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Title page

Title:

Pilot study into knowledge and confidence of sports trainers in community level
Australian Rules football leagues

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Abstract

Australian Rules football (ARF) is a common team sport played in Australia. Injury rates from ARF are higher than most sport and recreational activities in Australia, with substantial cost to the community from injuries. The aim of this research was to investigate if community level ARF sports trainers responsible for dealing with injuries have appropriate first aid qualifications, knowledge and confidence. There was no known research in this area for Australian football. A questionnaire was designed and distributed to two Melbourne metropolitan community level ARF leagues (65 clubs) via post. Sports trainers were invited to provide details of qualifications, injury recording and club rules for injuries. Trainers were also questioned on their responses to injury scenarios and their confidence in dealing with certain injuries. Only eight completed questionnaires were returned. Most respondents had sport first aid qualifications but did not record injury reports. Club injury recovery procedures were almost non-existent. Only 50% of respondents correctly answered the "player choking" injury scenario. Many trainers reported not referring players and treating injuries themselves, therefore acting outside their role and responsibilities as a trainer. The results of the study emphasize the need for providers of first aid training to reassess their teaching of various injury scenarios and the importance of referring injured players to appropriate health practitioners. Sporting leagues should regulate that all trainers complete an accredited sports first aid qualification to ensure confidence and competence of their trainers and potentially reduce complications from sports injuries. Further research in the area is needed.

Words: 250

Introduction

Countless numbers of sporting games are played throughout Australia over the winter season on any given weekend. Almost one-third (31.4% or 4.6 million) of the Australian population aged eighteen years and over had participated in some sport and physical activities that were organised by a club, association or other organisation in 2002¹. Most of these games are played at the regional or community level through many amateur or professional associations. There are many reasons why people play team sports. Many play it as a social activity, some play for their fitness and a lucky few who are good enough also play for financial rewards.

Playing sport does not come without risks². Independent research commissioned by Medibank Private (an Australian Health Insurance Company) found that in Australia, one in ten Australians experience some form of sports related injury every year³. The report found that the community incurs 5.2 million sports injuries each year with 3.6 million of these injuries going untreated. The cost of sports injuries to the community, including the costs associated with treatment by health professionals along with the indirect costs incurred through time away from work, was estimated to be more than \$1.83 billion. It was estimated that 15% of workers who sustained a sports injury had to take time off work, at an average of nearly nine days injury leave.

Australian Rules football (ARF) is one of the most common team sports played in Australia. Participation is dominated by males (297,700 in 2002), with only 10,100 females in 2002 participating¹. It is one of the more dangerous sports with regard to both acute and long-term injury potential⁴. In the Latrobe Valley of Victoria, Australia, ARF has the highest number of sport or recreational activity injury presentations to both hospital emergency departments (24.0%, 95% CI = 21.6 to 26.4) and general practitioners (22.0%, 95% CI = 19.5 to 24.6)⁵.

Injury rates for community level ARF are higher than almost all of the popular sports in Australia. The incidence of ARF injuries in the community during games was reported in two studies to be 96 per 1000 playing hours⁶ and 52.8 per 1000 playing hours⁷. In South Australia, ARF is reported to have the highest percentage of players injured and highest odds ratios of sport-specific injury than any other sport surveyed⁸. On average, an ARF community team will incur during one week of competition, two sporting injuries requiring some type of treatment each at an average cost of \$251 per player per season⁹. Still, as high as 24% of current football injuries were being managed by untrained personnel⁸. Body contact was the most common cause of injuries at community level ARF⁷, whereas overuse injuries were more common at the elite level¹⁰.

There are almost no published studies that examine the qualifications, competence and confidence of officials responsible for dealing with injuries in sport, and none for ARF. One study audited two English youth football leagues by questionnaire¹¹. The respondents were examined for competence by a series of multi-choice questions, which showed a lack of competence in multiple areas. Only thirty-nine per cent of respondents had a current first aid qualification, which may explain their lack of competence. This study should differ from community level ARF for adults, as leagues usually require trained first aid officials assigned specifically for that job at each game. There are no published studies that examine the self-confidence of officials responsible for dealing with injuries in sport.

The qualifications required to become a sports medical trainer vary between the ARF leagues around Australia. Generally these qualifications require updating every three years, with the cardio pulmonary resuscitation (CPR) component updated every year. Each individual league has their own set of rules regarding what qualifications are required for medical trainers. Many require a sports specific first aid accreditation to register as a trainer in their league. These accreditations can be gained by attending courses run by various organisations throughout Australia, such as Sports Medicine Australia & Australian Sports Trainers Association. Such qualifications include the sports first aid accreditation, which covers mostly the management of first aid commonly seen in sporting situations.

Some leagues require a minimum of a general level two first aid accreditation as taught by most first aid organisations throughout Australia. The qualification covers a broader range of first aid situations not specific to sports. This qualification may not be enough for trainers to be competent to deal with first aid situations that may arise during sport. This perceived variability in minimum qualifications might indicate variability in the quality and standard of care to the players by the trainers. Having the correct knowledge and training should help reduce the incidence of injury, side effects of injuries and risk of recurrence.

This research attempts to answer the following questions of ARF at the community level:

- (1) What is the prevalence of appropriate first aid qualifications among trainers?
- (2) What is the prevalence of professional indemnity insurance coverage among trainers?
- (3) What is the prevalence of medical and injury record keeping at ARF clubs?
- (4) What is the prevalence of teams' rules for management of general injuries and concussion?
- (5) Is there a difference in the appropriate first aid knowledge and competencies between trainers who hold sports first aid qualifications and those who hold general first aid qualifications?
- (6) Is there a difference in the appropriate first aid knowledge and competencies of trainers at different grades of competition?

Methods and procedures

Measures

The questionnaire was divided into four sections. The questions in Section A covered demographics of the trainers such as their age, years spent as a trainer, any relevant qualifications held or current education completing, whether they held a current CPR certificate and whether they had professional indemnity insurance.

Section B sought data on supplementary information on the clubs such as average number of trainers per game, whether clubs collected information on players' personal health and kept injury records, and whether clubs had rules for management of general injuries and concussion.

Section C questioned the trainers on their response to injury scenarios to measure competence. Seven multiple-choice questions were asked. These were followed by five short answer questions each scored out of a maximum of five points. Validity and reliability of the injury scenarios and the appropriate response were established prior to distribution. This was achieved by review from a panel of qualified sports trainers with a minimum of five years experience from ASTA, who also taught and assessed sports trainers for sports trainers' accreditation, and the principal researcher.

Section D listed injuries or illness scenarios and the trainers were asked to indicate on numerical rating scales (NRSs) out of ten how self-confident the trainer felt to deal with the scenarios. The same scenarios followed for self-perceived competence gained from their training, also rated on NRSs out of ten.

Sampling Procedure

The questionnaire was piloted on fifteen students of the university who were also ARF trainers but not part of the leagues to be questioned. Trainers were asked to report any ambiguities in questions or the format of the questionnaire. Revisions were made on the basis of their responses. The Human Research Ethics Committee of Victoria University approved all procedures.

