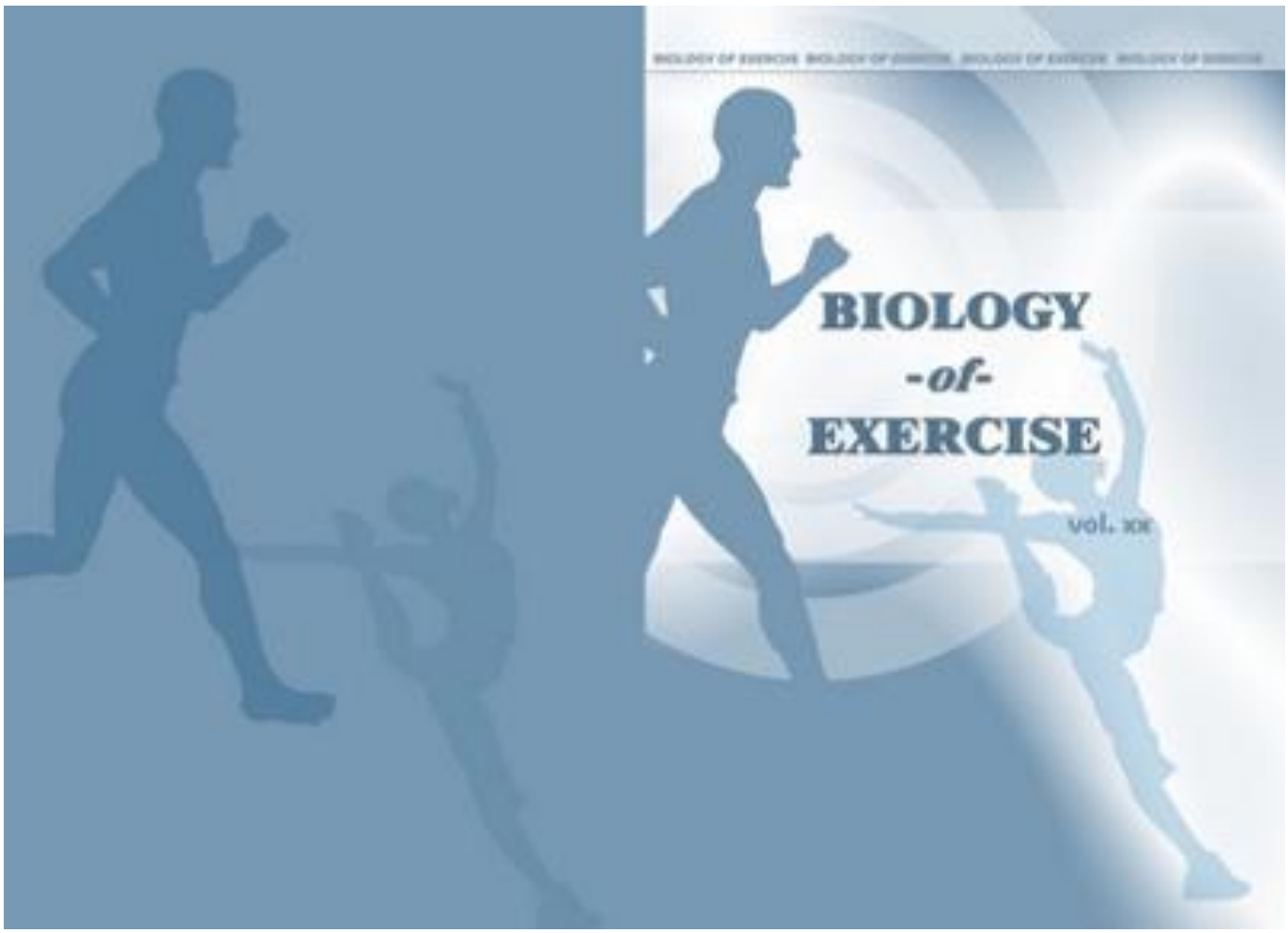
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The use of non-steroidal anti-inflammatory drugs among soccer players in West Africa: A knowledge, attitude and practice survey with the elite in Republic of Benin

