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Assessment of Injury Prevention Knowledge Among University Athletes and Coaches: A Quantitative Study

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تقييم معرفة الوقاية من الإصابات بين الرياضيين الجامعيين والمدربين: دراسة كمية

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Abstract:
This study assesses the knowledge of injury prevention among university athletes and coaches, focusing on sources of information and awareness levels. Using a quantitative approach, data were collected from 101 players and 9 coaches across multiple sports. Results indicate that most athletes rely on coaches and physiotherapists for injury prevention knowledge, while coaches primarily depend on medical professionals and seminars. Although 69.3% of players considered themselves knowledgeable, significant gaps existed regarding risk factors and preventive strategies, especially during training sessions. The findings highlight the need for structured educational interventions and consistent implementation of injury prevention policies within university sports clubs. Enhancing the role of coaches, medical staff, and media is recommended to improve athlete safety and reduce injury incidence.

Keywords: Sports Injury Prevention, University Athletes, Knowledge Assessment, Coaches' Role, Preventive Strategies**.**

الملخص
تقيّم هذه الدراسة معرفة الوقاية من الإصابات بين الرياضيين الجامعيين والمدربين، مع التركيز على مصادر المعلومات ومستويات الوعي. باستخدام منهج كمي، تم جمع البيانات من 101 لاعب و9 مدربين عبر عدة رياضات. أظهرت النتائج أن معظم الرياضيين يعتمدون على المدربين وأخصائيي العلاج الطبيعي للحصول على معرفة الوقاية من الإصابات، بينما يعتمد المدربون بشكل أساسي على المحترفين الطبيين والندوات. على الرغم من أن 69.3% من اللاعبين اعتبروا أنفسهم ملمين بالموضوع، وُجدت فجوات معرفية كبيرة فيما يتعلق بعوامل الخطر والاستراتيجيات الوقائية، خاصة خلال جلسات التدريب. تُسلط النتائج الضوء على الحاجة إلى تدخلات تعليمية منظمة وتنفيذ ثابت لسياسات الوقاية من الإصابات داخل الأندية الرياضية الجامعية. يُوصى بتعزيز دور المدربين والطاقم الطبي والإعلام لتحسين سلامة الرياضيين وتقليل معدلات الإصابات.

الكلمات المفتاحية: الوقاية من إصابات الرياضة، الرياضيون الجامعيون، تقييم المعرفة، دور المدربين، استراتيجيات وقائية.

Introduction

Sport clubs in tertiary institutions are viewed as an ideal setting to promote wide-range participation in physical activity and recreation on campuses. In addition, a smoke- and alcohol-free environment and healthy lifestyle

create a conducive environment for athletes to achieve sporting excellence. Furthermore, the creation of sport clubs on a campus is a means of promoting participation in sport, which can be attributed as an innovation in keeping with the good health promotion practice. However, lack of resources, professional coaches and medical staff can negatively affect athletes and the development of sport on campuses.
Sport clubs on a university campus are an ideal setting to promote participation in physical activity. The motivational factors behind setting-up sport and recreational programs on campus include: promoting a healthy lifestyle and well-being, building social interaction and enjoyment, building relationships, identifying sport talents, and creating a conducive environment to enhance both sporting and academic performance (Asihel, 2009). The occurrence of injuries may lead to modification or interruption of the activity. Generally, any injury alters training plans, which is an important factor in training, including the monitoring of programs.

Within the sports community, the most common intervention focuses on recovering from injuries in order for the athlete to return to previous performance levels, which is normally an expensive process from both an economic and sport perspective. Currently, sports injury prevention implementation research has highlighted that a key first step to enhancing an intervention's success is developing an understanding of the specific context in which it is to be administered.