A total of six questionnaires and letters of explanation were sent to each team manager of 65 football clubs from two community level ARF leagues in metropolitan Melbourne. A letter of explanation to the team manager asked that the questionnaires be distributed to trainers of the club who were responsible for dealing with first aid on a pre-determined weekend. Two different ARF leagues were considered: one required a minimum of a senior first aid accreditation for its trainers whereas the other required at least one trainer to hold a minimum of a level one sports trainers' accreditation and the rest a sports first aid accreditation. Questionnaires were returned via reply-paid envelopes provided with the questionnaires.

Statistical analysis

All data were processed using Microsoft Excel 2000 (Version 9; Microsoft Corporation). Methods applied were frequencies and cross tabulation.

Results

Four sets of six questionnaires were returned due to incorrect postal address. Only a total of eight questionnaires were returned. Seven of the eight respondents were experienced trainers with an average experience of nine years (range: 4 - 20) and average age of 39 years. The exception was a trainer of sixteen years of age with six months of experience as a trainer.

Respondents reported to having an average of 2.3 trainers present at each game played, with no change in averages for different levels of adult ARF within the leagues.

First aid qualifications held

Seven of the respondents (88%) reported that they held a sport specific first aid qualification, all having a level one sports trainer's qualification. Four also held a general level two first aid qualification and one held a level three first aid qualification. The respondent without a sports specific first aid qualification held a general level two first aid qualification. One respondent was unsure if their CPR qualification was still current.

Table 1: Trainers' qualifications held and current study of relevance

Qualifications/study	Percentage of respondents *
Level 1 sports trainer	88%
Level 3 first aid	13%
Level 2 first aid	63%
Registered nurse	13%
Studying physiotherapy	13%
Studying osteopathy	13%

* Respondents could hold more than one qualification

Record keeping

Only one respondent (13%) recorded that teams kept health records, and two (25%) recorded that injury reports were kept.

Injury recovery rules or procedures

No respondents reported their team having rules or procedures for recovery from injuries such as being cleared by an appropriate health professional before being able to train or play. Only one (13%) respondent reported a rule or procedure for clearance of a player with a suspected concussion, the rule being no play for two weeks without a doctor's clearance.

Injury scenarios

Seven injury scenarios were asked as multiple-choice questions with five possible choices (Table 2). Half of the respondents incorrectly answered the “player choking” injury scenario. Three respondents incorrectly reported that vomiting was not a symptom of concussion. Three respondents incorrectly reported that they would not move a player who may have broken his neck and not breathing, and commence expired air resuscitation in the position the player was found in. Although all respondents correctly identified a second impact leading to death as a possibility for a concussion, two respondents reported they would incorrectly manage a player with a headache that begins while playing, which could have been from a concussion.

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Table 2: Multi-choice questions for section C of questionnaire

Injury/illness scenario	Respondents correct
Which of the following is <i>not</i> a sign or symptom possibly indicating concussion?	63%
Which of the following is <i>not</i> a sign or symptom possibly indicating shock?	75%
What should be done when a player appears to be choking and coughing?	50%
A player jumps up for a mark, but misses his target. He lands on his head and bends his neck sharply. When you reach him, he is unconscious and no longer breathing. What would you do next?	63%
A player has comes to you at half time complaining of a headache. The player suggests taking some Panadol (Paracetamol) for his headache. He does not know why he has a headache or remember receiving a knock to the head. What would you do?	75%
A player falls over forwards, bracing themselves hard with their arms outstretched. They have hurt one of their wrists with significant swelling. What would be the <i>best</i> possible management of such an injury?	75%
Which situation is the <i>worst</i> possible scenario from sustaining a concussion?	100%

A further five injury scenarios were asked as short answer questions (Table 3). One or two key statements were identified for each scenario and answered were analysed if the respondents reported these statements. Most respondents reported the correct management for a *significant* thigh haematoma (corky). Three respondents (37%) would not refer a player with a concussion to hospital or a medical practitioner. All but one respondent reported the correct response to an unconscious player. 63% did not report for a player to either have done rehabilitation first or see an appropriate health practitioner for rehabilitation before a player returns to play after a significant ankle injury. Only two (25%) respondents reported more than two steps for players to undertake for post-game recovery.

Table 3: Respondents score out of a maximum of five points for short answer scenario questions – section C of questionnaire

Scenario	Mean	Range
Steps for concussion management	3.8	1 to 5
Steps for thigh haematoma (“corky”) management	3.5	1 to 5
Unconscious player on the field during play	4.1	1 to 5
Player returning to play after a significant ankle injury	2.9	0 to 5
General steps for post game recovery	3.1	2 to 5

Confidence to treat injuries

The results from self-confident and self-perceived competence were relative the same (Table 4). All respondents felt very confident to deal with simple cuts ($\bar{m} = 9.9$) and minor bleeds ($\bar{m} = 9.8$). All respondents were less confident to deal with asthma attacks ($\bar{m} = 7.7$) and diabetic attacks ($\bar{m} = 6.8$).

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Table 4: Self-confidence & self-perceived competence numerical rating scales scores for injury or illness scenarios – section D of questionnaire

Injury/illness scenario	Self-confidence		Self-perceived competence	
	Mean	Range	Mean	Range
Muscle strain	7.6	4 to 10	7.9	4 to 10
Joint sprain	7.6	4 to 10	7.7	4 to 10
Simple cut	9.9	9 to 10	9.8	9 to 10
Bruising	8.6	4 to 10	8.7	4 to 10
Minor bleeding	9.8	6 to 10	9.8	9 to 10
Major bleeding	8.4	4 to 10	8.8	7 to 10
Fractured bone not pierced the skin	8.1	6 to 9	8.4	7 to 9
Fractured bone has pierced the skin	7.9	5 to 10	7.9	5 to 10
Epileptic fit	7.8	3 to 10	7.8	3 to 10
Asthma attack	7.7	6 to 9	7.6	6 to 9
Diabetic attack	6.8	5 to 8	6.9	6 to 9
Conscious concussed player	8.4	7 to 10	8.4	7 to 10
Unconscious player	8.4	7 to 10	8.3	6 to 10
Unconscious player stopped breathing	8.4	7 to 10	8.5	7 to 10
Unconscious player no pulse	8.1	4 to 10	8.1	4 to 10
Suspected spinal neck fracture	7.6	4 to 10	7.9	4 to 10

Discussion

In recent years, a number of published studies have contributed to the increase in knowledge of injury incidences at community level ARF in Australia^{7, 12, 13}. From such studies, we have begun to gain a knowledge of how often injuries occur and which injuries occur the most. It creates the potential to examine and reduce the injury risks, allowing participants to gain greater health benefits and less down time from sport. Decreasing the amount of morbidity decreases the economic costs of treatment to the participant and the wider community. Coaches around Australia rank injury prevention highly¹⁴, possibly as it would decrease the down time of the team's players allowing the best players available more often.