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ABSTRACT

Using anti-inflammatory leads to sometimes have undesirable side effects, although they can be freely purchased in stores and on the streets in West Africa countries. This study aims at determining the levels and relationships between knowledge, attitude, and practice of non-steroidal anti-inflammatory drugs (NSAIDs) among Beninese Elite soccer players. It is a cross-sectional study that uses the Knowledge, Attitude, and Practice survey of 233 Elite soccer players. Levels of knowledge and attitude in relation to NSAIDs use were low among 61.8% and 75.1% of the players, respectively, while 65.7% of them use the medications responsibly. The association between attitude and practice was significant ($\chi^2 = 3.56$; $p = 0.04$; Cramer's $V = 0.12$), but the relation between the level of knowledge and level of attitude was not significant ($p > 0.05$), as was not that between the level of knowledge and practice regarding the use of

Key Words: *Anti-inflammatory, Soccer, KAP survey, Republic of Benin*

NSAIDs ($p > 0.05$). Contrary to conventional wisdom, a low level of knowledge of NSAIDs was not associated with the misuse of these drugs. These results suggest that Beninese Elite soccer players have to improve their knowledge and attitude, regarding the use of NSAIDs to reduce the risk of side effects of these medications.

INTRODUCTION

Soccer is a team contact sport characterized by brief and intense actions interspersed with periods of incomplete recovery (4). Soccer's physical, physiological, and psychological requirements, added to the high frequency of competitions, expose practitioners to recurring fatigue that increases the risk of injury (7). The incidence of injury varies from 6.2 to 32.8 per 1,000 hours of play, ostensibly because of the direct contact between players (20) and the nature of the playing surfaces (2). The injuries usually consist of muscle, joint or bone trauma (16) or bruises or concussions (14). Post-traumatic recovery can take from 1 to 752 days, depending on whether it is a muscular injury, a tibial fracture (3), or a concussion with severe cognitive impairment (12). This period of immobility that both players and leaders want to be as short as possible depends largely on the means used to treat the traumatic injury.

The use of non-steroidal anti-inflammatory drugs (NSAIDs) has had great success, with over 30-million consumers worldwide (19), and complements traditional practices (e.g., cryotherapy, massage, and bandaging). NSAIDs are synthetic medications that do not contain cortisone and are commonly prescribed to treat wounds, relieve athletes from pain and inflammation and reduce the period of disability. The consumption of NSAIDs has health risks. Despite this, 95.7% of surveyed university soccer players in the United States reportedly use NSAIDs at high frequencies during competition, especially after games (11). At the World Cup in South Africa in 2002, 49% of consumed medications by soccer players were NSAIDs (13) whose reported side effects include an increased risk of hyponatremia during exercise and gastrointestinal, cardiovascular, musculoskeletal and kidney disorders (21, 25).

In most of West African countries like the Republic of Benin, where no statistical data are available, the risk of injury is particularly important because of the non-regulatory surfaces for game-play and the especially hot and humid climate. The climate particularly constitutes an additional risk factor for injuries among soccer players (23). In these countries, soccer represents the primary sports activity considering the number of licensees and the frequency and level of competitions. Soccer also has the largest proportion of athletes that consume synthetic products and NSAIDs (18). As far as we know, no data on the consumption of NSAIDs or their health consequences in the West African soccer players are available. This

study was conducted as part of a primary prevention strategy and was aimed at determining the levels and relationships between knowledge, attitude, and practice of NSAID use among Beninese Elite soccer players. This inventory will be used to guide the monitoring of Beninese soccer players and their management with respect to the use of these drugs, which should not be used without a medical prescription.