The design and delivery or implementation of sport injury mechanisms require reflecting to the specific target setting, with consideration of factors such as player age, knowledge, beliefs, competitive level and climate (Asihel, 2009). According to Van Mechelen (1997), the process of injury prevention can be considered in four stages. First, the extent of injury must be identified and described. Second, the factors and mechanisms that lead to injury need to be investigated. Third, the applied management and preventions techniques are depending on stage one and two. Fourth, Strategies are evaluated to see effectiveness. In addition, physiotherapists in sport teams play a central part in the intervention and rehabilitation processes; their treatments are focused on alleviating athletes' injuries, including relieving pain, swelling and promoting recovery of strained muscles.

Exercise and mobilizations commonly used by physiotherapists are generally regarded as efficacious to relieve pain and treat injuries (Sarig-Bahat, 2003). In addition, physiotherapy aims to improve mobility, strength, and balance and achieve independence at whether for leisure activities, professional sport or work (Kiss, Damrel, Mackie, Neumann, Wallace, 2001). Physiotherapists play an active role in implementing strategies regarding injury prevention in the management of athletes or sports persons worldwide. The knowledge and skills of physiotherapists dealing with team sports, both on and off campus, is important in helping to design preventive techniques and apply treatment as well (Zuluaga, 199).

Methodology

Mixed methods research is generally an approach to knowledge (theory and practice) that attempts to consider multiple perspectives, and standpoints, including qualitative and quantitative (Morgan, 2007). These methods are used as one part of a validation process that ensures that the explained variance is the result of the underlying phenomenon or trait and mixed methods research has become the most popular term used (Greene, 2006). The goal of a mixed method is to bring together the qualitative and quantitative data/findings focused on the current research question as a shortcut to the literature. However, it is important to consider that the use of mixed methods is beneficial in this study, because it provided an excellent description of the methodology (Greene, 2006).

In this study, qualitative and quantitative methods for data collection been used to have a more in-depth information and knowledge of the problem as well as provide rich datasets and offer more comprehensive approach to find answers to research questions (Greene, 2006).But in this article, we will work on quantitative method and will focus on the factors in this article.

3-Results

3.1 Demographics of the Participants

A hundred and one thirteen players participated in the study. And nine coaches

Table 1: Types of sports players in the study

Age	N	%
Rugby	10	9.9
Football	50	49.5
Basketball	16	15.8
Cricket	11	10.9
Total	**101**	**100**

3.2. Age

The majority of players 58.4% (59/101) were aged between 24-20 years old while 29.7% (30/101) were between 14-19 years old and 11.9% (12/101) were between 25-29 years old as shown in Table 2. Table 3 shows that 44.4% (4/9) of coaches were aged between 20-29 years old and 22.2% (2/9) were aged between 30-39 or 50-60 years old. Of the total number of coaches, only 11.1% (1/9) was aged between 40-49 years old as shown in Table.4.2. As shown in Table 3, the majority of players (female and male) 49.5% (50/101) were involved in football while 15.8% (16/101) played basketball, 13.9% (14/101) volleyball, 10.9% (11/101) cricket and 9.9% (10/101) rugby.

Table 2: Ages of the sports players in the study

Age	N	%
14-19	30	29.70
20-24	59	58.40
25-29	12	11.90
Total	**101**	**100**

Table 3: Ages of the sports coaches in the study

Age	N	%
20-29	4	44.40
30-39	2	22.20
40-49	1	11.10
50-60	2	22.20
Total	**9**	**100**

3.3 Gender

In this study, 19 (38%) female participants played for the football team and 62% of the participants who played football were male (Figure 4.1).

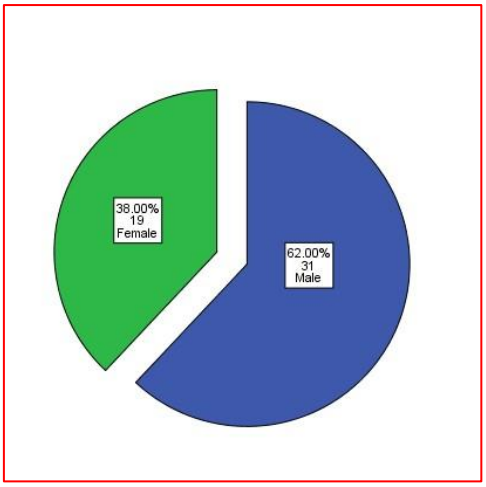

Figure 1: Gender of participants playing football4.2.3 Experience.

