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The team physician in football: What skills are important?

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Abstract

Background: There is no formal training programme for the Team Physician (TP) in football at present. **Aim:** To determine the common medical conditions and injuries encountered by the TP of a national football team. This could assist the aspiring Team Physicians in self-directed learning. **Type of study:** A retrospective descriptive study. **Methods:** The records of 174 medical consultations of players and staff at 2 international football competitions, including preceding training camps, in which a National Football Team participated, were analysed looking at the nature and locations of injuries, the illnesses encountered, the referrals to other medical specialists, and the players presenting to the national team in an injured state. **Results:** 117(67.2%) of consultations were for injuries, 57(32.7%) were for illnesses and counselling sessions. Upper respiratory tract infections and gastrointestinal conditions accounted for 55% of illnesses. Of the injuries, 99 of 102 (97%) player injuries were soft tissue injuries. One (1%) of the player injuries involved a serious head injury. Five players required referrals to other specialists. Twelve (7%) of consultations involved evaluating and treating players presenting to national team training camps with injuries sustained at their clubs. **Conclusion:** The TP in football needs to be versed in: management of soft tissue injuries, emergency medicine and pre-hospital management of traumatic and medical emergencies, and common conditions seen in family medicine. Knowledge of the updated doping control regulations will prevent doping violations. Counselling skills, knowledge of adolescent issues, and basic osteopathic skills are useful. A referral network of medical specialist should be established when travelling.

Keywords: soccer; team doctor; illness; injury; athlete

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Introduction

Football is the most popular team sport worldwide. At present there are no formal training programmes for the team physician in football and only recently has the concept of football medicine been introduced to the football community by the Federation Internationale de Football Association (FIFA)[1].

National football teams are involved in 2 types of games. The first is a single game where the team gathers and plays a single match. The second is where a team gathers for 2-4 weeks to train and play competitive games. This study covers the latter type of game.

Little is known about the types of injuries and illnesses that a Team Physician sees in football. Whereas a comprehensive epidemiological study on significant injuries in a national team has been previously published [2], this did not include the majority of minor injuries which a TP sees and which could prevent training for less than 48-hours. A single study looking at injury and illness data involving the New Zealand Olympic team was recorded previously [3]. The injury and illness data of college athletes were also recorded in another study, but this focused on the role and functions of team physicians in college athletics and dealt with amateur athletes at a college campus [4].

In contrast to national Olympic teams, where there is usually more than one medical specialist with the team, in football there is usually only one Team Physician for the medical needs of the all players and staff when the team assembles.

The aim of this study is to describe the nature of illnesses and injuries encountered by a team doctor during two international football competitions and the preceding training camps associated with preparation for these tournaments. This analysis could be used to assist in the development of a curriculum for Team Physicians involved in football, or may be useful to assist in self-directed learning by aspiring football Team Physicians. From the authors' knowledge, there has been no such study which has focussed specifically on a national football team.

Methods

This retrospective, descriptive study looked at the medical records of all 174 medical consultations conducted by the Trinidad and Tobago National Men's Football team's TP for two international competitions during 2006 to 2007.

In 2006 this team participated in the FIFA World Cup in Germany and the entire team (23 players and 20 staff) lived together for 47 days. In 2007, the team took part in the Confederation of North America, Central America and Caribbean Football Federation (CONCACAF) Gold cup (Confederation Competition) in the United States and the team (20 players and 8 staff) lived together for 25 days. These 174 medical consultations spanned 72 days of the team living together. In football, the World Cup and the Confederation Competitions are the two most prestigious competitions that a national team can participate in.

The same team doctor (and author) examined all injured and ill players and staff members, and those records were analysed. The following parameters were examined:

- Types of injuries and illnesses for both players and staff;
- Referrals to other specialists;
- The consultations which involved players presenting to

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the national team for training camps in an injured state from their clubs.

All players and staff from the Trinidad and Tobago Football Team gave their written informed consent to have their data used in this research paper.