From an ARF perspective, there is an excess risk of injury associated with the participation in the game². It is a high-speed contact sport with a mouth guard being the only protective gear a player usually wears. Occasionally, a player might wear a soft padded helmet to protect their head. Injury surveillance studies have found a disproportionately high percentage of injured players presenting at general practice^{5, 15}, emergency departments^{5, 16}, and sports medicine clinics^{17, 18}. Recently, the average injury rate of five amateur football clubs was reported at 52.8 per 1000 hours played during games⁷, with a lower injury rate occurring during training.

ARF community level games vary from elite games in a number of ways. They are generally shorter, the officiating of the game is less strict, ground conditions are more variable and medical support is less common¹². As such, different types of injuries are probably more common at different levels of competition. The most common reported cause of injury is due to body contact^{7, 12}, where as at the elite level, overuse is the most common cause¹⁰. It is important for community ARF to have sports trainers with the abilities to correctly deal with injuries seen in ARF; a standard first aid qualification may not be adequate. Some of the injuries can be life threatening¹⁹, or have long-term consequences such as concussion²⁰.

Recent studies have provided knowledge of which injuries are seen at the community level ARF in Australia^{7, 12, 13}. Most injuries due to ARF occur to the lower limb^{7, 21}. The most common natures of injuries experienced have been reported to be concussion, muscle strains or tears, ligament sprains or tears and bruising (contusions and haematomas)^{6, 7, 9, 17}. The most common provisional diagnoses are reported to be hamstring muscle strains, thigh haematomas and lateral ankle sprains⁷.

First aid qualifications

The leagues could be opening themselves to litigation for not providing the correct first aid coverage at games. If a trainer not properly qualified is sued due to improper management of an injury, a league could be found to breach their standard of care if it could be shown that a correctly qualified sports trainer would have provided the correct management and prevented the problem. As such, leagues should ensure their trainers are correctly qualified with the proper knowledge for management of sport first aid. Trainers and league officials also have a duty to do “all that is reasonable to avoid participants being injured”. Leagues should be proactive in the education of their trainers in the correct management of injuries as well as injury prevention. The clubs and individual sports trainers usually do not have the time and resources to do this.

Record keeping

It could be presumed that as ARF community leagues generally employ sports trainers for first aid coverage at games, that health and injury record keeping would be more prevalent than where trainers are not employed. A similar study also found low health and injury record keeping in two English youth football leagues¹¹, yet health record keeping was reported to be much higher than this research. Over half of the English study’s respondents did not possess a current first aid qualification, yet health records were kept by forty per cent of teams. Whereas, only one respondent of this research recorded that their team kept health records.

Valuable information can be gained to ascertain if the player is at an increased risk of sustaining an injury from gathering health records. Trainers may not be able to fix most of these risk factors, but they should at least be able to identify risk factors and know appropriate practitioners to refer the players to in such cases. They are in a perfect position to help promote and educate players on injury prevention. Cost saving from injuries could be achieved if effective preventive programmes are developed and implemented to reduce the incidence of injury^{22, 23}.

The risk of injury in community sport is 45% higher for participants who had a previous injury compared to those who had no prior injury, and 69% higher if participants have a back problem. As such, "all players with a prior or current injury should seek professional advice from a sports medicine professional and be fully rehabilitated before returning to sport" and that "greater emphasis needs to be placed on the care of the back in order to reduce the risk of sports injury²²."

Not only are these records for the benefit of the players, they are also important for the defence of litigation brought against sports trainers. Having accurate records of advice and first aid given to players are less likely to be disputed in court than testimonial evidence. More emphasis needs to be placed on the importance of record keeping during the training and retraining of sports trainers.

Injury recovery rules or procedures

Muscle strains of the lower limb are common injuries in ARF, with major risk factors for lower limb muscle strains including a recent history and a past history of the same injury²⁴. One type of muscle strain also increased the risk of certain types of other muscle strains. There is strong evidence in the literature that previous injury and inadequate rehabilitation is a risk factor for subsequent injury². As such, it would make sense to ensure players are properly assessed and treated by appropriate practitioners after such injuries. Yet no respondents reported their team having rules or procedures for recovery from injuries, such as being cleared by an appropriate health professional before being able to train or play.

A recent study found that less than 50% of US high school football players reported their concussion sustained during play, with the most common reason for not being reported was a player not thinking the injury was serious enough to warrant medical attention (66.4% of unreported concussions)²⁵. This could also be the case in community level ARF. Players and colleagues must be taught how to detect concussion, its clinical features, assessment techniques, and principles of safe return to play following a concussion should be done at every club²⁶; the easiest way could be though the clubs' sports trainers yet no respondents reported this.

Rule changes and rule enforcement play a key role in reducing and preventing concussions²⁶. Having club based rules on return to play after concussion is important for the players' protection. Players need to get them-selves assessed and cleared for play by qualified medical practitioners for their concussion^{26, 27, 28}, even if they think the injury isn't serious enough to warrant medical attention. Even so, only one respondent reported a rule or procedure for clearance of a player with a suspected concussion. This was the same respondent who reported their team kept health records and injury reporting records, and who had 20 years experience as a trainer.

Injury scenarios

Many of the trainers would find that they would be acting outside their role and responsibilities as a trainer if they did act according to their responses to the injury scenarios section. The most common example in the trainers' responses for this was not referring a player with an injury to a health practitioner and taking it into their own hands. This was most evident in responses for a significant ankle injury (63% did not refer) and a concussion (37% did not refer). Trainers in these cases would find that they would be overstepping their boundaries of professional competence of first aid into rehabilitation in these circumstances. It takes years of learning and experience before health practitioners have sufficient knowledge to correctly manage the multitude of injuries seen in sport, yet many trainers believe they are able to do so with their very limited training. They would be found to be acting outside their insurance policy and therefore would not be covered if litigation were brought against them.

A similar problem has been identified with fitness instructors in Australian gyms, where instructors are trying to improve the fitness of people with medical problems or injuries and crossing into the boundaries of exercise into rehabilitation. The instructors in this situation are crossing their boundaries of competence and risk worsening the person's health or injuries. Boundaries between the health professions are becoming progressively more blurred as professionals are undertaking activities that used to be the exclusive preserve of other professions²⁹. Sports trainers need to be aware that they are acting as a type of informal health professional with the responsibilities of a professional, as many may not be aware of this. With the decrease in formality of professional relationships comes increase difficulty for professionals to maintain professional boundaries. This has been described to be the case with doctor-patient relationships³⁰ and could explain why sports trainers may cross the boundaries with the players under their care – the trainer-player relationship is usually a very casual one. Sports trainers need to be made more aware of not crossing over their professional boundaries of competence, as described to them when completing their sports trainers' courses²⁸.

Half of the respondents incorrectly answered the "player choking" injury scenario. Three respondents indicated they would use a finger sweep in dealing with a player who was choking but coughing and therefore breathing, and one respondent indicated they would begin abdominal thrusts. This is consistent with a similar study of English youth football with slightly more than half of the respondents indicating they would use a finger sweep in dealing with a player who was choking but coughing and therefore breathing¹¹. More emphasis needs to be put on the correct management of in conscious and choking person during the training and retraining of sports trainers.