As shown in Table 4, most of the players 65.6% (66/101) participated in sport for 1 to 2 years, 27.7% (28/101) for 3 to 4 years, 5.7% (6/101) for 5 to 6 years and only 1% (1/101) for 7 years or more. The data in Table 5 show that 33.3% (3/9) of respondents had coaching experience between 1-4 years, 44.4% (4/9) of coaches had more than 13 years coaching experience while 11.1% (1/9) had coaching experience between 5-8 years and 9-12 years, Table 5.

Table 4: Experience of the sports players in the study

Years	Frequency	%
1-2	66	65.6
3-4	28	27.7
5-6	6	5.9
≥ 7	1	1
Total	**101**	**100**

Table 5: Experience of the sports coaches in the study

Years	Frequency	%
1-4	3	33.4
5-8	1	11.1
9-12	1	11.1
13+	4	44.4
Total	**9**	**100**

4.1 Factors Influencing Participants' Knowledge of Injury Prevention

4.2. Sources of Players' Knowledge of Injury Prevention

Table 6 shows that players regarded the knowledge they got from a doctor / physiotherapist as most important 72.4% (71/101) while 50% (49/101) of players regarded the knowledge obtained from a coach as most important

and 44.9% (44/101) as important. However, 65.3% (64/101) of players indicated that the knowledge obtained from the media was least important.

Table 6: Sources of players' knowledge of injury prevention

Learned about injury prevention		Frequency	Percentage
Doctor / Physiotherapist	Most important	71	72.4
	Important	24	24.5
	Least important	3	3.1
Media	Most important	8	8.2
	Important	26	26.5
	Least important	64	65.3
Coaches	Most important	49	50.0
	Important	44	44.9
	Least important	5	5.1

4.3. Sources of Coaches' Knowledge of Injury Prevention

Table 7 summarizes the sources of coaches' knowledge of injury prevention. The study showed that 77.8% (7/9) of the coaches said that getting knowledge from a doctor / physiotherapist was the most important source while 66.7% (6/9) of coaches considered knowledge acquired from the media as important. The study showed as well that 55.6% (5/9) of coaches indicated that knowledge gained from the seminars was most important, but 33.3% (3/9) thought that such knowledge was least important.

Table 7: Sources of coaches' knowledge of injury prevention

Learn about injury prevention		Frequency	Percentage
Doctor/physiotherapist	Most important	7	77.8
	Important	1	11.1
	Least important	1	11.1
Media	Most important	1	11.1
	Important	6	66.7
	Least important	2	22.2
Seminars	Most important	5	55.6
	Important	1	11.1
	Least important	3	33.3
Total		**9**	**100**

4.4. Players' Knowledge of Injury Prevention

The players' knowledge of injury prevention was assessed. They were asked 11 questions which were grouped into three categories (Table 8). Three questions were grouped under the occurrence of injuries (1-3), two questions under the causes and risk factors (4 and 5) and six under injury prevention strategies (6-11). They were given a set of sentences where they had to choose responses to each one ranging from strongly agree to strongly disagree. Table 8 also shows that 48.9% (48/101) of players are agreed that the chances of sustaining an injury during training that prevents you from being available for selection is likely to happen while 53.1% (52/101) of players strongly agreed or agreed that the chances of sustaining an injury during a competitive match that prevents you from being available for selection is likely to happen.

Most of the players 41.8% (41/101) agreed that there is a greater chance of sustaining an injury during a competitive match than during training, while 34.7% (34/101) indicated that they neither agreed nor disagreed that injuries are a consequence of the action of another player, and 28.6% (28/101) are divided (agreed vs neither agreed nor disagreed on the item whether the risk of lower leg injuries in training is reduced by wearing shin guards. Of the players, that 42.9% (42/101) agreed that the risk of injury is reduced by thoroughly warming up and stretching prior to training or competition, and 39.8% (38/101) of players agreed that the risk of injury is reduced by thoroughly cooling down and stretching after training or competition. Otherwise, the study showed about 33.7% (33/101) of players agreed that strong muscles are important in the protection against injuries. Of the players, 42.9% (42/101) strongly disagreed that the majority of other players wear shin guards during training.

