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# A Study To Determine The Extent Of First Aid Qualifications And Knowledge Among Team Officials In Non-Elite Youth Sport In England

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## Abstract

**Objectives:** To establish the extent of first aid qualifications and knowledge amongst coaches and officials working in five non-elite youth sports in England.

**Materials & Methods:** Questionnaires were administered to 1065 youth sports clubs across England. Data on first aider's qualifications and knowledge was requested in addition to information on medical record keeping and first aid equipment.

**Results:** 80% of respondents held an up to date first aid certificate, however only 57% and 41% respectively answered the "collapsed player" and "choking player" scenario correctly. A lack of confidence amongst first aiders to manage commonly occurring incidents such as shoulder dislocations, epileptic attacks and diabetic attacks was also highlighted.

**Conclusion:** First aid training providers should look at their courses and consider simplifying the content and altering the teaching methods in order to improve their student's skill levels and retention.

## INTRODUCTION

A recent review has highlighted that children involved in sport are exposed to a risk of injury and that the quality of "on field" medical care they receive is varied.<sup>1</sup> Although the risk is relatively low, when an injury does occur it is essential that it is correctly managed in order to limit immediate damage and further complications. This can be achieved by having an appropriately qualified first aider on hand at both training sessions and matches. In professional sport this is generally the case but at an amateur youth level the picture is less clear.

Sports Coach UK<sup>2</sup> "strongly recommends" coaches have attended an appropriate first aid course. Sport England have developed a scheme called Clubmark, which rewards and recognises those amateur clubs that operate in a "safe, effective, child friendly environment", again they suggest coaches should be trained in first aid.<sup>3</sup> However, neither of the above organisations has made holding a current first aid qualification a mandatory requirement for coaches to work

in youth sport.

The picture amongst the individual UK sports governing bodies is rather mixed. In tennis, coaches are required to have a current first aid certificate to gain (and retain) a coaching qualification.<sup>4</sup> The Football Association<sup>5</sup> includes first aid training in most but not all of their courses, and in gymnastics<sup>6</sup> coaches are encouraged to attend first aid courses but again it is not compulsory. It is also unclear as to how some governing bodies' monitor who has an up to date qualification and who has one that has expired.

Cunningham<sup>7</sup> found that 61% of youth football officials responsible for dealing with injuries did not possess a current first aid qualification and the level of first aid knowledge amongst the respondents was poor. There have been no other studies in this area in the UK. This paper seeks to build on the preliminary work of Cunningham<sup>7</sup> and look at four other sports in addition to football, the aims of this study are:

- To discover the prevalence of current first aid qualifications among youth sports officials responsible for the immediate care of injuries.
- To compare the first aid knowledge of officials with an appropriate qualification to those without such a qualification.
- To determine the extent to which medical and injury records are kept in amateur youth sport.

## **MATERIALS & METHODS**

Questionnaires and a covering letter of explanation were posted to the secretaries of 1065 youth sports clubs across England. Football, rugby, tennis, swimming and gymnastics clubs were targeted as these sports are amongst the most commonly played by young people in England.<sup>8</sup> The club secretaries were asked to pass the questionnaires on to the coaches or officials who were responsible for providing first aid at training sessions and matches.

The questionnaire was adapted from a previously validated questionnaire used in an earlier study.<sup>7</sup> Minor changes were included and the amended questionnaire was piloted on a number of coaches across a range of sports.

### **QUESTIONNAIRE DESIGN**

The questionnaire was divided into four sections.

Section A asked for data on the officials and identified age groups coached, years spent coaching, and first aid qualifications held either currently or having lapsed. Information on Criminal Records Bureau (CRB) checks was also requested.

Section B sought data on the medical supplies and equipment available to the club at both games and training.

Section C sought details on the extent to which clubs collected information on players' medical history and injuries and whether this information was kept confidential.

Section D asked first aiders to choose a response from a list of four alternatives to four injury scenarios. The validity and reliability of the injury scenarios was ensured by consulting previously validated guidelines and papers.<sup>9, 10, 11</sup> Respondents were also given a list of injuries and illnesses and asked to indicate which they felt they could confidently manage.