Only two respondents reported more than two steps for players to undertake for post-game recovery. Such steps could include warming down, stretching, rehydrating, icing injuries, no alcohol, and getting any injuries managed correctly, with most reporting icing injuries plus one other response. Not drinking alcohol more than once a week has been reported to reduce the chance of a sports injury by 18%²². Appropriate post-event meals are taught in sports trainers' curriculum²⁸, yet only one trainer reported educating players on such meals. Further research is necessary to determine whether stretching³¹, warm up or cool down sessions are protective against injury. Until then, before and after training or game preparation should be advocated¹³. Sports trainers should be doing more for their team's players for post-game recovery.

Confidence to treat injuries

After the examination of the results of self-confidence and self-perceived competence, it was believed that self-perceived competence was not measuring their competence and instead measuring their self-confidence, as the respondents rated self-perceived competence themselves and the results were relatively the same. Therefore the results of self-perceived competence were considered invalid.

On examination of individual responses of self-confidence, there were two cases where a trainer's responses varied from the other respondents in regard to confidence to treat certain injuries. A respondent who did not have a sport's first aid qualification responded with low confidence to deal with common musculoskeletal injuries seen in ARF (NRS = 4). Ensuring all trainers have completed a sports first aid qualification within an ARF league could ensure trainers to be confident and competent.

The respondent with almost no experience (6 months) and of a young age (16 years) responded low to confidence for dealing with a variety of serious injuries compared to the other respondents (NRS range = 3 to 5). Therefore, this trainer should not work alone as a trainer until the trainer is sufficiently confident. As all respondents were less confident to deal with asthma attacks and diabetic attacks, sports trainer should be trained more competently for these situations when completing their qualifications and re-qualifications.

Limitations of research

This preliminary study was designed to ascertain if there is a problem with a lack of sport first aid knowledge and competencies of ARF trainers. The very low response rate contributing to a small sample size is a significant limitation of this research. This did not allow a statistical analysis to be conducted. This includes comparing self-confidence from section D and competence measured in section C, as well as comparing between different qualifications and different leagues. Therefore, the aims of this research could not be satisfied.

The low response rate may indicate reluctance for team managers to pass on questionnaires to trainers. In the future, greater support and assistance would be required from the leagues themselves; a collaborative effort overseen by the leagues and the university is believed to be ideal¹⁴. This would allow promotion of the questionnaire and therefore a larger cohort to be surveyed. The low response rate may also indicate a reluctance to return questionnaires from non-confident or inexperienced trainers, which may have caused a response bias of experienced sports trainers for this study. A similar study of English youth football reported that the majority of respondents were experienced football officials¹¹, which is the same case in this research. Trainers may also be reluctant to return questionnaires by post.

Conclusion

Although this research could not provide results to establish the aims, important issues are raised for the community. Sporting associations should ensure their sports medical trainers are correctly qualified with the proper knowledge for management of sport first aid. Players and colleagues must be educated about concussion at every club. Sports trainers need to be made more aware of their role as a professional and not to cross over their professional boundaries of competence. More emphasis needs to be put on their responsibility of referring a player with an injury to health practitioner including a concussion and the importance of record keeping. Sports trainers should be trained more competently for dealing with asthma attacks, diabetic attacks and a choking but conscious person when completing their qualifications and re-qualifications. Sports trainers should be doing more for their team's players for post-game recovery.

Further research in the area is needed to establish the true picture of sports trainers' knowledge and confidence at community level ARF. A collaborative effort overseen by the leagues and the universities is needed for such research to be successful.

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Sports Trainers Questionnaire

Appendix D – Sports Trainers Questionnaire

This questionnaire is designed to take a snap shot of information on a particular point in time. Please answer all questions in relation to the weekend of Friday 25th to Sunday 27th June, 2004. If your response to a question would normally be different on another weekend, do not answer it in relation to the past or future. Answer how it is exactly on the weekend of the 25th to 27th June only.

Section A – Basic Data

- 1) How old are you? ____ years of age
- 2) Which football league is your team part of?
 - ☐ Eastern Football League
 - ☐ Diamond Valley Football League
- 3) What division level does your team play for?
 - ☐ Division 1
 - ☐ Division 2
 - ☐ Division 3 (EFL only)
 - ☐ Division 4 (EFL only)
- 4) How long have you worked as a Sports Trainer (no. months/years)? _____
- 5) What qualification(s) do you hold that you use be a Sports Trainer (please tick all that apply)?
 - ☐ Medical Doctor
 - ☐ Physiotherapist
 - ☐ Sports Trainer Accreditation – Level 2
 - ☐ Sports Trainer Accreditation – Level 1
 - ☐ Sports First Aid Accreditation
 - ☐ Senior First Aid Accreditation – Levels 1 & 2
 - ☐ Other(s) – please specify: _____
 - ☐ None

Sports Trainers Questionnaire

- 6) What courses or degrees, if any, are you currently in the process of studying but have not completed relevant to being a Sports Trainer (please tick all that apply)?
- ☐ Physiotherapy Degree
 - ☐ Chiropractic Degree
 - ☐ Osteopathy Degree
 - ☐ Myotherapy Degree
 - ☐ Medical Practitioner Degree
 - ☐ Nursing Degree
 - ☐ Personal Trainers Course
 - ☐ Other(s) – please specify: _____
 - ☐ Study not relevant to being a trainer
 - ☐ Not studying
- 7) Do you hold a current CPR certificate (please tick)?
- ☐ Yes
 - ☐ No
 - ☐ Not sure if it is still valid
- 8) If no, how long ago did your CPR certificate expire (please tick)?
- ☐ Still current
 - ☐ Less than 1 year
 - ☐ Between 1 and 2 years
 - ☐ Between 2 and 3 years
 - ☐ Between 3 and 5 years
 - ☐ Greater than 5 years
- 9) What is your insurance situation for working as a sports trainer (please tick)?
- ☐ Have my own personal insurance
 - ☐ Covered under my club
 - ☐ Unsure if covered
 - ☐ Do not have any insurance
- 10) Are you the head trainer at your club (please tick)?
- ☐ Yes, please continue to **Section B – Head Trainer's Questions on the next page (page 36)**
 - ☐ No, please skip to **Section C – Injury Scenarios on page 37**

Sports Trainers Questionnaire

Section B – Head Trainer's Questions

- 1) How many trainers did you have at each game this weekend?
(Averages are allowed eg if you have 2 trainers for half the game and 1 trainer for the other half, answer with 1 ½)
 - a) Seniors: _____
 - b) Reserves: _____
 - c) Under 19's: _____
- 2) Do you keep personal health records for each player at your club?
(please tick)
☐ Yes
☐ No
- 3) Are specific injury reports recorded for each injury a player sustains at your club?
(please tick)
☐ Yes
☐ No
- 4) Does your club have any procedures or rules, or a process that you make sure all players commit to, that players must follow between from sustaining a *significant injury* and returning to play after that *injury*?
☐ No
☐ Unsure
☐ Yes, please give details: _____

- 5) Does your club have any procedures or rules, or a process that you make sure all players commit to, that players must follow between from when sustaining a *suspected concussion* and returning to play after the *suspected concussion*?
☐ No
☐ Unsure
☐ Yes, please give details: _____

Please continue to *Section C* on the next page (page 8)

Sports Trainers Questionnaire

Section C – Injury Scenarios

The following Multi Choice Questions only have one correct answer. Please circle the answer you believe to be most correct.