Table 8: Players' knowledge of injury prevention

Players' Responses/Questionnaire Items	N (%)				
	Strongly Agree	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
The chance of sustaining an injury during training that prevents you from being available for selection is likely to happen.	32 (32.7%)	48 (49%)	16 (16.3%)	2 ((2%)	-
The chances for sustaining an injury during a competitive match that prevents you from being available for selection is likely to happen.	52 (53.1%)	52 (53.1%)	16 (16.3%)	5 (5.1%)	1 (1%)
There is a greater chance of sustaining an injury during a competitive match than during training.	32 (32.7%)	41 (41.8%)	19 (19.4%)	5 (5.1%)	1 (1%)
Injuries are a consequence of the action of another player.	7 (7.1%)	26 (26.5%)	34 (34.7%)	22 (22.4%)	9 (9.2%)
The risk of lower leg injuries in training is reduced by wearing shin guards.	14 (14.3%)	28 (28.6%)	28 (28.6%)	14 (14.3%)	14 (14.3%)
Injury is more likely towards the end of a match.	13 (13.3%)	25 (25.5%)	26 (26.5%)	15 (15.3%)	19 (19.4%)
The risk of injury is reduced by thoroughly warming up and stretching prior to training or competition	39 (39.8%)	42 (42.9%)	13 (13.3%)	4 (4.1%)	-
The risk of injury is reduced by thorough cooling down and	38 (38.8%)	38 (39.8%)	19 (19.4%)	2 (2%)	-

stretching after training or competition					
Players with poor flexibility are more likely to get injured than those with good flexibility.	20 (20.4%)	19 (19.4%)	28 (28.6%)	27 (27.6%)	4 (4.1%)
Strong muscles are important in the protection against injuries.	27 (27.6%)	33 (33.7%)	19 (19.4%)	19 (19.4%)	-
The majority of other players wear shin guards during training.	10 (10.2%)	7 (7.1%)	15 (15.3%)	24 (24.5%)	42 (42.9%)
N=101.					

Also, 69.3% (70/101) of the players indicated that they were knowledgeable about injury prevention, whereas 30.7% (31/101) indicated that they were not knowledgeable (Table 9). Assessment of players' knowledgeability of injury prevention within the type of sports they played are presented in Figure 2. For all the sports types, players' were marginally significantly (p=0.047) knowledgeable compared to those who indicated that they were not knowledgeable.

Table 9: Players' knowledgeability of injury prevention

Item	**N**	**%**
Not knowledgeable	31	30.7
Knowledgeable	70	69.3
Total	**101**	**100**

Table 10: Chi-Square Tests

	Value	**Df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	9.615[a]	4	0.047
Likelihood Ratio	8.985	4	0.061
Linear-by-Linear Association	6.649	1	0.010
No of Valid Cases	101		
[a]4 cells (40%) have expected count less than 5. The minimum expected count is 3.07; df=degrees of freedom			