The project was approved by the ethics committee of the Faculty of Health at the University of Central Lancashire.

## **DATA ANALYSIS**

The data from the questionnaires were processed using the Statistical Package for the Social Sciences (version 12.0)

## **RESULTS**

Of the 1065 clubs contacted 222 returned the questionnaires giving a response rate of 21%. Of these 72% (n=160) had been involved in youth sport for over 5 years and 40% (n=89) worked with all age groups (8-18 years).

### **FIRST AID QUALIFICATIONS**

Current first aid qualifications were held by 80% (n=178) of respondents. Only 17% (n=30) of officials had attended sports first aid courses. Of the coaches involved in youth sport for less than five years, 92% (n=56) had a current first aid qualification, this figure dropped to 75% (n=121) in those involved for over 5 years.

Just over three quarters (n=173) of respondents reported being willing to pay less than £30 for a sports first aid course.

### **CRB CHECKS**

CRB checks had been undertaken on around three quarters (n=171) of first aiders. Of those officials who had been involved in youth sport under five years, 90% (n=55) had been CRB checked but this figure was 72% (n=117) for those with over five years experience.

### **FIRST AID EQUIPMENT**

Virtually all the clubs (n=214) had first aid equipment available at every game, and only 4% (n = 9) did not take equipment to training sessions. Strapping, dressings, ice and a telephone were routinely available. However, nearly half of respondents (n=102) did not have a pocket CPR mask and 14% (n=31) carried pain killers in their first aid bags.

### **MEDICAL RECORD KEEPING**

Health records were kept by 91% (n=202) of clubs, and specific injury reporting records were kept by 68% (n=151). Written parental consent for emergency treatment was gained by around two thirds (n=139) of clubs. However only 39% (n=87) ensured medical confidentiality by keeping the records in a locked cabinet.

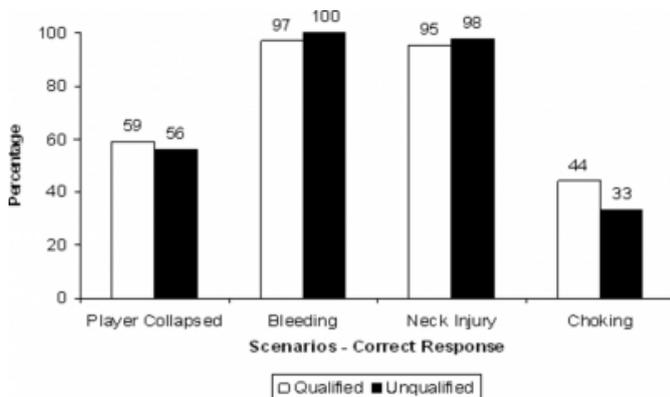
## INJURY SCENARIOS

The correct response was given by the majority of first aiders to the “external bleeding” (96%) and the “neck injury” scenarios (95%). Only just over half of the officials (n=126) answered the “player collapsing” scenario correctly, 35% (n=78) reported their first response to a collapsed player would be to check their breathing rather than determine responsiveness. Only 41% (n=86) of first aiders provided the correct answer to the “player choking” scenario. When presented with a player who appears to be choking but is coughing (and therefore has an airway), 23% (n=49) of respondents said they would perform the Heimlich manoeuvre and 30% (n=62) finger sweeps.

It appeared that having a qualification did not improve the overall first aid knowledge appreciably, and in the “neck injury” and “external bleeding” scenarios the unqualified officials performed marginally better (fig 1).