Data were analysed using Microsoft Excel™. Percentages and proportions were primarily used. An injury was defined as any pain or discomfort to the musculoskeletal system that a player experienced, either during training or in a game that caused him to seek the help of the medical staff. This was regardless of the whether the player missed any training sessions or games. A minor injury, or insignificant injury, is one in which the player returns to play in less than 48 hours. A major, or significant injury, is one which causes the player to miss more than 48 hours between the injury and the return to full training or game. An overuse injury was defined as a painful musculoskeletal condition that was of gradual onset and was not caused by any acute trauma or illness.

Results

One hundred and seventeen (67.2%) of consultations were injuries, 51(29.3%) were illnesses and 6(3.4%) were consultations in which the patient required counselling sessions.

1. Illnesses

The illness data are shown in Table 1. Fifty-five percent of the 51 illness consultations involved upper respiratory tract infections and gastrointestinal complaints.

Table 1: Illnesses experienced by the players and staff of the football team

Illness	No. of players (% of column)	No. of staff (% of column)	Total (% of column)
URTI [a] (tonsillitis, sinusitis, viral symptoms)	12(36.4)	4(22.2)	16(31.4)
Allergic rhinitis & atopic conditions	6(18.2)	2(11.1)	8(15.7)
GIT [b] (diarrhoea, GERD [c], perennial conditions)	3(9.1)	9(50)	12(23.5)
Skin (tinea ,cold sores, contact dermatitis)	4(12.1)	2(11.1)	6(11.8)
Headaches	3(9.1)	0(0)	3(5.9)
Other (Bronchitis, insomnia, toothache, STD [d], asthma)	5(15.2)	1(5.6)	6(11.8)
Total	**33(100)**	**18(100)**	**51(100)**

Numbers shown in parentheses represent percentages of each column total.
a=Upper respiratory tract infections
b=Gastrointestinal tract
c=Gastro-oesophageal reflux disease
d=Sexually transmitted disease.

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2. Injuries

The injuries suffered by both players and staff are shown in Table 2. Of the 102 injuries experienced by the players, 99(97%) were soft tissue injuries involving muscles, tendons, ligaments, or nerve injury. The other 3 (3%) injuries included: a scaphoid fracture, a meniscal tear to the knee and a cerebral contusion. Fourteen (13.7%) injuries suffered by players were considered overuse injuries, 88 (86.3%) were acute injuries. Injuries to the hamstring and quadriceps muscles represented the most commonly injured sites in both players and staff.

Table 2: Sites of injury of players and staff and frequency of occurrence

Injury site	No. of players (% of column total)	No. of staff (% of column total)	Total (% of column total)
Hip & Groin	16(15.7)	0(0)	16(13.7)
Hamstring & Quadriceps	27(26.5)	4(26.6)	31(28.0)
Ankle & Foot	17(16.7)	2(13.3)	19(16.2)
Leg & Knee	19(18.6)	5(33.3)	24(20.5)
Head & Neck [a]	11(10.8)	3(20)	14(13.7)
Upper limb & Trunk	12(11.8)	1(6.7)	13(11.1)
Total	**102 (100)**	**15 (100)**	**117 (100)**

Numbers in parentheses represents the percentage of each column total

[a] includes 1 player who was knocked unconscious during a game and had to be evacuated from the field of play in an unconscious state using head & neck precautions.

Four injuries required steroid injections at the site of the lesion: 1 acromio-clavicular joint injury (Grade 2), 1 1st metacarpo-phalyngeal joint of great toe, 1 inflamed iliopsoas bursa, 1 inflamed retrocalcaneal bursa. All players returned to play within 24-hours of receiving the injections.

3. Cases requiring counselling

Six patients (5 players, 1 staff member) required counselling sessions as follows: 2 were related to sexuality, 2 were about the chronic nature of overuse injuries, 1 dealt with weight loss and 1 dealt with domestic problems encountered at home.

4. Referrals

Five (2.9% of consultations) patients needed referral to other medical specialists. Two needed a referral to an orthopaedic surgeon; foe example, one player suffered a meniscus injury to the knee and one a delayed union of a scaphoid fracture. Two required a dental consultation, and one required a trauma surgeon for a cerebral contusion. Each patient was stabilised and/or started on initial medication before referral.

5. Chiropractor/Osteopathic treatment

On 3 occasions, a chiropractor or osteopath visited the team's hotel and 8 players voluntarily sought treatment.

