

Knowledge, attitudes and practices of injury prevention towards lateral ankle sprain among amateur football players in Brunei

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Abstract

Background and Study Aim Football is a globally recognized sport and played both professionally and recreationally. As it is a physically challenging sport, it must inform players on preventing injuries from occurring or reoccurring. This study aimed to assess the knowledge, attitudes and practices on injury prevention towards lateral ankle sprain (LAS) among amateur football players in Brunei.

Material and Methods A total of 140 respondents participated in the cross-sectional study who fit into the inclusion criteria. An online questionnaire was adapted and shared with amateur football players in Brunei from September 2021 to October 2021. Questions were related to (1) demographic data; (2) injury history; (3) knowledge; (4) attitudes; and (5) practices to prevent a lateral ankle sprain.

Results Tendon/ligament injury was the highest amount of frequency at n= 97 (69.3%), in which the participants have sustained it throughout their playing years. More people perceive that the cause of injury was mainly due to lack of physical fitness 84.2%, fatigue/exhaustion 55%, uncured injuries 49.3% and contact with other players 75.7%. 84.3% agreed that the importance of injury prevention is crucial. Participants reported that the injury prevention methods are mainly used to prevent lateral ankle sprain were stretching 81.4%, specific warm-up training 79.3% and taping 67.9%.

Conclusions Our results show that players think that injury prevention is critical, yet most of them are still under-informed about avoiding injuries properly. Despite evidence that stretching is ineffective in preventing injuries, many athletes stretch to prevent damage. Warm-up training and taping are two other standard injury prevention techniques these amateur football players use. Future research should raise exercise knowledge among Brunei's amateur football players to prevent injuries.

Keywords: amateur football players, athletic injuries, preventions, attitude

Introduction

Football is widely known worldwide and is acknowledged as the world's most famous single sport [1]. In Brunei, football is a trendy sport among all ages. The National Football Association Brunei Darussalam, the governing body for football in Brunei, helps to promote and regulate the sport and all aspects of it. However well prepared a player can be, football itself has demanding physical capabilities to play. The typical distance covered by a top-level outfield player is about 10-13 km [2], surrounded by low- and high-intensity running. Other energy-intensive activities include short accelerations, tackles and jumps, which are commonly associated with a prevalence of ankle sprains [3]. The study reported that half of the injuries were associated with contact situations such as tackling, collision, kicked or another contact.

The number of amateur players in this world is higher than that of professional football players. Participation in recreational sport has been steadily

increasing as the years go by [4]. According to current literature, amateur players have lower injuries than professional athletes during matches, as reported [5]. Injuries among Spanish male amateur football players studied the differences between the risk of injury and characteristics between Dutch amateur and professional football players [6]. In the scientific literature on the knowledge of injury prevention for LAS, there are limited studies investigating amateur football players' knowledge to prevent the injury. A large number of studies were targeted towards professional football players than amateur players [7]. However, in theory, amateur players tend to get more injured due to the lower fitness and technique levels than professional players. With research on experienced players, awareness of injury prevention strategies is still insufficient [8]. A cross-sectional study on the knowledge of football players in Tabuk, Saudi Arabia [9] showed that the players reported the significant risk factors to obtain the injuries were due to lack of stretching, lack of warm-up and the absence of bracing. The researchers concluded that the players have little knowledge of physical therapy measures towards injury prevention.

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In a study [10], 90% believed it is vital to prevent injuries, and 85% are optimistic about prevention programmes, even though the program addresses only intrinsic risk factors. A key finding noted from the study [10] reviewed from the antecedent segment was that 76.5% of the elite female football players previously received advice on the injury prevention programmes, and 80% reported that their teams conducted the injury prevention training twice a week as recommended to reduce injuries. Even with the high percentage of players practising injury prevention, it is still a surprise that some elite football players did not have their physiotherapists, physicians, sports scientists and conditioning coaches. Despite the fact they did not have dedicated medical support, the elite female players are still well informed on injury prevention. They have high motivation to implement and practice injury prevention programmes.

High injury recurrence rate concerning ankle sprains as up to 70% of patients reported residual symptoms and injury recurrence [11]. A reason for us to dive into injury prevention methods among amateur football players as they do not have the quality of resources for rehabilitation and recovery as the professional players when they are injured, as prevention has always been better than the cure.