**Figure 1**

Figure 1: Injury Scenario Responses



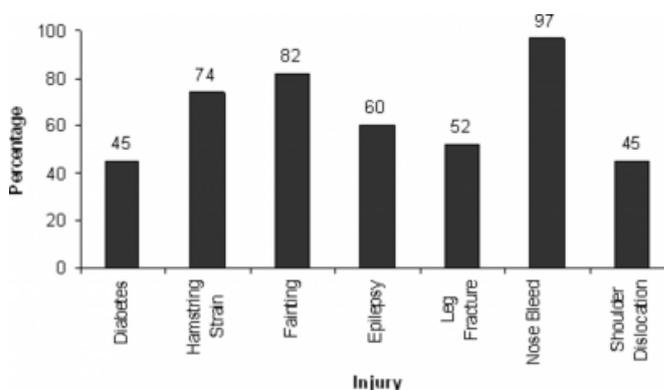
## CONFIDENCE TO TREAT INJURIES

Most first aiders were confident dealing with minor sprains, muscle strains, and cuts.

However, less than half (n=98) stated they would be confident in managing a diabetic attack, whilst 60% (n=131) of the respondents felt able to correctly deal with an epileptic attack. Only 52% (n=113) reported they felt assured in treating a lower leg fracture and only 45% (n=98) indicated a confidence to provide effective first aid to an athlete with a shoulder dislocation (fig 2).

**Figure 2**

Figure 2: Confidence of Respondents to Manage Injuries



## SUMMARY OF THE STRENGTHS & WEAKNESSES OF THE INDIVIDUAL SPORTS

a. Football Medical and injury record keeping was comprehensive in this group; however they provided the fewest correct responses to the four injury scenarios and also had the lowest number of coaches with CRB checks.

b. Rugby Despite reporting the most confidence at managing the injuries shown in figure 2, these respondents answered the injury scenarios poorly, only marginally better than the football coaches.

c. Tennis 96% of tennis coaches had both a first aid qualification and a CRB check which was comfortably the highest out of the 5 sports. However interestingly whilst they answered the injury scenarios the best they demonstrated the lowest level of confidence at dealing with the injuries in figure 2.

d. Gymnastics Out of the 5 sports, this group kept the most comprehensive medical and injury records. The number of coaches with first aid qualifications and the knowledge they displayed was about average for this study.

e. Swimming This group had the lowest number of first aid qualified coaches (68%), but the knowledge they displayed and their confidence to manage injuries was second only to the tennis and rugby coaches respectively.

## DISCUSSION

### FIRST AID QUALIFICATIONS & CRB CHECKS

The results of this study showed that 80% of coaches and officials who responded to the questionnaire had a current first aid qualification, compared with a figure of only 39% in a previous study on youth football clubs.<sup>7</sup> The fact that the majority of coaches involved in youth sport for less than 5

years had a current first aid qualification is encouraging and suggests that clubs are now placing a higher priority on this when employing coaches.

CRB checks had been undertaken on 77% of respondents; it appeared that the longer somebody had been involved in youth sport the less likely they were to be CRB checked. Recent high profile cases of child abuse in sports have resulted in an increased awareness of the need for child protection policies and this explains why the majority of recently qualified coaches have had appropriate CRB checks.<sup>12</sup> All of the sports governing bodies take the area of child protection very seriously and provide relevant training in the area and so the fact some coaches have not been CRB checked may be a worry to them.

### **FIRST AID EQUIPMENT**

First aid equipment was routinely available at both matches and in training sessions, which was encouraging. A common misconception is that injuries rarely occur in training; however a recent study found that 49% of injuries amongst youth football players occurred in training.<sup>13</sup> Factors such as greater time spent training compared to competition and players reluctance to wear protective equipment whilst practising contribute to this.<sup>14</sup> It is therefore vital that adequately equipped and trained first aiders are present at training sessions, not just competitive matches.

The fact that only 54% of first aiders had a pocket CPR mask and there were painkillers present in some bags was concerning. Pocket masks should be used during CPR as they protect both the first aider and the victim from blood/saliva borne diseases and also allow ventilation to be performed more efficiently.<sup>9</sup> The Football Association<sup>5</sup> states that “a first aider should not carry any supplies that they are untrained to dispense”. Painkillers clearly fall in to this category and they along with other medication should not be dispensed by first aiders to young athletes in any sport.