MATERIAL AND METHODS

Data collection and participants

This cross-sectional study was conducted in June 2015 as a KAP (Knowledge, Attitude, and Practice) survey administered to Beninese Elite soccer players who practiced in the four administrative departments of southern Benin. We received permission from officials of the soccer BSF (Beninese Soccer Federation), and the study was conducted according to the principles of the Helsinki Convention (1974). Three weeks before the survey, we obtained the authorization of the coaches and club leaders and the free and written informed consent of the players. During the same period, a pre-inquiry organized with a student soccer team, made it possible to test the sensitivity of the issues of which five equivocal items have been reformulated. The actual survey occurred on the soccer training grounds, and the dates and times were decided upon by mutual agreement with the coaching staff. The literate players completed the questionnaire by themselves, which was collected immediately after verification. The same questionnaire was administered to the *Yoruba*, *Goun* and *Fon* language speakers by investigators who interpreted the national languages of southern Benin.

The target population included soccer players who participated in the top-level championships, e. g. those belonging to the Division-1 (D1) and Division-2 (D2) clubs. The study sample used a non-probabilistic method and the exhaustive technique and was made up of players from 15 of the 16 teams in the D1 and D2 championships from 2015. Excluded were those D1 players who were absent from the national territory at the time of the survey and five others who refused to answer questions. Thus, all 233 remaining players of D1 and D2 divisions that met the inclusion criteria were interviewed.

Data collection tool

A KAP questionnaire (5, 15) organized into four parts allowed for the collection of socio-demographic data from players and information related to their knowledge, attitude, and their use of anti-inflammatory drug, which were the three composite study variables.

The NSAIDs-knowledge variable was measured through three dimensions: 1) injuries sustained during soccer practice; 2) definition of inflammation and its symptoms, and; 3) the various forms of anti-inflammatory drugs (tablets, capsules, ointments, gels, *etc.*).

Two dimensions of the NSAIDs-attitude variable were investigated. They related to arrangements made in the presence of injuries and when using an anti-inflammatory drug.

The NSAIDs-use variable considered the behavior of the respondents in connection with their acquisition and use of NSAIDs.

These variables were operationalized through questions for which each answer was dichotomized into a rating of 2 or 1, depending on whether the respondent believes the behavior to be right or wrong. Regarding the multiple-choice questions, major and minor criteria were defined in relation to responses considered as capitals or accessories. One subject was considered to have a good level for one of the questions even though the subject only answered the criteria defined as a major criterion plus one, two, three or four minor criteria, depending on the number of possible choices, which ranged from three to eight. A minimum quota of 60% of correct answers was selected to conclude that a respondent had a good level of knowledge, attitude or the use of NSAIDs.

Statistical analysis

The results were analyzed using SPSS Statistical software (version 17.0, 2011 IBM corporation, USA). The chi-square (χ^2) test was used to assess the association between variables, and Cramer's V was used to determine the strength of this association. The level of significance of statistical tests was set at $p < 0.05$.

RESULTS

The study group consisted of 139 D1 players and 94 D2 players from 15 clubs in southern Benin (Table 1).

Table 1
Socio-demographic characteristics of the surveyed soccer players (n = 233)

	Number of players	Percentages (%)
Age group		
- 16 to 20 years	101	43.3
- 21 to 35 years	132	56.7
Level of instruction		
- University	62	26.7
- Secondary school	166	71.2
- Primary school or non-literate	5	2.1
Level of competition		
- Division 1	139	59.6
- Division 2	94	40.4
Seniority in soccer practice		
- Less than 10 years	33	14.2
- 10 years and more	200	85.8
Frequency of training sessions		
- More than 5 weekly sessions	93	39.9
- 4 to 5 weekly sessions	114	48.9
- 3 weekly sessions	26	11.2

The soccer players of the Division 1 and those of the Division 2 constitute the Beninese national top-elite.