- 1) Which of the following is **not** a sign or symptom possibly indicating concussion?
 - a) Trouble Breathing
 - b) Vomiting
 - c) Memory Disturbances
 - d) Visual Disturbances
 - e) Speech Difficulties
- 2) Which of the following is **not** a sign or symptom possibly indicating shock?
 - a) Fast heart rate
 - b) Increased breathing rate
 - c) Too high body temperature
 - d) Excessive urination
 - e) Changes in personality
- 3) A player appears to be choking and is coughing. What should be done in this situation?
 - a) Perform the Heimlich manoeuvre
 - b) Instruct the player to sit down and drink a cup of water
 - c) Do not interfere and encourage the player to continue coughing
 - d) Clear the players airway with a finger sweep
 - e) Begin abdominal thrusts
- 4) A player jumps up for a mark, but misses his target. He lands on his head and bends his neck sharply. When you reach him, he is unconscious and no longer breathing. What do you do next?
 - a) Do not move him in case he has a broken neck, and commence EAR in the position he is found
 - b) Do not move him in case he has a broken neck and call an ambulance
 - c) Find and apply a cervical collar before turning him on his back to commence EAR
 - d) Turn him on his back straight away and commence EAR
- 5) A player has comes to you at half time complaining of a headache. The player suggests taking some Panadol (Paracetamol) for his headache from his bag. He does not remember receiving a knock to the head. What do you do?
 - a) Suggests that the player doesn't take any medication and that the player waits until the headache has resolved for a significant time before returning to play
 - b) Allow the player to take the medication and suggests that the player waits until after the headache has resolved for a significant time before returning to play
 - c) Allow the player to take the medication and continue playing
 - d) Suggest that the player doesn't take the medication and allow the player to continue playing
 - e) Leave it up to the player to decide

Sports Trainers Questionnaire

- 6) A player falls over forwards, bracing themselves hard with their arms outstretched. They have hurt one of their wrists with significant swelling. What would be the **best** possible management of such an injury?
- a) Move the wrist back to free up the movement.
 - b) Apply a compression bandage to the wrist to allow them to continue playing.
 - c) Apply ice for 20 minutes to help reduce the swelling.
 - d) Stop them from playing any further in the game and advise them to see a medical practitioner during the following week.
 - e) Send them off to hospital as soon as possible to check for a fracture.
- 7) Which situation below is the worst possible scenario from sustaining a concussion?
- a) The players feels a bit dizzy and has a headache for a short while
 - b) The player loosing their co-ordination so that they are unable to perform the skills required to play
 - c) Loosing consciousness for a short time
 - d) Persistent irritability and inability to concentrate for months after the initial concussion
 - e) Receiving a small second knock to the head that leads to the players death

The following questions are short answer questions. Please complete every question in the section to the best of your ability.

- 8) List the necessary steps you would take to ensure the safety of a player who you strongly suspect has a concussion.

- 9) A player receives a knock to his thigh and as a result, a haematoma (commonly known as a "corky") develops with pain and swelling. Outline what you would advise your player to do.

Sports Trainers Questionnaire

- 10) A player collapses to the ground after clashing heads with an opponent. Outline the steps you would take when finding a player unconscious.

- 11) A player sustains a significant ankle injury. What things would you make sure the player has done before he returns to play?

- 12) What post-game steps would you suggest to the players at your club to recover properly from the game?

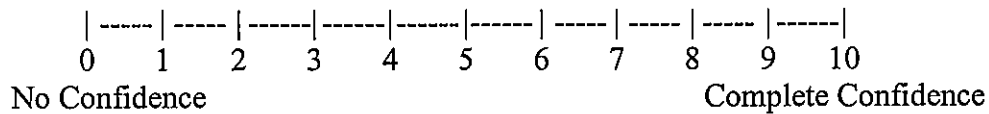
Please continue to *Section D* on the next page (page 11)

Sports Trainers Questionnaire

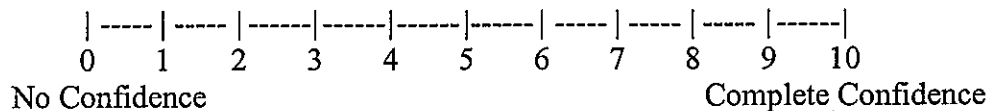
Section D – Self-Confidence & Self-Perceived Competence to Treat Injuries

In this section, please circle the number between 0 and 10 corresponding to the amount of confidence you believe of yourself would have in dealing with the following injuries successfully. With 0 being *no confidence at all* and 10 being *complete confidence* in treating the injury successfully.