### **MEDICAL RECORDS**

The majority of clubs (91%) collected data on an athlete's medical history and any major conditions they suffered from. Such information is invaluable in the event of an athlete suffering an asthma or diabetic attack for example. It can be quite frightening for the first aider to be presented with such a case if they are unaware of the players' medical history. If this information is known by the attending coach they will be able to recognise the problem early, and should have easy access to a player's medication such as asthma

inhalers or insulin which will save valuable time in dealing with the condition.

More detailed injury records with information regarding the mechanism of injury, area injured, treatment received and time spent injured were kept by 68% of teams. This practice should be encouraged; documenting injuries and any treatment administered is important from a legal point of view especially in the increasingly litigious society we live in. In addition such information could identify injury trends and highlight common causes; this could then be used to develop injury prevention strategies.

Written consent should be obtained from parents before medical treatment is carried out on a child. This was obtained by 63% of clubs in this study. Due to the recent increased emphasis on child protection, gaining parental consent has become very important. It has now become unacceptable for a first aider to perform emergency medical treatment on a child or transport them unaccompanied to hospital without first gaining parental consent.<sup>15</sup>

### **INJURY SCENARIOS**

The poor level of responses to the “player collapsing” and “player choking” scenarios was concerning. Only 59% of qualified respondents stated that they would check the responsiveness of a collapsed player as their initial action, this is clearly stated as the correct response in the UK Resuscitation guidelines.<sup>9</sup> Over a third of the officials stated that they would check breathing first, however if a collapsed athlete responds to a first aider it is safe to assume they are breathing and so other priorities such as potential neck injuries can then be swiftly dealt with. This level of knowledge mirrors the responses given in the study by Cunningham<sup>7</sup> where only 56% of qualified first aiders in youth football answered a similar question correctly.

Equally worrying was the fact that only 44% of qualified officials provided the correct answer to the “player choking” response. When presented with an athlete who appears to be choking but is coughing the first aider should encourage them to keep coughing to try and dislodge the foreign object.<sup>9</sup> The fact that the individual is coughing indicates they have an airway, it is only when they stop that back slaps and subsequently abdominal thrusts should be commenced. Nearly a third of respondents stated that they would perform finger sweeps in such a situation, but this is not recommended due to the risk of pushing the object further down the airway. Again, this topic was answered poorly in

the earlier study on football study with only 18% of first aiders providing the correct response.<sup>7</sup>

Both the “external bleeding” and “neck injury” scenarios were answered correctly by the majority of respondents which was reassuring.

Figure 1 highlighted the fact that there appeared to be little difference in first aid knowledge between those individuals who had an up to date qualification and those without. This raises the question of whether first aid training is effective. However as the number of incorrect responses to the “player collapsing” and “player choking” scenarios showed, there is clearly a need for training. The issue is why are so many qualified first aiders demonstrating such a poor knowledge?

### **CONFIDENCE TO TREAT INJURIES**

Figure 2 demonstrates that many of the respondents had a lack of confidence in treating commonly occurring injuries and illnesses. It should be emphasised to first aiders that their primary role is to manage an incident until appropriate help arrives if this was understood their level of self-confidence in managing injuries would increase. One of the main attributes of a competent first aider is to be aware of their scope of training, understand the limits of their practice and be able to refer an individual to a suitable health care professional when appropriate.

For example, only 45% of respondents felt confident to deal with a dislocated shoulder. The management of such an injury is relatively straightforward; the first aider should help the player place the shoulder in the most comfortable position and then arrange transport to hospital. However this lack of confidence in dealing with this injury was possibly due to individuals incorrectly assuming that it was their role to reduce the dislocation which is not a skill taught on most first aid courses.

### **QUALITY OF TRAINING**

The proportion of first aid qualified coaches and officials in youth sport is far greater in this study compared to the earlier study by Cunningham<sup>7</sup> however their level of knowledge and confidence is still relatively poor in some areas. A similar study on high school coaches in the USA found only 38% of coaches displayed adequate first aid knowledge despite 89% of them being qualified in the area.<sup>16</sup> Similarly, Ransone and Dunn-Bennet<sup>17</sup> stated that although 92% of high school coaches questioned in their study were certified in first aid, only 36% passed a first aid test. The authors commented that

ensuring coaches have undertaken first aid training is not enough if the courses are not providing training specifically in the management of athletic injuries.