Participants had an average age of 20.6 ± 3.6 years. Regarding educational level, 228 players (97.8%) had secondary or higher education, while the other players had only a primary education or did not attend school. Surveyed players all trained more than three times a week and 86.8% of them had been competing at soccer for 10 years or more. Tables 2, 3 and 4 show the player's answers for knowledge, attitude, and use of NSAIDs, respectively. Overall, 65.7% of surveyed players *versus* 34.3% ($p < 0.0001$) used NSAIDs, while 61.8% and 76.1%, respectively, had lower levels of knowledge and attitude towards NSAIDs, *versus* 38.2% ($p = 0.0005$) and 24.9% ($p < 0.0001$) whose levels were high.

Table 2
Responses of surveyed players to questions relating to their knowledge of NSAIDs (n = 233)

Items relating to knowledge on NSAIDs	Good n (%)	Distort n (%)
Knowledge on injuries		
1- Quote three injuries among the most frequent in soccer	23 (9.9)	210 (90.1)
Definition of inflammation and its symptoms		
2- An anti-inflammatory drug is a product which consumed by a player, allows him going on playing	195 (83.7)	38 (16.3)
3- Inflammation is a frequent injury in soccer, a natural protective reaction of the body, it can appear without any injury	44 (18.9)	189 (81.1)
4- It appears by the nervousness of the fellow-members on oneself, a swelling of the wounded part, a pain with the wounded part, a crisis, a decrease in the capacity of movement of the wounded part	118 (50.6)	115 (49.4)
5- Inflammation is treated by NSAIDs	222 (95.3)	11 (4.7)
Different forms of presentation, function and risks related to the use of NSAIDs		
6- The AIDs are presented in the form of balm, powder, tablet, gel, phial to be taken orally, capsule (*mikpogokpo*)	143 (61.4)	90 (38.6)
7- The AIDs are use as anodyne, platelet suppressive agent, anodyne, reabsorbant, releasing	106 (45.5)	127 (54.5)
8- Are there some risks related to the use of NSAIDs?	193 (82.8)	40 (17.2)
9- The health-related risks of the use of NSAIDs concern: bones, stomach, blood, menses, fecundity	74 (31.8)	159 (68.2)
10- Using a direction line, rely the following products to their medical indication	52 (22.3)	181 (77.7)

Numbers in the table indicate the numbers of players (n) and the corresponding percentages in brackets; *mikpogokpo*:it is the name of capsules in the national Language; Good: the answer is right; Distort: the answer is not right.

Table 3

Responses of surveyed players to questions relating to their attitude towards NSAIDs (n = 233)

Items related to the level of attitude	Good n (%)	Distort n (%)
Arrangements relating to injuries		
1- Do you take arrangements to avoid injuries?	215 (92.3)	18 (7.7)
2- If so, is it for avoiding consumption of anti-inflammatory drugs?	80 (34.3)	153 (65.7)
Arrangements relating to the use of NSAIDs		
3- What would you do if you got injured during a training session or a match: give up immediately, try going up, stop?	35 (15.0)	198 (85.0)
4- In the case of injury, to whom do you refer to for care? The vendors of pharmaceutics of the streets; the physician of your club, any health care personal, comrades?	206 (88.4)	27 (11.6)
5- Are you ready to use anti-inflammatory drugs throughout a competition period, a sportive season, all your career long?	99 (42.5)	134 (57.5)
6- Are you ready to replace anti-inflammatory drugs by other products?	141 (60.5)	92 (39.5)
7- If so, which effects would you wish that these products have: doping effect, preventive effect, without any secondary side effect ?	102 (43.8)	131 (56.2)

Numbers in the table indicate the numbers of players(n) and the corresponding percentages in brackets; Good: the answer is right; Distort: the answer is not right.