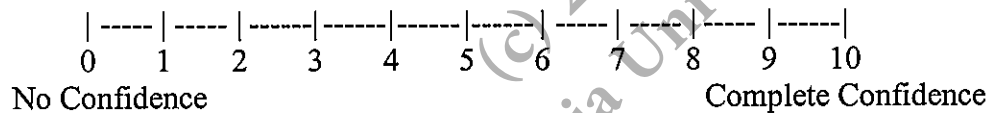
1) A Muscle Strain



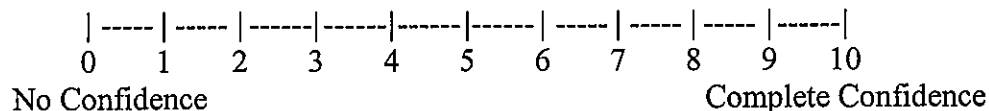
2) A Joint Sprain



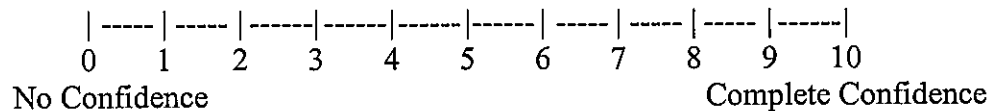
3) A Simple Cut



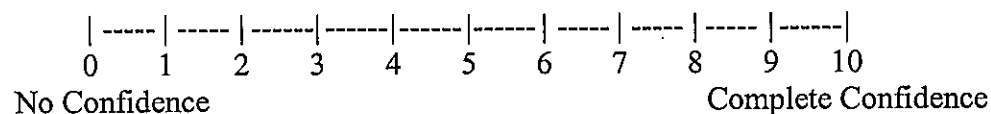
4) Bruising



5) Minor Bleeding

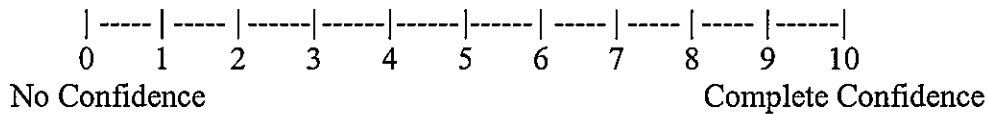


6) Major Bleeding

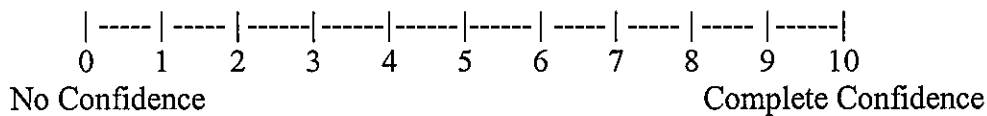


Sports Trainers Questionnaire

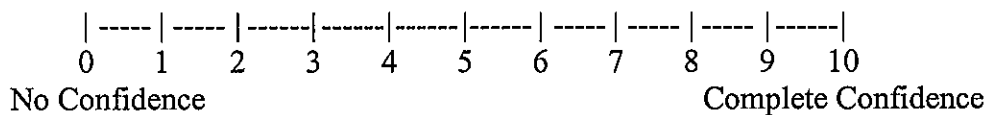
7) **A Fractured Bone that has not Pierced the Skin**



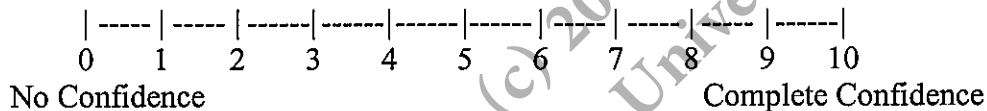
8) **A Fractured Bone that has Pierced the Skin**



9) **An Epileptic Fit**



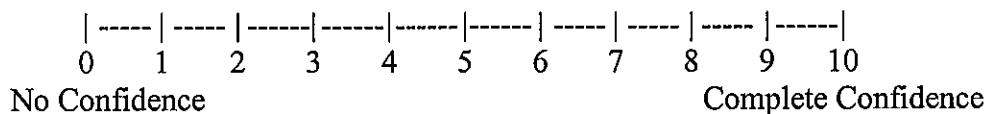
10) **An Asthma Attack**



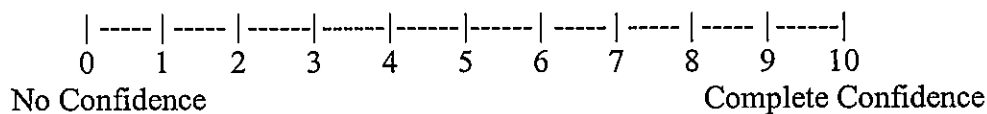
11) **A Diabetic Attack**



12) **A Conscious Concussed Player**

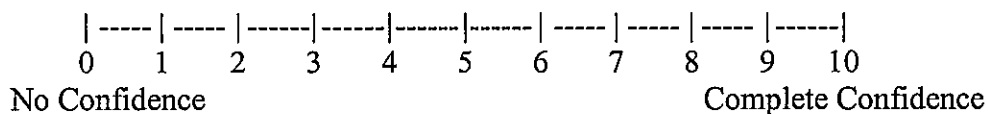


13) **An Unconscious Player**

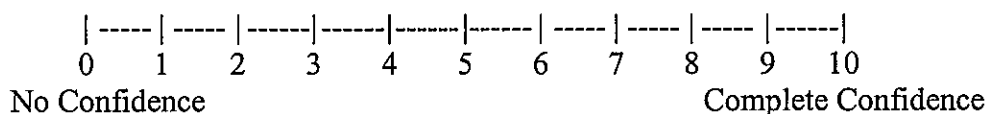


Sports Trainers Questionnaire

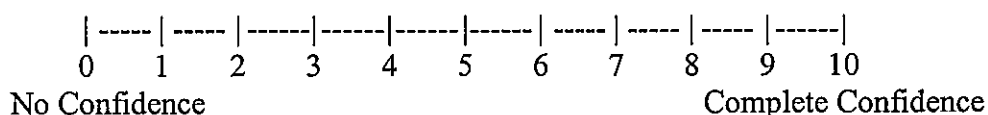
14) An Unconscious Player who has Stopped Breathing



15) An Unconscious Player who no Longer has a Pulse

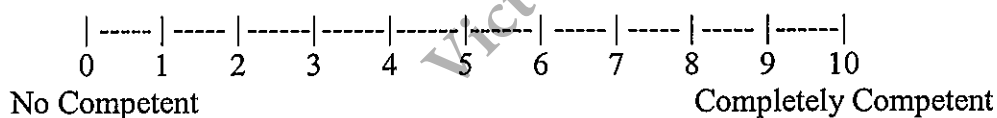


16) A Suspected Fracture of the Spine in the Neck

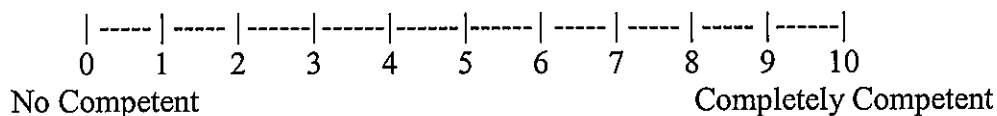


Next, please circle the number between 0 and 10 corresponding to the amount of competence you believe of yourself would have in dealing with the following injuries successfully. With 0 being *not competent at all* and 10 being *completely competent* in treating the injury successfully.