This leads to reservations about the quality of the first aid training and raises the following questions.

- Is the first aider's role clearly defined?
- Are courses preparing individuals to work in sport?
- Are the teaching and learning methods appropriate?
- Is there a need for more regular refresher courses to maintain and develop skills?

It has already been discussed that the first aider's role is to manage a situation until appropriate help arrives if required. Applying ice, strapping, neck collars or administering drugs and performing detailed joint assessments are not the role of the first aider. However these skills are taught or mentioned in some first aid courses which can cause confusion and a lack of confidence amongst the students as to their role. For example Sports Coach UK<sup>18</sup> provide a handbook which accompanies their three hour “Injury Prevention and Management” course in which coaches are shown how to construct a cervical collar out of newspaper and then fit it. Elsewhere coaches are encouraged to perform passive and resisted movements and specific tests on injured joints.<sup>18</sup> Forming a diagnosis based on selective tissue testing requires a lot of training and is not the role of the first aider. Courses need to re-evaluate their content and possibly simplify the teaching in order to address this problem.

There are very few sports specific first aid courses in the UK. In this study the “player collapsing” and “player choking” scenarios were answered poorly and a lack of confidence at dealing with certain illnesses and injuries was shown. However, it is difficult to argue that these areas could have been improved on if the first aiders had attended a sports first aid course as these incidents do not occur exclusively in sport. This is not to say that sports specific courses should not be encouraged. Scenarios such as determining whether an athlete can play on or not often require a split second decision to be made which requires different skills to providing first aid at work for example.

Of more importance is the method of teaching and the learning style employed by existing courses. Typically

students attend a first aid course with no prior knowledge and then after 1-2 days of intensive training are expected to retain all the information and be competent first aiders. This is unrealistic, if the students undertook a series of assessed pre-course modules to learn the theory and then attended a practical session learning outcomes may be improved. This could be facilitated by taking advantage of online-learning for example. Incorporating first aid modules into coaching courses rather than teaching it completely separately may also result in improved learning. Teaching courses in the environment that first aiders will be working in such as a gymnasium or field of play would also help to replicate real scenarios.

CPR skill retention and the length of time between re-training has long been an issue with first aiders. This reduced skill retention can be put down to a combination of poor teaching techniques and the fact that first aid emergencies in youth sport occur fairly infrequently and so individuals rarely get to practice their skills.<sup>19 20</sup> A recent study found that CPR skills deteriorated over the 6 months post-training but were improved in the long term if a refresher course was completed after 6 months.<sup>21</sup> This would seem to indicate that more frequent refresher courses need to be undertaken by first aiders in order to consolidate their skills. Coaches may rightly argue that they have not got time to undertake further first aid training in addition to their coaching and child protection courses. However, it is a very important issue and if these refresher courses were combined with some of their other mandatory training this problem could be overcome.

## **STUDY RESPONSE RATE**

Whilst the response rate for this study was quite low at 21%, the overall number of responses (222) makes it the largest study of its kind ever undertaken in the UK.

A low response rate reduces the sample size and can introduce non-response bias.<sup>22</sup> It is possible that non-qualified officials were reluctant to return the questionnaires and this led to an artificially high percentage of qualified adults making up the sample. However, it was emphasised to the participants that the study guaranteed anonymity and there was no chance their responses could be traced back to them which should have reduced this. Unfortunately, this anonymity meant that reminder letters could not be sent out to non-responders as there was no way of knowing who had replied which was another reason for the low response rate.

## **CONCLUSION**

The number of qualified first aiders working in youth sport appears to have increased in recent years. In this study they demonstrated an excellent level of knowledge on dealing with scenarios involving external bleeding and spinal injuries. However, the scenarios on a player collapsing and a player choking were answered poorly and a lack of confidence to manage some commonly occurring injuries was also demonstrated.

First aid training providers should look at their courses and consider simplifying the content and altering the teaching methods in order to improve their student's skill levels and retention.

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