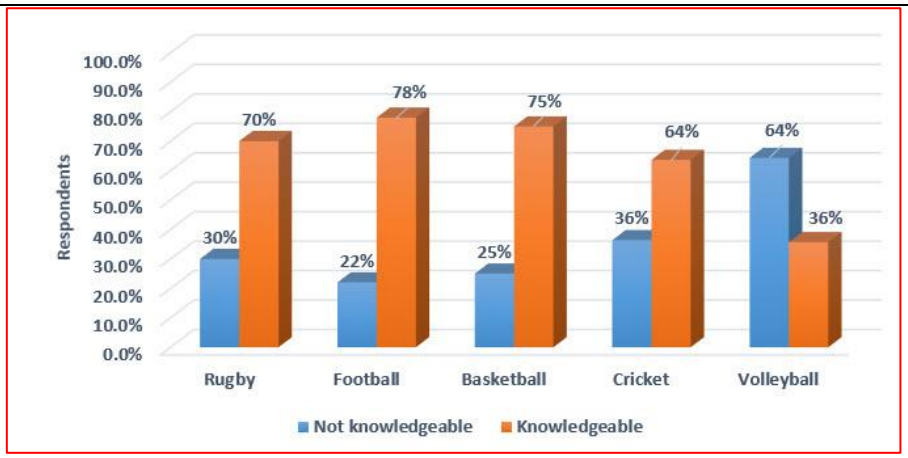

Figure 2: Players' knowledgeability of injury prevention within the type of sports.

4.5. Coaches' Knowledge of Injury Prevention

Table 11 shows that 50% (4/9) of coaches are agreed that the chance of sustaining an injury during training that prevents a player/s from being available for selection is likely to happen. In addition, 50% (4/9) of coaches are agreed that the chances for sustaining an injury during a competitive match that prevents a player/s from being available for selection is likely to happen. The majority of coaches strongly agreed 62.5% (5/9) and agreed 25% (2/9) that there is a greater chance sustaining an injury of a player/s during a competitive match than during training, whereas 50% (4/9) agreed that injuries are a consequence of the action of another player and the same number 50% (4/9) indicated that they agree that the risk of lower leg injuries in training is reduced by wearing shin guards.

The study showed that 87.5% (7/9) of coaches strongly agreed that the risk of injury is reduced by thoroughly warming up and stretching prior to training or competition and 87.5% (7/9) of coaches agreed that the risk of injury is reduced by thoroughly cooling down and stretching after training or competition. Exactly 50% (4/9) of coaches agreed that strong muscles are important in the protection against injuries of a player. Most coaches 62% (5/9) are of the opinion that the majority of other players wear shin guards during training.

Table 11: Coaches' knowledge of injury prevention

Item	Response	Frequency	%
The chance of sustaining an injury during training that prevents a player/s from being available for selection is likely to happen.	Strongly agree	4	50
	Agree	4	50
The chances for sustaining an injury during a competitive match that prevents a player/s from being available for selection is likely to happen.	Strongly agree	4	50
	Agree	4	50
There is a greater chance sustaining an injury of a player/s during a competitive match than during training.	Strongly agree	5	62.5
	Agree	2	25
	Neither agree nor disagree	1	12.5
Injuries are a consequence of the action of another player.	Strongly agree	1	12.5
	Agree	1	12.5
	Neither agree nor disagree	4	50
	Disagree	2	25
The risk of lower leg injuries in training is reduced by wearing shin guards.	Strongly agree	1	12.5
	Agree	4	50
	Neither agree nor disagree	1	12.5
	Disagree	1	12.5
	Strongly disagree	1	12.5
Injury is more likely towards the end of a match.	Strongly agree	3	37.5
	Neither agree nor disagree	1	12.5
	Disagree	3	37.5
	Strongly disagree	1	12.5
The risk of injury is reduced by thoroughly warming up and stretching prior to training or competition	Strongly agree	7	87.5
	Agree	1	12.5
The risk of injury is reduced by thoroughly cooling down and stretching after training or competition	Strongly agree	7	87.5
	Agree	1	12.5
Players with poor flexibility are more likely to get injured than those with good flexibility.	Strongly agree	2	25
	Agree	3	37.5

	Neither agree nor disagree	2	25
	Disagree	1	12.5
Strong muscles are important in the protection against injuries of a player/s.	Strongly agree	2	25
	Agree	4	50
	Neither agree nor disagree	2	25
The majority of other players wear shin guards during training.	Strongly agree	1	12.5
	Neither agree nor disagree	1	12.5
	Disagree	5	62.5
	Strongly disagree	1	12.5
Total		**9**	**100**