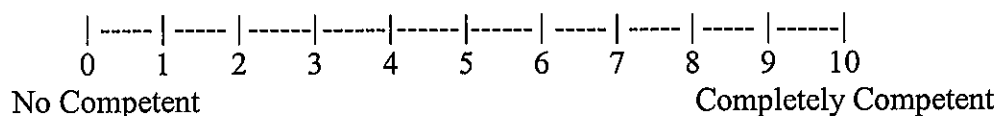
17) A Muscle Strain



18) A Joint Sprain

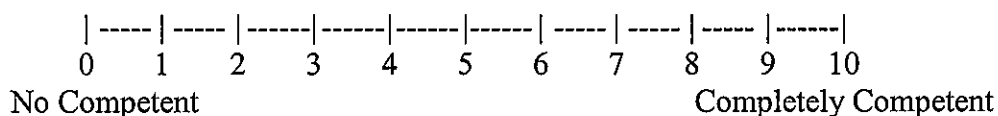


19) A Simple Cut

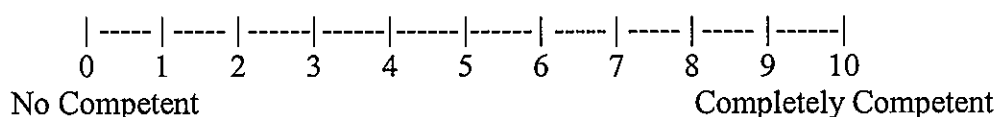


Sports Trainers Questionnaire

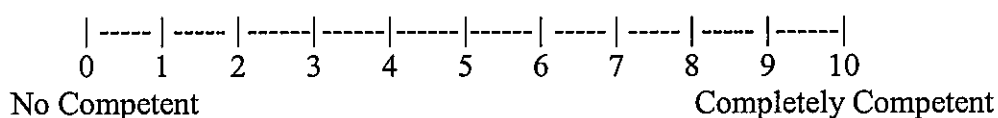
20) Bruising



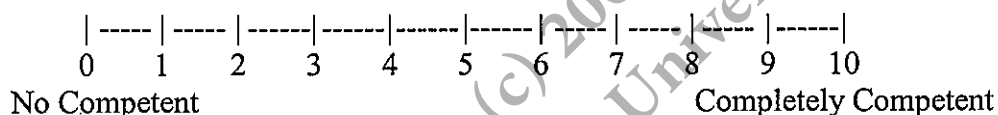
21) Minor Bleeding



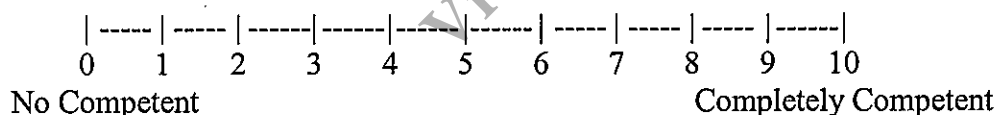
22) Major Bleeding



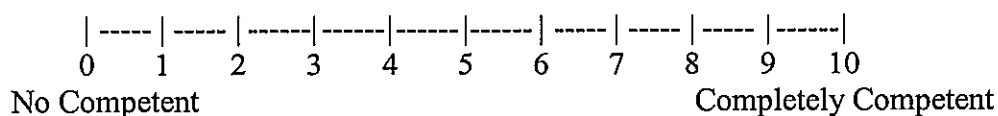
23) A Fractured Bone that has not Pierced the Skin



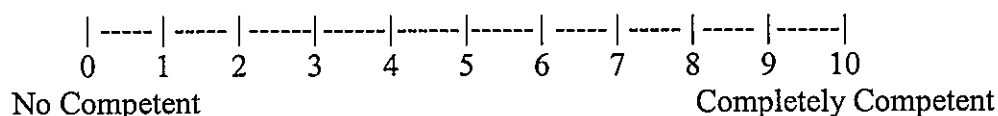
24) A Fractured Bone that has Pierced the Skin



25) An Epileptic Fit



26) An Asthma Attack



Sports Trainers Questionnaire

27) A Diabetic Attack

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

28) A Conscious Concussed Player

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

29) An Unconscious Player

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

30) An Unconscious Player who has Stopped Breathing

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

31) An Unconscious Player who no Longer has a Pulse

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

32) A Suspected Fracture of the Spine in the Neck

0 1 2 3 4 5 6 7 8 9 10
No Competent Completely Competent

That is all.

Thank you for your time.

Please post the questionnaire back in the reply paid envelope provided.

Appendix E – Sports Trainers Questionnaire: Answers to Section C

Multi-choice Questions

- 1) Which of the following is **not** a sign or symptom possibly indicating concussion?
 - a) **Trouble Breathing**
 - b) Vomiting
 - c) Memory Disturbances
 - d) Visual Disturbances
 - e) Speech Difficulties
- 2) Which of the following is **not** a sign or symptom possibly indicating shock?
 - a) Fast heart rate
 - b) Increased breathing rate
 - c) Too high body temperature
 - d) **Excessive urination**
 - e) Changes in personality
- 3) A player appears to be choking and is coughing. What should be done in this situation?
 - a) Perform the Heimlich manoeuvre
 - b) Instruct the player to sit down and drink a cup of water
 - c) **Do not interfere and encourage the player to continue coughing**
 - d) Clear the players airway with a finger sweep
 - e) Begin abdominal thrusts
- 4) A player jumps up for a mark, but misses his target. He lands on his head and bends his neck sharply. When you reach him, he is unconscious and no longer breathing. What would you do next?
 - a) Do not move him in case he has a broken neck, and commence EAR in the position he is found
 - b) Do not move him in case he has a broken neck and call an ambulance
 - c) Find and apply a cervical collar before turning him on his back to commence EAR
 - d) **Turn him on his back straight away and commence EAR**
- 5) A player has comes to you at half time complaining of a headache. The player suggests taking some Panadol (Paracetamol) for his headache from his bag. He does not remember receiving a knock to the head. What would you do?
 - a) **Suggests that the player doesn't take any medication and that the player waits until the headache has resolved for a significant time before returning to play**
 - b) Allow the player to take the medication and suggests that the player waits until after the headache has resolved for a significant time before returning to play
 - c) Allow the player to take the medication and continue playing
 - d) Suggest that the player doesn't take the medication and allow the player to continue playing
 - e) Leave it up to the player to decide

- 6) A player falls over forwards, bracing themselves hard with their arms outstretched. They have hurt one of their wrists with significant swelling. What would be the **best** possible management of such an injury?
- Move the wrist back to free up the movement.
 - Apply a compression bandage to the wrist to allow them to continue playing.
 - Apply ice for 20 minutes to help reduce the swelling.
 - Stop them from playing any further in the game and advise them to see a medical practitioner during the following week.
 - Send them off to hospital as soon as possible to check for a fracture.**
- 7) Which situation below is the worst possible scenario from sustaining a concussion?
- The player feels a bit dizzy and has a headache for a short while
 - The player losing their co-ordination so that they are unable to perform the skills required to play
 - Losing consciousness for a short time
 - Persistent irritability and inability to concentrate for months after the initial concussion
 - Receiving a small second knock to the head that leads to the player's death**

Short Answer Questions

- 8) List the necessary steps you would take to ensure the safety of a player who you strongly suspect has a concussion.
- Remove the player from the field, do not allow back on**
- Monitor the player for signs of concussion such as:**
- pupils, orientation, co-ordination and memory**
- Repeatedly ask the player about symptoms of concussion**
- Get someone to take the player to a GP or hospital**
- 9) A player receives a knock to his thigh and as a result, a haematoma (commonly known as a "corky") develops with pain and swelling. Outline what you would advise your player to do.
- Rest the leg as much as possible**
- Ice the area for the next 24-48 hours, every two hours**
- Apply a compression bandage to the thigh**
- Place the leg in an elevated position**
- No heat, alcohol, activity or massage for the next 48-72 hours**
- Refer them on to a qualified practitioner to deal with such injuries**
- 10) A player collapses to the ground after clashing heads with an opponent. Outline the steps you would take when finding a player unconscious.
- Remove any dangers by having umpires stop play**
- Determine responsiveness**
- Turn player onto the lateral position**
- Clear his airways, especially removing the mouth guard**
- Check for breathing**
- Check for pulse**

- 11) A player sustains a significant ankle injury. What things would you make sure the player has done before he returns to play?