Table 4
Responses of surveyed players to questions relating to their use of NSAIDs (n = 233)

Items relating to the use of NSAIDs	Good n (%)	Distort n (%)
Behavior related to acquirement of NSAIDs		
1- Where do you get the AIDs that you use to consume? At the pharmacy, in the markets or with the street vendors, with friends, in the pharmaceutics mallet of the club	199 (85.4)	34 (14.6)
2- Happens it to you to use AIDs without medical prescription by a physician?	65 (27.9)	168 (72.1)
3- Who uses to prescribe AIDs to you? The physician, a physiotherapist, the coach, friends, street vendors, a pharmacist, other persons	184 (79.0)	49 (21.0)
Anti-inflammatory drugs and the behavior related to the mode of their use		
4- Among the following AIDs, which ones do you use to consume? Paracetamol, aspirin, profenid, panadol, nifluril, ibuprofen	12 (5.2)	221 (94.8)
5- Which type/kind of AIDs do you prefer to use? The one which does not induce stomach pains? Any one of them ?	186 (79.8)	46 (19.7)
6- Do you use to read carefully the notices before using the AIDs?	175 (75.1)	58 (24.9)
7- Do you always respect the dose prescribed by the physician?	199 (85.4)	35 (14.6)
8- Do you use to consume the AIDs until they finish?	144 (61.8)	89 (38.2)
- For how many time do you use AIDs in the case of:		
9- Strains: less than one week, 1 to 4 weeks, 1 to 3 months, more than 3 months	100 (42.9)	133 (57.1)
10- Fractures: less than one week, 1 to 4 weeks, 1 to 3 months, more than 3 months	97 (41.6)	136 (58.4)
11- Lacerations: less than one week, 1 to 4 weeks, 1 to 3 months, more than 3 months	139 (59.7)	94 (40.3)
12- Cramps: less than one week, 1 to 4 weeks, 1 to 3 months, more than 3 months	149 (63.9)	84 (36.1)

Numbers in the table indicate the numbers of players (n) and the corresponding percentages in brackets; Good: the answer is right; Distort: the answer is not right.

Players who had a high level of both knowledge and attitude towards NSAIDs were not significantly any more abundant than those who had a high level of knowledge but a low level of attitude towards NSAIDs (9.0% *versus* 29.2%; χ^2 = 0.71; p = 0.42). The same results were observed between a high level of knowledge and that of practice (27.0% *versus* 11.2%; χ^2 = 0.19; p = 0.12). However, the players who had a high level of attitude and a similar level of use of NSAIDs were significantly less than those who had a high level of attitude but a low level of use (18.9% *versus* 6.0%; χ^2 = 3.56; p = 0.04; Cramer's V = 0.12).

DISCUSSION

This study was conducted as part of the implementation of a strategy for the primary prevention of risks associated with the misuse of NSAIDs. The study's objectives were to determine the levels of knowledge, attitude and use of NSAIDs among the Beninese top level soccer players in a West African country, the Republic of Benin, and the relationship between these three variables. This type of study is known as KAP survey and is based on the theoretical relationships assumed to exist between the knowledge of respondents and their attitude or beliefs and practice. The results showed that: 1) only one third of surveyed players had what was considered a good knowledge of non-steroidal anti-inflammatory drugs and a quarter of them had good attitude towards these drugs. However, two thirds of these players made good use of NSAIDs; 2) a high level of knowledge has neither been further associated with good attitude nor with a good use of NSAIDs. On the other hand, good attitude regarding NSAIDs have been associated with their proper use.

