ORIGINAL RESEARCH PAPER

Physical Education

A STUDY ON FIRST AID KNOWLEDGE AND SKILLS OF PONDICHERRY UNIVERSITY FOOT BALL TEAM ON COMMON INJURIES

KEY WORDS: First Aid, Knowledge, Skill, Foot Ball, Common Injury

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ABSTRACT

The purpose of the study was to find out the first aid knowledge and skills of Pondicherry University football team on common injuries. To achieve this, 18 football players, 6 coaches and 3 other participants were selected as subjects. The ages of the participants in this study, ranged from nineteen to thirty years plus of age. The first age group of 19-24 years old comprised of 14 participants, representing 52 percent of the total. The second age group 25-29 years was represented by 10 participants which is 37 percent of the total. The final age group 30-35 plus years consisted of three participants, accounting to 11 percent. A descriptive quantitative research approach chosen to conduct the study and a closed ended questionnaire used to collect the data. The choice of closed ended questionnaire was because, the participants in this study have simply to mark the right choice or choices from the multiple choices given that help them to jog their memory and provide a more realistic response to the common injury. The process of data analysis was through the use of simple arithmetic. The values of the results were calculated to get average percentages. Here, a total number of correct and wrong choices are calculated against the total number of participants whom responded to the questions to get the average number and percentage for each and every common injury in this study. The results of the study indicates out of the twenty seven responses 14 had prior knowledge in first aid which represents about half of the team, while 13 did not have any prior knowledge. Players who possessed prior first aid training were 7; coaches were 4, while others were 3. Nearly 74% of participants had sustained prior injuries in football, as compared to 7 who represent 26 percent that had not.

INTRODUCTION

The overall injury rate in NCAA football is 8.1 injuries per 1,000 athlete exposures (games and practices combined). There were more than 41,000 injuries and 25 million athlete exposures from 2004 to 2009. Football players are nearly seven times more likely to be injured during a game than in practice. Ligament sprains are the most common injury reported, accounting for more than 30 percent of all injuries, with the lateral ligaments of the ankle and medial collateral ligaments of the knee most commonly affected. Concussions make up 7.4 percent of all injuries in college football players. The preseason has the highest injury rate (9.7 per 1,000 athlete exposures) compared with in-season (7.5) and the postseason (4.2). The greatest incidence for adverse events such as fatalities, heat illness and collapse is more often during transitions such as the first and second day of preseason and after a break period from practice. During this five-year time period, there were no fatalities from direct catastrophic injuries in NCAA football, but there were 23 non-fatal direct catastrophic injuries. There were 11 fatalities from indirect catastrophic injuries, however. Indirect fatalities, as defined by the National Center for Catastrophic Sports Injury Research, are those fatalities that are caused by systemic failure as a result of exertion while participating in a football activity or by a complication that was secondary to a nonfatal injury. Heart issues, heat illness, complications from sickle cell trait, and respiratory conditions rank among the top causes of death during physical exertion. Catastrophic spinal cord injuries are significant life-changing events and can sometimes result in death. From 2004 to 2009, there were three reported catastrophic spinal cord injuries in college football. The incidence of sudden cardiac death in the NCAA is roughly 1 in every 40,000 student-athletes per year. Although cardiac conditions are the leading medical cause of sudden death in all sports, complications due to sickle cell trait while participating in conditioning are the leading cause in football players. Heat illness is preventable and everyone, including administrators, coaches, athletes and health care professionals, should work diligently to prevent it. Nationwide, across all sport levels, there have been more deaths from heat stroke in the 2005-2009 time block than any other five-year block during the past 35 years. Football is without question the world's most popular sport with an estimated 265 million registered players. Much of the current growth is due to the rapid increase in the number of females playing as well as the growth in countries where football does not have a strong historical record such as the United States, China, and India. Sport carries with it the risk of injury and each sport has its own particular injury profile. Any increase in participation within a sport will be accompanied by an increase in the number of injuries. Any increase in injuries in a sport with the participation numbers like football will likely have a public health impact in terms of the burden on health care systems as well as time lost to education and productivity. One pillar of the professional sports medicine community is injury prevention and while the medical community has been a visible presence in sport, the emphasis on prevention historically has been based on logic and expert opinion. For example, static stretching has long been considered as a practice that prevents muscle strain injury, but has come under increased scrutiny recently. Thus, both the medical and sporting communities are looking less at what practices would seem to make sense and more at programs that are supported by evidence based on data derived from clinical trials. The model for sports injury prevention research follows a conceptual process described by Van Mechelen. This 4–step model begins by determining the incidence of injury, determining the mechanism of each injury to be prevented, designing and implementing prevention interventions, and finally reassessing the injury incidence to see if the intervention was successful or not. In practice, a large group of athletes or teams are randomly assigned to either a control group or an intervention group. Injuries for a full season are recorded and the exposure-related injury rates between the two groups are compared. In the 1980's, Ekstrand and colleagues published the results of the first injury prevention trials in professional football. It was not until the mid to late 1990's that prevention trials were conducted on a wider scale. These trials were of two types: trials to prevent a specific injury or those designed to prevent a wider spectrum of injuries. As ankle sprain is one of the most common injuries in sport, a number of studies have been published whose goal was to reduce the incidence of ankle sprain. The goal of other projects was to prevent other common injuries such as tendon injury, hamstring strains, groin strains, and knee sprains – the anterior curiae ligament in particular. Other studies were designed to decrease a broad range of common injuries. Many of these more broad-based projects replaced a traditional warm-up with a generalized warm-up that consisted of activities to reduce common injuries in that particular sport. In football, as with most team sports, the most common injuries are ligament sprains (of the ankle and knee) and muscle strains (of the hamstring and groin). After considering the mechanisms of injury and the activities shown to be successful in preventing specific injuries, researchers design generalized warm-up programs based on the best available evidence. The results of these generalized warm-up programs will be presented here.