Seek appropriate medical evaluation and treatment from a qualified practitioner

Return to original ankle range of motion and stretch muscles

Strengthened muscles around the ankle

Proprioception or joint sense training

Pain free

Possibly strap their ankle before each game

- 12) What post-game steps would you suggest to the players at your club to recover properly from the game?

Stretch

Warm down

Ice any injuring

Refrain from Alcohol

Rehydrate

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Appendix F – Raw Pooled Data & Statistical Outputs

Section A – Basic Data

Question Respondent Number	A1 Age	A2 League Division	A3 Division	A4 Years Experience	A5 Qualifications 1	A5 Qualifications 2	A6 Study	A7 CPR Current	A8 If No, When Expired	A9	A10
1	38	DVFL	1	10	RN	1st Aid Lvl 2	No Study	Yes		Club	Yes
2	43	DVFL	1	4	Sports Trainers Lvl 1	1st Aid Lvl 2	Osteo	Unsure		Club	Yes
3	39	EFL	3	6	Sports Trainers Lvl 1	1st Aid Lvl 2	No Study	Yes		Unsure	No
4	22	DVFL	1	2.5	Sports Trainers Lvl 1	1st Aid Lvl 2	Physio	Yes		Club	Yes
5	36	EFL	1	6.5	Sports Trainers Lvl 1	1st Aid Lvl 2	No Study	Yes		Club	No
6	16	DVFL	1	0.5	Sports Trainers Lvl 1		Not Relevant	Yes		Club	No
7	55	EFL	1	20	Sports Trainers Lvl 1		No Study	Yes		Club	Yes
8	38	DVFL	2	12	Sports Trainers Lvl 1	1st Aid Lvl 3	No Study	Yes		Unsure	Yes
Mean	36			7.7							
Maximum	55			20							
Minimum	16			0.5							

Qualification	Frequency	Percentage of Respondents
Sports Trainers Lvl 1	7	88%
1st Aid Lvl 3	1	13%
1st Aid Lvl 2	5	63%
RN	1	13%

Section B – Head Trainer's Questions

Question	B1a	B1b	B1c	B2	B3	B4	B5
Respondent Number	Senior Trainers	Reserve Trainers	U19 Trainers	Personal Health Records	Injury Records	Injury Rules	Concussion Rules
1	2	2	-	No	No	No	No
2	3	3	2	No	Yes	No	No
3							
4	3	2	2	No	No	No	No
5							
6							
7	2.5	2.5	3	Yes	Yes	No	Yes
8	1.5	1.5	-	No	No	No	No
Mean	2.4	2.2	2.3				
Maximum	3	3	3				
Minimum	1.5	1.5	2				

Section C – Injury Scenarios

Question	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
Respondent Number	Not Concussion SSx	Not Shock SSx	Choking & Coughing	Unconscious, No Breathing, Neck Fracture	Has Headache, Wants Panadol	FOOSH Injury Wrist Management	Worst Scenario for Concussion	Steps for Concussion Management	Haematoma Management	Unconscious Player	Return to Play from Ankle Injury	Post Game Recovery
1	0	0	1	1	0	1	1	2	4	5	1	3
2	1	1	0	0	1	1	1	2	5	4	4	5
3	0	1	0	1	1	1	1	5	5	4	2	3
4	1	0	1	1	1	1	1	5	4	5	5	5
5	1	1	0	1	0	1	1	1	3	4	1	2
6	0	1	0	0	1	0	1	5	1	1	0	2
7	1	1	1	0	1	1	1	5	5	5	5	2
8	1	1	1	1	1	0	1	5	1	5	5	3
Mean	0.63	0.75	0.50	0.63	0.75	0.75	1.00	3.8	3.5	4.1	2.9	3.1
Percentage	63%	75%	50%	63%	75%	75%	100%	75%	70%	83%	58%	63%
Maximum								5	5	5	5	5
Minimum								1	1	1	0	2

Section D – Self-Confidence & Self-Perceived Competence to Treat Injuries

Self-Confidence

Question	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16
Respondent Number	Muscle Strain	Joint Sprain	Simple Cut	Bruising	Minor Bleeding	Major Bleeding	Fractured Bone not Pierced Skin	Fractured Bone has Pierced Skin	Epileptic Fit	Asthma Attack	Diabetic Attack	Conscious Concussed Player	Unconscious Player	Unconscious Player Stopped Breathing	Unconscious Player no Pulse	Suspected Neck Fracture
1	4	4	10	4	10	8	8	8	8	6	6	8	8	10	10	8
2	10	9	10	10	10	9	9	9	9	9	8	8	9	9	9	9
3	10	10	10	10	10	9	9	8	9	8	8	10	9	9	9	8
4	7	8	9	8	9	7	8	7	8	8	6	9	8	8	7	7
5	7	8	10	10	10	10	9	9	10	7.5	7	8	10	9	9	10
6	7	6	10	10	9	6	6	5	3	8	5	7	8	7	4	4
7	10	10	10	10	10	10	8	10	8	8	8	10	8	8	8	8
8	6	6	10	7	10	8	8	7	7	7	6	7	7	7	7	7
Mean	7.6	7.6	9.9	8.6	9.8	8.4	8.1	7.9	7.8	7.7	6.8	8.4	8.4	8.4	7.9	7.6
Maximum	10	10	10	10	10	10	9	10	10	9	8	10	10	10	10	10
Minimum	4	4	9	4	9	6	6	5	3	6	5	7	7	7	4	4

Self-Perceived Competence

Question	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16
Respondent Number	Muscle Strain	Joint Sprain	Simple Cut	Bruising	Minor Bleeding	Major Bleeding	Fractured Bone not Pierced Skin	Fractured Bone has Pierced Skin	Epileptic Fit	Asthma Attack	Diabetic Attack	Conscious Concussed Player	Unconscious Player	Unconscious Player Stopped Breathing	Unconscious Player no Pulse	Suspected Neck Fracture
1	4	4	10	4	10	8	8	8	8	6	6	8	8	10	10	8
2	9.5	8.5	9	9.5	10	9.5	9	9	8	8	7	9	9	9	9	9
3	10	10	10	10	10	10	9	8	9	8	8	10	9	9	9	8
4	8	8	9	9	9	8	8	7	8	7	6	8	8	8	8	8
5	7	8	10	10	10	10	9	9	10	7.5	7	8	10	9	9	10
6	9	7	10	10	9	7	7	5	3	8	6	7	6	7	4	4
7	10	10	10	10	10	10	9	10	9	9	9	10	9	9	9	9
8	6	6	10	7	10	8	8	7	7	7	6	7	7	7	7	7
Mean	7.9	7.7	9.8	8.7	9.8	8.8	8.4	7.9	7.8	7.6	6.9	8.4	8.3	8.5	8.1	7.9
Maximum	10	10	10	10	10	10	9	10	10	9	9	10	10	10	10	10
Minimum	4	4	9	4	9	7	7	5	3	6	6	7	6	7	4	4