The surveyed athletes play in Division-1 or -2 teams and belong to the national top-level soccer clubs of the Republic of Benin. Study participants regularly participated in national championships and came from 15 of the 16 soccer clubs in the southern Benin. These players are mostly literate since over 98% exceeded the level of study of primary education. In terms of their level of education, it is therefore reasonable to consider that the answers provided were relatively reliable. This high level of education could positively influence the level of knowledge of the surveyed players which is contrary to what can be expected in the clubs that are not part of the top tier and make up a large number of the players with little education. Furthermore, over a third of the surveyed players train intensively at least 5 times a week. These players train in a hot and humid climate and mostly on rugged surfaces or surfaces without synthetic coatings or grass. Under these training conditions, it is not unreasonable to expect a high incidence of injuries (23). In Division-1 and during competition, players have two games a week, which also increases the risk of injury (7). If we add the cases of injury recurrence, something that we have

not been able to document in this cross-sectional study, the proportion of the use of NSAIDs in this population should be current (11). If only 38.2% of the players surveyed (1 in 3) have a good knowledge of NSAIDs, it is likely the result of the use of a specialty pain-relief medication by these players. Usage mechanisms, side effects and therefore the long-term consequences of these products are certainly of little interest to these players, despite the fact that they present real risks when not used properly (25). Although low, these scores are consistent with those reported among informed individuals such as dentists, who presented a low level of knowledge related to NSAIDs in the treatment of people with high blood pressure (26). Similar results to the previously mentioned, reported that only 39% of doctors had a high level of knowledge regarding the use of NSAIDs for the treatment of osteoarthritis, although 74% of them were prescribing NSAIDs to ensure health care coverage (8).

In the current study, only a third of the players had good attitude. This composite variable included sub-variables such as injury prevention arrangements and those relating to the proper use of NSAIDs. The levels of these two sub-variables were not as high in the investigated group, which justifies that the majority of them did not have good attitude. As indicated above, our results certainly reflect a bad perception of these drugs by players who use them for immediate pain relief. They do not know that it is better to take precautions to avoid injury, rather than hurt and then treat themselves. Indeed, in top-level soccer players, the incidence of injury is high (6.2 to 32.8 injuries per 1000 hours of play) (20) and frequent recurrence is equally high. Thus, the players in our study do not appear to take preventive measures or think that drug consumption is enough to safeguard their physical integrity and produce good performance. This low-level attitude towards NSAIDs seen in Beninese top-level soccer players seems logical and justified based upon the knowledge recorded in the study group. These soccer players have not received expert advice on the treatment of injuries and the use of NSAIDs. Their current attitude were acquired from their peers or street-level drug dealers who are not qualified persons. This context is similar to that of the inhabitants of Seville (Spain) who, like our respondents, practice self-medication and follow the advice of unqualified persons (6). Our results, however, are contrary to those of a study in which doctors of Jordanian families have high-level attitude about the preventive treatment of vascular disease by aspirin (17).

What is paradoxical is that, based on the results of our surgey, two thirds of these same players emerged as making good use of NSAIDs, although the majority of them have low-level knowledge and attitude. This result shows that the theoretical relationship on which the KAP survey is based (good practice assumes a good knowledge and good attitude) is quite hypothetical (10). Beninese soccer players may have acquired such a high-level of NSAID use from street drug vendors who themselves learned it from their informal exchanges with qualified medi-

cal personnel. The liberalization of the sale of certain so-called optional prescription drugs in Benin has facilitated access to various products, including NSAIDs, from official sales channels (aspirin, paracetamol, ibuprofen, indomethacin, *etc*.). This same openness has allowed street-level drug dealers to acquire more or less reliable information, including the use of NSAIDs, which they made available to the players who are their clientele. We could not have results of investigations carried out on the issue, among athletes of other countries in Africa, Europe or Americas. The data available were collected on non-athletes e. g. is near people belonging to the general population (22), or physicians and dentists (3), parents of children (24) or farmers (9).Then, the proper use of NSAIDs observed in our study is consistent with that reported by Al Omari et al. (1) whose work established very good practices in prescribing aspirin among family doctors. Our data are contrary to those of a study in which a low-level of practice in the treatment of hypertension by NSAIDs among dentists was observed (19).

Concerning the relations between the three variables composite, significant association between attitude and practice supports the theoretical base of the KAP investigations. A good attitude with respect to the NSAIDs is translated in the facts by a good use in terms of accuracy of the reasons, use and respect of posologies.