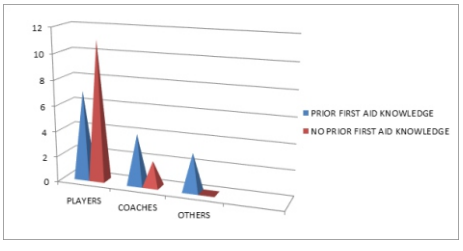
METHODS :

The purpose of the study was to find out the first aid knowledge and skills of Pondicherry University football team on common injuries. The results gained will be a useful tool for the development for the Pondicherry University football team in raising the level of first aid knowledge and the skills in the future. To achieve this, 18 football players, 6 coaches and 3 other participants were selected as subjects. The ages of the participants in this study, ranged from nineteen to thirty years plus of age. The first age group of 19-24 years old comprised of 14 participants, representing 52 percent of the total. The second age group 25-29 years was represented by 10 participants which is 37 percent of the total. The final age group 30-35 plus years consisted of three participants, accounting to 11 percent. A descriptive quantitative research approach chosen to conduct the study and a closed ended questionnaire used to collect the data. The choice of closed ended questionnaire was because, the participants in this study have simply to mark the right choice or choices from the multiple choices given that help them to jog their memory and provide a more realistic response to the common injury. The process of data analysis was through the use of simple arithmetic. The values of the results were calculated to get average percentages. Here, a total number of correct and wrong choices are calculated against the total number of participants whom responded to the questions to get the average number and percentage for each and every common injury in this study.