This research aims to measure the knowledge, attitudes, and practices (KAP) to prevent lateral ankle sprain injury among amateur football players in Brunei. Football players require knowledge on injury prevention, as LAS are among the common types of ankle injury [12] they can get while training or competing.

Materials and Methods

Participants

In this cross-sectional survey, an online questionnaire through Google forms was circulated among amateur football players in Brunei. Among 151 responses, 11 were excluded as 5 were professional football players and 6 had underlying chronic medical, cardiovascular and respiratory conditions. We included one hundred forty total responses in the study with a mean age of 23.87 ± 3.29 . Faculty Research and Ethics Committee approved the study with reference no: INTI-IU/FHLS-RC/BPHTI/1NY12021/015. Participants who agreed to participate in the study filled in an informed consent form and all data received were kept confidential.

Both genders between 18-40 years old and must reside in Brunei who plays football for recreation and does not be paid to participate in competitions and training were included in the study. Participants were excluded if they were uncooperative and with chronic medical, cardiovascular and respiratory conditions.

Procedure

The survey was shared using the primary investigator's various social media platforms, targeting the amateur football players in Brunei. The data collection period was from 1st September 2021 until 30th September 2021. However, data collection was extended for another one month until 31st October 2021 to increase the number of responses.

The survey was developed by [13] from their study on "Perceptions of football players regarding injury risk factors and prevention strategies". The primary investigator has obtained permission from the authors before using the survey. The questionnaire covers five main segments: demographic data, history of injury, knowledge on the injury and its risk factors, beliefs, and practices regarding preventive measures. However, the primary investigator did not use the whole questionnaire and only adapted the questions related to the investigator's research objectives and relevance. In this case, sections other than ankle and foot injuries were omitted.

In the first segment, we collected demographic data such as gender, age, height and weight, followed by questions on participation in football as the second segment. Under the participation in football section, players are asked how long they have been playing, how many hours a week they play on average, and if they participate in any sport besides football. The third segment included questions about their injuries in football involving their ankle or foot, such as the year of injury, the type of injury suffered (contusion, bruise, bone fracture, muscle injury, joint/capsule injury, and tendon/ligament injury), and the year of injury.

Also included the side of injury, time loss from playing, time of occurrence of injury (whether it was in-game, warm-up or others).

A fourth segment talked about people's beliefs about their injuries and how they try to prevent them. This segment spoke about their beliefs about the leading causes of their injuries and how vital and effective injury prevention methods and practices are.

We collected the Google form responses at the end of the data collection period.

Statistical analysis

The Statistical Package of Social Sciences (SPSS) version used 28.0.0 to analyze the statistical data collected.

Demographic data such as gender, age, height and weight were evaluated using descriptive analysis. Categorical variables such as years of playing football, plying time in a week, history and type of ankle and foot injury suffered and time loss from playing football due to injuries will be shown in the form of frequencies (n), percentages (%) for discrete data and mean and standard deviation (SD) for continuous data, wherever applicable.

Results

Total 140 responses included in the study. There are 136 males and 4 females who participated in this study. The mean age of the participants, height, body mass and years of playing were shown in the Table 1 below.

In the section regarding the participants' participation in playing football, we found that the mean number of years they have been playing football is 12.99 years. More than half (51.4%) of the participants play football approximately 1 hour per

week.

In Table 3, among the 140 respondents, the type of injury, history of ankle or foot injuries, side of injuries and days not playing football due to injury were shown in the table 2.

More people perceive that the cause of injury was mainly due to lack of physical fitness, fatigue/exhaustion, uncured injuries, contact with other players and material problems (such as shoes and flooring). In overall the knowledge, beliefs, attitude, and injury preventions practice were shown in the Table 4.