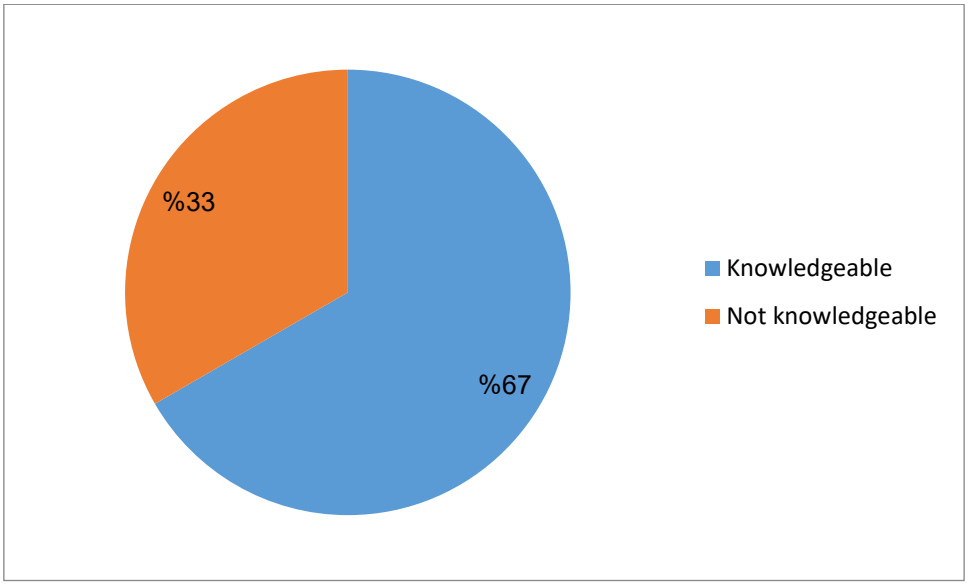

Figure 3: Coaches' knowledge of injury prevention

5.1 Group Knowledge of Players

5.1 Warm-Up Period Prior to Training

Table 12 summarizes the group scores of players' knowledge of warm-up period prior to training. Of the respondents in the Knowledgeable Group, 74.3% indicated that they always have a warm-up period prior to training compared to 45.2% in the Not Knowledgeable Group. Both the Knowledgeable Group (12.9%) and Not Knowledgeable Group (12.9%) very often have a warm-up period prior to training.

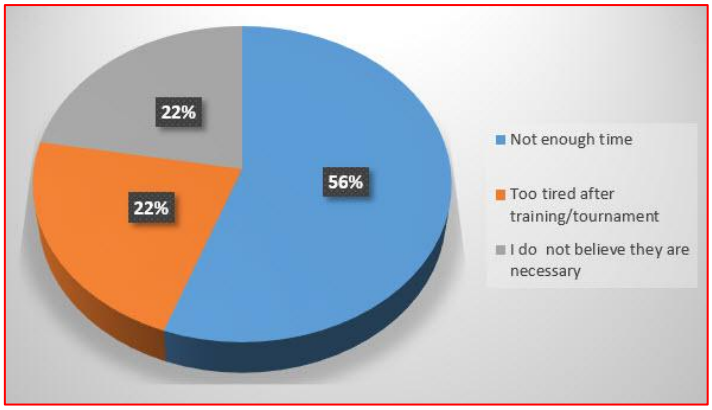

Figure 4: Coaches' reasons for not doing cool-down during competition as an injury prevention strategy

Table 12: Group scores of players' knowledge of warm-up period prior to training

Do you have a warm-up period prior to training?		Group knowledge of players		Total
		Not Knowledgeable	Knowledgeable	
Always	**N**	14	52	66
	%	45.2	74.3	65.3
Very often	**N**	13	13	26
	%	12.9	12.9	25.7
Often	**N**	2	3	5
	%	6.5	4.3	5
Sometimes	**N**	1	2	3
	%	3.2	2.9	3.0
Never	**N**	1	0	1
	%	3.2	0	1
Total	N	31	70	101
	%	100	100	100
Pearson Chi-Square=9.816; df=4; Asymptotic Significance (2-sided)=0.044				

5.2. Warm-Up Period Prior to Competition

Table 13 shows the group scores of players' knowledge of warm-up period prior to competition. Of the respondents, 50.5% in the Knowledgeable Group and 13.9% in the Not Knowledgeable Group indicated that they always have a warm-up period prior to competition, whereas 16.8% in the Knowledgeable Group and 14.9% in the Not Knowledgeable Group said that they very often have a warm-up period prior to competition.