6. Players presenting to National Team training camps in an injured state

Twelve players (7% of consultations) presented on the first day of the two training camps for treatment after being injured in their clubs. The location, outcome (whether they stayed or were released from the camp due to their injury), and the number of days each player remained out of full training are shown below in Table 3.

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Table 3: Location, frequency and outcomes for players presenting to a national team training camp in an injured state

Location of injury	No. of cases	Outcome(days out)
Groin	2	1 released, 1 stayed(2)
Hamstring	3	1 released, 2 stayed: (3),(21)
Quadriceps	3	All remained: (0),(4),(2)
Foot/Ankle	2	Both remained: (0), (2)
Knee	1	Remained (0)
Upper Limb (scaphoid fracture)	1	Remained (0)

The numbers indicated in parentheses represents the number of days each player remained receiving treatment before returning to full training with the team.

Discussion

A TP in football is responsible for the health of players and staff when travelling and at home camps. Overall, about 66% of the consultations involved the diagnosis and treatment of soft tissue injuries and 33% of the consultations involved treating conditions seen in general practice, or counselling patients. Players constituted the bulk (87%) of injuries and illnesses (65%) seen by the doctor. Staff members tend to be older, so in addition to acute injuries and illnesses occurring similar to that seen in footballers, more chronic diseases may be seen in this category of patients e.g. osteoarthritis.

Most injuries (97%) seen involved soft tissues and so the TP must be an expert at diagnosing and treating the various soft tissue injuries, including joint injections with steroids where appropriate. Being competent in treating these injuries means that the coach should be reliably informed of the estimated time that an injured player may be out of action before rejoining the team. This is one area where a professional relationship between the coach and doctor could develop. Atsatt stated that "…mutual confidence is necessary between the football coach and team physician…,"[5] and this is one way that this confidence can be developed, for if the estimates are reasonably accurate the coach could learn to trust the doctor's decisions.

More that eighty percent (86.3%) of injuries that the players experienced were acute, and 13.7% were overuse injuries. This compared with 80% and 20% respectively when compared with footballers playing for Sweden over 4 years[2]. The slight difference could be due in part to the much larger sample size for the Swedish study.

There was 1 severe head injury. The TP must be prepared to detect and manage these head and neck injuries [6]. Atsatt [5] states: "…the physician must have the ability to make an immediate evaluation of the extent of the injury and use appropriate measures to get the player off the field..." Though this was written over half a century ago and the method for the removal of a head-injured player from the field has evolved, this principle still holds today. Although this severe injury accounted for less than 1% of injuries, timely intervention could make the difference between permanent incapacity and a player being able to return to play in the future. It is therefore important that a TP has experience in pre-hospital assessment and management of injuries. A TP should be competent in the management of the unconscious patient and be versed in airway management and evacuation of a head- or neck-injured patient from the field of play. Competence in detecting and resuscitating cardiac arrest, though rare in sport, is also vital to the skills of a TP.

Orthopaedic surgeons have traditionally cared for teams (Ref?). Less than 2% of injuries seen were bony or involved knee cartilage, so a TP in football need not be an orthopaedic surgeon. A doctor covering a Commonwealth sporting event felt that the need for such doctors to be trained in general practice with experience in sport medicine rather than orthopaedic surgeons who would be more useful in the operating theatre[7]. In

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contrast, the authors of an analysis of illnesses and injuries at the college level felt strongly that an orthopaedic surgeon should be part of the physician team at college athletics despite only 4% of the musculoskeletal injuries requiring surgery at that institute[4]. The basis for this claim is that training in orthopaedic sports medicine allows expertise in making accurate diagnoses, interpreting imaging investigations and determining when an athlete could return to play after suffering a musculoskeletal injury. It is this researcher's opinion that a TP in football, with supervised, clinical training in sports injuries or musculoskeletal medicine, could fulfil the same role without being a specialist orthopaedic surgeon.