Table 1. Participants' demographic data

Demographic Characters	Mean	Std. Deviation
Age (in years)	23.87	3.29
Height (in meters)	1.73	0.05
Weight (in kilograms)	74.47	10.37
Years playing football (in years)	12.99	4.05

Table 2. Respondents' playing hours in a week

Playing hrs per week	Frequency (n)	Percentage (%)
Approx . 1h/week	72	51.40%
Approx . 2h/week	47	33.60%
Approx . 3h/week	5	3.60%
Approx . 4h/week	7	5%
Approx . 5h/week	2	1.40%
Approx . More than 6h/week	6	4.30%

*h= hours, Approx. =Approximately

Table 3. Type, history and side of ankle injury encountered by the players and days not playing football due to injury

Participants' Injury Rates	Frequency (n)	Percentage (%)
<i>Types of injury sustained</i>		
Tendon/ligament injury	97	69.3
Contusion/bruise	45	32.1
Muscle injury	27	19.3
Joint/capsule injury	17	12.1
Bone fracture	11	7.9
<i>Reported history of ankle or foot injuries</i>		
One or more ankle or foot injury	122	87.1
Never had an ankle or foot injury	18	12.9
<i>Side of ankle injuries</i>		
Right	60	49.2
Left	41	33.6
Both	21	17.2
<i>Days not playing football due to injury</i>		
More than 28 days	73	59.8
7 – 27 days	40	32.8
1 – 6 days	9	7.4

Table 4. Participants’ knowledge, beliefs and attitudes on LAS and their injury prevention practices.

Participants’ Perceptions	Frequency (n)	Percentage (%)
<i>Importance on injury prevention</i>		
Very important	118	84.2
Important	22	15.7
Opinion on whether participants are well informed or not on injury prevention (n = 140)		
Yes – adequately informed	56	40
No – not adequately informed	84	60
<i>Participants’ beliefs on the causes of their LAS</i>		
Lack of physical fitness	118	84.2
Contact with other players	106	75.7
Fatigue/exhaustion	77	55.0
Material problems (shoes/flooring)	74	52.9
Uncured injuries	69	49.3
Muscular deficits (power deficits or muscular imbalances)	33	23.6
Concentration or attention deficits	22	15.7
Coordination deficits	15	10.7
Climatic conditions	7	5.0
Incorrect nutrition	6	4.3
Others	2	1.4
<i>Injury prevention practices</i>		
Stretching	114	81.4
Specific warm-up training	111	79.3
Taping (kinesio taping or stabilizing taping)	95	67.9
Special joint-related training	55	39.3
Wearing bandages or orthoses	51	36.4
Shin guards	18	12.9
Shoe inserts	12	8.6
Face mask	2	1.4

Discussion

This study investigated the KAP of injury prevention towards lateral ankle sprain among amateur football players in Brunei. The study adopted a self-reporting questionnaire developed by [13] that the author has permission. The self-reported questionnaire showed that the mean age of the players was 23.87±3.29 as the inclusion criteria were between the 18 – 40 age group with mean years of playing football at about 13 years. As a result, most players who participated in the study began playing football at the age of ten. With over ten years of amateur playing experience, there is little doubt that injuries are a part of the game.

Additionally, our study discovered that roughly 51.4 percent of amateur football players in Brunei participated in approximately one hour of football each week over the last year. This is understandable, given Brunei, like the rest of the world, was impacted by the global pandemic COVID-19. The pandemic

led to restricted operation hours for these playing grounds. It reduced the number of players on the field, turf, or football ground. According to the health ministry’s guidelines, these complexes limited the capacity to only 30% as part of their de-escalation phase. The fields then reopened slowly by levels every four weeks, which led to 100% reopening of the areas by August 2020 [14].

The type of injuries that the participants suffered reflects current literature [7], in which 122 of the total 140 respondents had one or more ankle or foot injuries. The tendon/ligament injury has the highest incidence in injury, followed by contusion or bruise. Half of the injuries occur during the game, and the remaining half comes from either during training or others. Participants’ knowledge of the cause of injury was also recorded, in which 84.2% believe the grounds of their injuries were from lack of physical fitness. As football is a physically demanding sport (Fong et al., 2003), general fitness is needed to

excel. A study [15] reported that age, morphology and physical fitness are influential parameters of football performance at elite football. Although these data are valuable, evidence catering amateur level is lacking. Still, the importance of better fitness should be emphasized regardless of the playing group, with superior physical performance being a predictor of success in football games [16].