Table 13: Group scores of players' knowledge of warm-up period prior to competition

Do you have a warm-up period prior to competition?		Group knowledge of players		Total
		Not Knowledgeable	Knowledgeable	
Always	**N**	14	51	65
	%	13.9	50.5	64.4
Very often	**N**	15	17	32
	%	14.9	16.8	31.7
Often	**N**	0	2	2
	%	0.0	2	2
Sometimes	**N**	1	0	1
	%	1.0	0	1
Never	**N**	1	0	1
	%	1	0	1
Total	N	31	70	101
	%	30.7	69.3	100
Pearson Chi-Square=11.902; df=4; Asymptotic Significance (2-sided)=0.018				

6-Decision

6.1 Background Information

Most of the players in this study were between 20-24 years old. This is somehow similar to the study conducted by Abdelnour (2008), which found that the age range among UWC players is between 20 and 25 years old. Most of the coaches in this study were aged between 20-29 years. This age range is more likely to include coaches with less experience. This was corroborated in this study that the experience of the coaches ranged between one and four years. The study conducted by Ianiro *et al*. (2015), showed that coaches aged 24 years old were more likely those newly gaining experience compared to older ones. Most male (62%) and female (38%) players in this study were involved in football. According to Kunz (2007), the level of participation among males is also higher in football. Most of the players participated in the sport for one to two years. This is similar to the study conducted in Rwanda by Nuhu (2008).

6.2 Knowledge of Injury Prevention Strategies

Most players believe that they get most of their information regarding injury prevention from coaches. Most coaches felt that they acquire their information regarding injury prevention mainly from doctors or physiotherapists. Most players agreed that the chances of sustaining an injury is likely to happen during a competitive match that prevents you from being available for selection. That is due to the fact that the importance of the competition more likely increases the intensity and load that the player produces (Abdelnour, 2008).

The majority of the coaches affirm that the risk of injury is reduced by thoroughly warming up and stretching

prior to training or competition. Several studies have shown that warm-up and stretching exercise are very beneficial in injury prevention strategies. For example, one study showed that flexibility training impacted on positive power and performance. Stretching enhances subsequent performance and reduces the risk of injury by improving joint mobility (Witvrouw, 2003; 2004).

The study shows that the cricket team is more knowledgeable than the other teams. Most players think that their source of knowledge is supposed to be coaches and physiotherapists - more so than the media. This finding is consistent with the study conducted by Nuhu (2008), which found that more than half of the soccer players reported that coaches were their most important source of information regarding injury prevention. In addition, Tonino & Bollier (2004), found that coaches are often the only supervising staff member always available at practices. This may indicate that coaches are a very important source of knowledge regarding injury prevention strategies.

7-Conclusion

In conclusion, players and coaches at UWC seems to have satisfactory knowledge of injuries. However, players' awareness is deficient as to the causes and risk factors for injuries. Injury prevention strategies and/ or policies were not regularly implemented. Clubs emphasize the implementation of injury prevention strategies more at competitive matches than during training. The most important sources of information regarding injury prevention were found to be the coaches, team medical practitioners and the media.

Interventions to improve injury prevention should, therefore, include the coaches, team medical practitioner and media. The teams indicated that they would be willing to accept assistance in injury prevention techniques and equipment. There is a need to provide education to increase the general knowledge about the prevention of injuries in the community and overcome all the identified barriers that render the implementation difficult or impossible. There is also a need to support teams to develop meaningful and relevant policies.

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