RESULTS:

The purpose of the study was to find out the first aid knowledge and skills of Pondicherry University football team on common injuries. A total of 30 questionnaires were sent to team members through e-mail after gaining permission from the team president. The questionnaire was accompanied by a letter of confidentiality, stating that the data obtained was not to be forwarded to a third party and was anonymous. In this study, a total of twenty- seven participants responded to the questionnaires, amounting to a response rate of 90 percent. The respondents comprised of Players 67 percent (n=18), coaches 22 percent (n=6) and other participants comprised 11 percent (n=3). This is a significant number while addressing the validity of the study, considering the fact that only three questionnaires were not returned. Furthermore, out of the twenty seven responses, 14 had prior knowledge in First- aid which represents about half of the team while 13 did not have any prior knowledge. Players who possessed prior first-aid training were 7; coaches were 4, while others were 3 as shown in figure 4 below. Nearly three quarters (74%) of participants had sustained prior injuries in football, as compared to 7 who represent 26 percent that had not.

FIGURE 1



The ages of the participants in this study, ranged from fifteen to thirty years plus of age. The first age group of 15-19 years old comprised of 15 participants, representing 52 percent of the total. The second age group (20-25 years) was represented by 10 participants which is 37 percent of the total. The final age group (26-30 + years) consisted of three participants, accounting to 11 percent.

STATISTICAL ANALYSIS

A total number of 18 questions regarding first aid procedures on various injuries were attempted. An average percentage of correct choice was 62 %. This can be attributed to the fact that half of the participants had previous knowledge on first aid. First and foremost, Sixty-eight percent of the participants (n=18) got the correct answers to the two questions dealing with concussions. The participants knew the various signs and symptoms of a player who is experiencing concussion and how to manage it. There were three questions on the management of fractures, which dealt on how to treat open fractures, and the general management of fractures. Sixty three percent (n=17) responded correctly. However, two thirds of these respondents failed

to get the right choice of the first line of treatment to open fractures. Secondly, there were four questions dealing with muscular injuries and their treatment, covering areas on muscle tears, sprains and cryotherapy. Out of these, 79 percent (n=21) of the participants had the knowledge on how to manage these injuries. This was the common injury; where the participants had vast knowledge. This can attributed to their previous experiences. Participants were asked about the management of heat stroke; with two questions on the symptoms and first aid. Seventy two percent (n=20) answered correctly. Surprisingly, the participants knew the symptoms of a player experiencing heat stroke, but more than half of the respondents, did not know the first procedure to undertake when a player experiences a heat stroke. Thirdly, three questions sought to test the knowledge of the participants on typical procedures and treatment of cuts and bruises, Sixty two percent (n=17) answered correctly. Seventy percent (n=19), of the respondents, knew how to handle a player with a suspected cervical spine injury. While, only 57 percent (n=15) got the correct choices on how to handle a player experiencing a seizures. This can be translated to their lack of knowledge and experience to carry out initial steps when a player undergoes a seizure. Last but not least, a total of five questions were asked in regard to cardiopulmonary resuscitation (CPR) and management of an unresponsive player. The average percentage of correct answers was 73 percent (n=20). This is also due to the fact that most of the respondents had previous first aid training. However, three quarters of the respondents failed to know the ratio of chest compression to ventilation. The table below shows a summary of the average percentages of various common injuries with correct choices.

Table No.1:
Common Injuries in average percentages of correct choices

Common Injury	Average % of Correct Choices
Muscular Injuries	79%
Heat Stroke	72%
Cervical Injuries	70%
Concussions	68%
Fractures	63%
Cuts and Bruises	62%
Seizures	57%

DISCUSSION AND FINDINGS :

The purpose of the study was to find out the first aid knowledge and skills of Pondicherry University football team on common injuries. Twenty seven participants took part in this study, all showed exceptional knowledge on basic skills on regarding most common injuries in football and their treatment. Half of these participants had prior first-aid training. Players accounted for two thirds of the respondents in the study, but only less than a half of them, had previous first aid training. This can be attributed to various sources of the education and training, such as the compulsory physical training and in high school. However, most of the first aid skills gained here may not be sufficient enough to handle sports injuries. The results of this study further indicate that, a high percentage of the participants had knowledge of first aid procedures in most common injury scenarios such as muscular injuries, heat stroke, cervical injury and concussions. While on the other hand, a few numbers of the participants had no knowledge in managing fractures and specifically open fractures. This therefore points out to the fact that the team lacked the ability to handle appropriately a player who has a bleeding wound. This is very worrying trend, given the fact that this fractures type of fractures are mostly common type of injury. Like wise, most respondents did not know how to handle a player undergoing