CONCLUSION

This KAP survey is one of the first to be deployed on soccer players regarding their interaction with NSAIDs in sub-Saharan Africa and has made it possible to draw up and inventory the levels of knowledge, attitude and the use of NSAIDs in soccer circles in the Republic of Benin, while exploring the relationship between the three variables. The collected data revealed that most of the surveyed top-level players had a low-level of knowledge and attitude towards NSAIDs and a good level of use of these products. The assumptions that were behind the implementation of this work are partly confirmed. The first obstacle to the good use of the NSAIDs by the Beninese soccer players is their low levels of knowledge and attitude towards these drugs. The discussion allowed highlighting the potential negative influence of street drug dealers, on the use of the NSAIDs by the soccer players.

It is necessary that the authorities (the Ministry of Sports, the Football Federation, and other structures such as the Beninese National Olympic Committee, and the Ministry of Public Health) come together to create the conditions allowing each soccer club in D1 and D2 to have a sports physician and easy access to pharmaceuticals and establish a communication device for a change of attitude of soccer players towards the use of NSAIDs.

REFERENCES

1. Al Omari M, Khader Y, Al-azzam SI, Dauod AS, Khassawneh AH, Aliomari N, et al. Knowledge, attitudes and current practice of Jordanian family physicians about prescribing aspirin in primary and secondary prevention of vascular diseases a self-reported survey. Eur J CardiovascNurs. 2012; 11: 9-13. DOI: 10.1016/j.ejcnurse.2010.09.003.
2. Almutawa M, Scott M, George KP, Drust B. The incidence and nature of injuries sustained on grass and 3rd generation artificial turfs: A pilot study in elite Saudi National Tram footballers. PhysTher Sport. 2014; 15: 47-52.
3. Askarian M, Kouchak F, Youssef M, Romito LM. Comparing tobacco use, knowledge, attitudes and practices between engineering students at a public and islamic Azad University in Shiraz, Iran 2011. Int J Prev Med. 2013; 4: 1154-1161.
4. Bangsbo J, Morhr M, Krustrup P. Physical and metabolic demands of training and match-play in the elite football player. J Sport Sci. 2006; 24: 665-674.
5. Bio Nigan I, Capo-Chichi PU, Gouthon P, Adjahouinou C, Falola JM, Dansou P. Doping behavior among beninese athletes. Ann Flash. 2006; 12: 138-152.
6. Boivin A, Pineau I, Barrette B, Filali M, Vallières N, Rivest S, et al. Toll-like receptor signaling is critical for Wallerian degeneration and functional recovery after peripheral nerve injury. J Neurosci. 2007; 27: 12565-12576.
7. Bowen L, Gross AS, Gimpel M, Li F-X. Accumulated workloads and acute chronic workload ratio relate to injury risk in elite youth football players. Brit J Sport Med. 2016; 0: 1-8.
8. Carvalho VA, Borgatto AF, Lopes LC. Knowledge level for prescription of non-steroidal anti- inflammatory by dentists in São José dos Campos, São Paulo State, Brazil. CienSaude Colet. 2010; 15 Suppl 1: 1773-1782.
9. Do Amaral MAZ, da Rocha CMBM, Faccini JL, Furlong J, Monteiro CMO, Prata MCA. Perceptions and attitudes among milk producers in Minas Gerais regarding cattle tick biology and control. Rev Bras Parasol Vet. [Visité le 12/09/2013]. En ligne: http//dx.doi.org/10.1590/S19590/S1984-29612011000300003.
10. Elicois JD, Marguerite C. A survey on knowledge, attitudes and practice of first secondary school in the Goavian area, regarding risk and disasters management. The first report of survey. Arbeiter-Samariter-BundDeutchsland; (2012). 166 p.
11. Fournier PE, Leal S, Ziltener JL. Sport injuries and NSAID. Rev Med Suisse. 2008; 4:1702-1705.
12. Gajhede-Knudsen M, Ekstrand J, Magnusson H, Maffulli N. Recurrence of Achilles tendon injuries in elite male football players is more common after early return to play: an 11-year follow-up of the UEFA Champions League injury study.