A literature search showed that whereas inhaled steroids is the first-line treatment of asthma, there was limited evidence to show the effectiveness of a steroid in acute injuries[8]. However, this review did not look at the rapid pain relief that athletes obtained when a non-weight-bearing joint is injured and an intra-articular injection is administered, e.g. the acrimo-clavicular joint. Four injuries required injected steroids and all were able to return to play or train within 24-hours. The steroid was administered only after obtaining the necessary abbreviated therapeutic use exemption (ATUE) approval from FIFA. The use of corticosteroid in injuries, such as sprained 1st metacapo-phalangeal joint sprains, should be investigated further.

More than 2.9% of consultations required a referral to another specialist. It is therefore important to have a network of specialists when travelling, as the TP may at times need to refer cases outside his expertise to someone more qualified or trained in other medical specialties. It is also important that a TP also be knowledgeable in evidence-based medicine and doing literature searches as this could be helpful for treating conditions for which he may diagnose but not know the current treatment options. A search of the medical literature could also assist in choosing between equally effective treatments for medical conditions that would not violate doping restrictions.

A challenge that a TP has when preparing for competitions is that some players present to the training camp in an injured state. Some prior injuries are known to the TP and some injured players either bring their diagnostic tests with them or the club doctor may communicate the findings of examinations and investigations to the national TP before the camp starts. Other players may have been injured just prior to travel and come to camp with unexpected injuries. All cases must be evaluated by the TP at the start of any camp. The nature of the injury will determine the estimated time that a player would be out of training. For single games, even relatively minor injuries may exclude players from partaking. In this study, 2 (16.7%) players out of 12 players who presented to the training camps in an injured state had to be excluded from the training camps and hence the football tournaments because the estimated time for recovery would have been too long to allow participation in the competitions. The need for replacement players being easily contactable and available should be considered when training camps are planned. For longer camps, a coach may give a player a chance to be rehabilitated during the camp if he is convinced that the player may get match fit in time for the competition. It should be noted that one player had a torn hamstring 1 week before the World Cup camp. When he was evaluated by the medical staff he required 3 additional weeks to return to play. He was given time to recover by the coach and took part in all 3 World Cup games.

Better communication links between the national TP and the various club doctors could serve to reduce this challenge. Sometimes this relationship may be hurt by managerial conflicts over whether a player should represent his club or country when both have games that are scheduled on dates that are close to each other.

The illnesses seen during the period were common illnesses seen mainly in general practice. This ranged from respiratory tract infections, skin diseases and common gastrointestinal disorders. Fifty-five percent of illnesses seen were of the upper respiratory tract (31.4%)

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and gastrointestinal conditions (23.5%). In Olympic athletes [3], respiratory infections accounted for 32.8% of medical consultations, with skin disorders in 15.9%. Gastrointestinal conditions accounted for 8.4% of these consultations. The illnesses were comparable to those experienced by Olympic athletes and college athletes. The most common health problems affecting tourists are accidental trauma, traveller's diarrhoea, respiratory illnesses and skin disorders [9]. This is similar to the health problems encountered by the football players except that the trauma in football players is as a result of the game of football. Experience in family medicine is thereby recommended for any TP in football.

Knowledge of the World Anti-Doping Agency (WADA) and FIFA [10] list of banned substances will prevent doping violations. Care is therefore required when prescribing medications for players with illnesses as some medications used to treat respiratory tract infections may contain banned substances. It is important to obtain a TUE from FIFA for the use of medications that need approval as soon as these treatments are contemplated [11].

Some experience in counselling skills is important as long tours may lead players to become homesick, and in addition, some conflicts may develop between players or between members of staff. The TP may have to assist in counselling the affected players or staff.

Basic osteopathic techniques of the spine is useful and can come in handy especially in longer tours where players may need treatments to which they are accustomed at their clubs. Short courses on spinal manipulation and manual medicine are now routinely available.

In conclusion, from the analysis of the medical consultations, a TP in football tournaments should be experienced in: musculoskeletal medicine and sport injuries (examining and treating soft tissue injuries), emergency medicine (including the pre-hospital management of on field emergencies like unconscious players and cardiac resuscitation if necessary); and be versed in the common conditions seen in family medicine. A good knowledge of the updated doping regulation is essential. Additional training in counselling skills, basic osteopathic skills, and adolescent issues would also be helpful. Having a referral network of medical specialists in the country where the training and/or competition will be held could assist the TP, especially when on long tours.

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