medical Science,
College of Medical Sciences,
University of Benin.

REC Approval No: CMS/REC/2024/821

This is to inform you that the research described in the submitted proposal, the Informed Consent Forms and other participant information materials have been reviewed and approved by the College Research Ethics Committee, University of Benin.

This approval dates from 7th August, 2025 to 6th August, 2026. In multi-year research, Endeavour to submit your annual report to the REC early in order to obtain renewal of your approval and avoid disruption of your research.

The National Code of Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the code including ensuring that all adverse events are reported promptly to the REC. No, changes are permitted in the research without prior approval by REC except in circumstances outlined in the code. REC reserves the right to conduct compliance visit to your research site without prior notice. Thank you.

PROF. F.A IMARHIAGBE
Chairman, REC