Brit J Sport Med. 2013; 47: 763-768. DOI: 10. 1136/bjsports-2013-092271. Epub 2013 Jun 14.
13. Holmes N, Cronholm PF, Duffy AJ, Webner D. Nonsteroidal anti-inflammatory drug use in collegiate football players. Clin J Sport Med. 2013; 23: 283-286. DOI: 10.1097/JSM.0b013e318286d0fa.
14. Hrysomallis C. Injury incidence, risk factors and prevention in Australian rules football. Sports Med. 2013; 43: 339-354. DOI: 10. 1007/s40279-013-0034-0.
15. Médecins du Monde. Data collection. Quantitative methods. The exemple of CAP surveys (Knowledge, Attitude and Practice) 2011. [Visité le 15/06/2013]. En ligne http://www.medecins du monde.org/Publications/Guides-a-l-usage-des-professionnels-de-l-humanitaire/Collecte-de-donnees-methodes-quantitatives-l-exemple-des-enquetes-CAP-connaissances-attitudes-pratiques.
16. Milad M, Moser N, Kim R, Thillai M, Gringmuth R. A four year prospective study of injuries in elite Ontario youth provincial and national soccers players during training and match play. J Can Chiropr Assoc. 2014; 58: 369-376.
17. Montaño AA, Torelló IJ, Castillo FJR, Cayuela DA, Moreno GI, Fernàndez DP. The knowledge and attitude of consumers in relation to use of NSAIDs. An intervention study. AtenPrimaria. 1997; 20: 116-120.20.
18. Pasquina PF, Griffin SC, Anderson-Barnes VC, Tsao JW, O'Connor FG. Analysis of injuries from the Army Ten Miler: A 6-year retrospective review. Mil Med. 2013; 178: 55-60.
19. Smith BJ, Collina SJ. Pain medications in the locker room: to dispense or not. Curr Sports Med Rep. 2007; 6: 367-370.
20. Stubbe JH, Van Beijsterveldt A-M MC, Van der Knaap S, Stege J, Verhagen EA, Van Mechelen W, et al. Injuries in professional male soccer players in the Netherlands: A prospective cohort study. J Ath Train. 2015; 50: 211-216.
21. Tscholl PM and Dvorak J. Abuse of medication during international football competition in 2010 - lesson not learned. Brit J Sport Med. 2012. 46: 1140-1141. DOI: 10.1177/0363546509344071.
22. UlHaq N, Hassali MA, Shafie AA, Saleem F, Farooqui M, Aljadhey H. A cross sectional assessment of knowledge, attitude and practice towards Hepatitis B among healthy population of Quetta, Pakistan. BMC Public Health; 2012. 12:692. DOI: 10.1186/1471-2458-12-692.
23. Van Wijck K, Lenaerts K, Van Bijnen AA, Boonen B, Van Loon U, Dejong CH, et al. Aggravation of exercise-induced intestinal injury by ibuprofen in athletes. Med Sci Sport Exer. 2012; 44: 2257-2262.
24. Vladutiu CJ, Nansel TR, Weaver NL, Jacobson HA, Kreuter MW. Differential strength of association of child injury prevention attitudes and beliefs on practices: a case for audience segmentation. Inj Prev. 12: 35-40, 2006.
25. Wharam PC, Speedy DB, Noakes TD, Thompson JM, Reid SA, Holtzhausen

LM. NSAID use increases the risk of developing hyponatremia during an iron-man triathlon. Med Sci Sport Exer. 2006; 38: 618-622.
26. World Health Organization. A guide to developing knowledge, attitude and practice surveys. Geneva: WHO; 2008.

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