Subsequently, fatigue, exhaustion, and uncured injuries lead to several internal risk factors. The high frequency with which participants reported contact with other players and material difficulties such as shoes and flooring is shocking, given that external risk factors have been identified as causes of injuries in recent years, causing alarm in the football community [10], [13]. About 75% of the participants perceive that contact with other players is a cause of their injuries. Roughly 40-50% of the amateur football players in our study reported that their injury was due to contact. Half of the participants who had this contact injury were injured in a game. The findings supported that ankle sprain was due to contact with other players are in line with those previously mentioned in literature [17], [18]. Contact injuries, otherwise known as traumatic injuries, are still high in football regardless of their playing level, according to other previous studies reported [19]–[21].

52.9% of our respondents believe that the cause of injury that amateur footballers identified is the material problems regarding shoes and flooring, supported by a systematic review conducted on the prevention of sports injuries. We have to accept that shoes cannot support the ankle structure compared to rigid orthoses or stabilizers. Additionally, they could contribute to the twisting force when an ankle sprain occurs. Using proper mechanically designed shoes for football should be considered when playing, even among amateur players, as this is a matter of safety and practice to prevent injuries [22].

Following our findings, stretching 81.4%, specific warm-up training 79.3% and taping 67.9% (Kinesio-taping or stabilizing taping) dominate the injury prevention practices that amateur football players in Brunei actively use to prevent LAS. Stretching has been an interest in sports research for the past 20 years, in which there are conflicting shreds of evidence in their effects on different individuals. A systematic review [22] revealed insufficient evidence to endorse or discontinue routine stretching before or after exercise to prevent injury among competitive or recreational athletes. Further research is needed to identify the essential role of stretching in sports. In their systematic review, a study [23] also mentioned no evidence of the benefits of passive or active stretching for injury prevention in sports. This suggests that evidence-based knowledge on stretching are still lacking among these players.

Specific warm-up training is also one of the

injury prevention practices that participants perform either before or during the game at 79.3%. A systematic review [24] on the impact of this program reduced between 30-70% in the number of injured players. We concluded that the program can be a fundamental tool to minimize the risk of injuries and should be made available and give recognition, especially to the amateur players, as their injuries may impact their health and social participation.

Another type of injury prevention practice that the amateur players in Brunei reported is either Kinesio taping or stabilizing taping as an external measure of injury prevention. Taping gives mechanical joint support and enhances proprioception, especially when using the ankle in sporting activities. There has been conflicting evidence on taping in literature. Nonetheless, it has been said that the consensus is that taping does help prevent the re-injury of the athletes, and it may have a placebo effect [25]. As it may give athletes confidence in activities, research has reported that taping does not negatively impact performance. There is still a need for research regarding the effects of taping in injury prevention, as current research gives insufficient evidence on their benefits.

In this study, the researcher has made a few limitations. Recall bias might be present as the participants remember their history of injuries. There is also no accurate outcome measure to identify the level of KAP of the amateur football players, as the survey was only able to take in their opinions and cannot test their knowledge correctly. It is relatively low on matters of response rate as only 140 participants were included from the 151 who participated. The minimum sample size we determined before the research is 334, which may be affected by the pandemic. Future research may examine the relationship between playing years and the frequency of lateral ankle sprains or general lower limb injuries among Brunei's amateur football players. Injury prevention programme, in the hopes of reducing the number of football injuries, particularly among amateurs. As evidence-based practices are still deficient among the participants, sports scientists and coaches, these parties should start implementing proper awareness, education, and keeping up with the ever-changing sciences to protect further the people who love the sport.

Conclusion

Our research identified that majority of the amateur football players had sustained injuries throughout their playing years, with tendon/ligament injury being the highest incidence. Players generally believe that lack of physical fitness, fatigue or exhaustion and uncured injuries are the leading intrinsic causes of their injuries. In contrast, contact with other players and material problems such as shoes and flooring are the extrinsic

causes. All players agree that injury prevention is essential though most of them are still inadequately uninformed on the proper methods to prevent injuries. Many players practise stretching to avoid injuries, despite evidence that it is not beneficial in

preventing injuries. Specific warm-up training and taping are other highly performed injury prevention practices by these amateur football players. Future studies should identify the awareness of exercise programs among amateur football players in Brunei.

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