seizure. In this case they did not know the initial steps to carryout incase a player experiences seizures. The initial step always involves the removal of any object that might harm the victim, and then letting the fits continue, while maintaining airways open. Hence, it is essential to train Pondicherry team on first aids skills and the symptoms and signs of seizures, in order to empower them to carry out initial care effectively. According to Rehberg, it is an essential component of a first aid provider to be able to recognize an injury and be able to apply necessary skills urgently needed. In this study, a number of participants were not able to recognize initial procedures or steps to take while handling common injuries. For example, two thirds of the respondents did not know how to handle a player who gets "the wind knocked out of him" and struggles to breath during a game. This is a scenario where the diaphragm is knocked into spasm and a player is not able to breathe. Thus, un- informed decision or action by the first aid provider could prove harmful. (Rehberg, 2007) Moreover, first aid skills are necessary while handling cervical injuries cases, which could be life threatening. American football has been proven to be the sport with higher number of neck injuries that can result into cervical injuries. In this study, seventy percent of the participants knew the steps to undertake for a suspected spine injury and this reducing possible fatalities in the team, due to the fact that cervical injuries is a major cause of fatalities. (Delaney and Kashmir, 2004) Furthermore, the study suggest that most of the participants knew what to do in cases of muscular injuries, for instance, dealing with a player who has muscle tear which by applying the RICE (Rest, Ice, Compress, Elevate) treatment. This is encouraging fact since this are injuries that occur most of the time and appropriate initial interventions, contributes to quick healing and a player being able to return into play. Generally, it is easy to suggest from this study, that a process should be designed to update the knowledge and skills of Pondicherry team on first aid procedures of common injuries in football. This should be an all inclusive process for both who posses previous training and those who have no training. Naturally, this will in turn empower them to be able to recognize injuries or symptoms of injuries and be able to effectively apply appropriate immediate first aid skills and interventions. It is however important to note that, the results clearly demonstrate that knowledge of first aid exists amongst the players and coaches on various first aid skills of common injuries, but as first aid is a very dynamic and constantly expanding area of expertise and one can never know enough. Injuries are an everyday occurrence in the sporting world, and the financial costs they bring to society are profound. By endowing the players and coaches the mindset of the importance of maintaining first aid skills, we can help minimize the incidence and help in preventing injuries from happening. Though this study did not address the players and coaches directly, it gives fuel for a further study to be conducted in educating and training the teams to successfully manage injury situations in a proper manner. In summary, the results of this study shows that the Pondicherry University Foot Ball team, have the basic first aid knowledge and skills in handling most of the common injuries, with the exception of a few. Further training is recommended, in order to effectively prevent, evaluate and care for the injured players during the practice sessions. The results from this study will be given to the Pondicherry team through electronic link to enable them to identify the problems and strategize for a safer training environment. Despite an excellent response rate in this study, evidence from data gathered suggests that there is risk in using non-qualified personal to provide emergency, whom are in this case members of the team. Thus, making available qualified players to handle the injuries should be a priority. The evidence from this study demonstrates that, there is a problem of unqualified players being responsible for providing first aid for the team. Thus, there should be a moral and legal obligation on all teams to have a qualified first aider present at all games and training sessions. The study focused majorly on common injuries and not all forms of injuries sustainable in football and therefore, other injuries present should be further studied. Other avenues of further study, which were not explored by this study includes: the use of sport specific injury scenarios and other research methodologies which may ignite a different response from coaches, players and others in terms of their knowledge on injuries. In addition, the development of sports injury prevention and care programs and the effectiveness of such a program amongst the youth football players in Finland could also be studied. However, it is categorical to note that, this study only examined the level of knowledge and cannot be generalized to address the nationwide situation in various youth teams in football.

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