A Study of Injuries Among Indian Professional Football Players

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Abstract

Football is a high intensity sport characterized by continuous changes of duration and high load unipodal actions. Participation in football imposes high demands on neuromuscular control, agility, and eccentric/concentric strength. Most football injuries are related to the lower extremities, in which muscle injuries are among the major problems.1,2 Significant reductions of lower extremity injury risk have been reported to be achieved by intervention programs focusing on intrinsic risk factors.3,4 In addition, plyometric training, agility drills and other components of preventive programs were found to be effective in lowering the incidence of injury in football.5 An exercise programme called 'The developed with the support of the World Football Association FIFA, also focuses on injury prevention.6 There is a group of exercises designed to help the un-injured soccer player prevent the common injuries which includes dynamic warm-up and key stretching and strengthening exercises that addresses the needs of a soccer player. Warming up and cooling down are strongly favored injury prevention strategies. The purpose of a dynamic warm-up is to increase muscle temperature in order to enhance the effectiveness of muscle contraction, increase oxygen to the muscles, increase tissue elasticity, and create movement patterns for game situation. In the light of the above, the investigators become interested in determining the possible risk factors involved in football injuries, mechanism of injuries severity of injuries and psychological factors as a predictors of injuries in Indian football. The football injuries can be define as any physical complaint by the footballers during match playing and training or practice period it may be contact or non-contact. Contact may be contact with players to players, players to referee and players to goal post however may be running, jumping and turning.

Keywords: *Football Injury Prevention Perception Training*

1. INTRODUCTION

The game of Football is one of the popular sports in the India as well as world. Albright JP, McCauley E, Martin RK,(1985).Football is a most hazardous of organized team sports and injury is a frequent event in football. Football is high risk sports and injuries are common prom for football players and Lindquist. It is an enjoyable and social sport than can be played from childhood to old age, either at a recreational level or as competitive sports. In several cases, football related injuries may occur due to over physical work that participating in a particular activity most of the sport injuries occur while participating in games and sports, tournaments, training period, or fitness activities. Football, soccer, basketball, cricket, volleyball, skiing, tennis as well as contact sports are high risk injuries. Low level of physical fitness Accidents, Bad sports training technique or foul play can cause injuries most often.

It is well recognized that warming up and stretching is not practiced properly, injuries may sustained and lead to a rehabilitation and recovery process. Injuries sustained in all levels of football, either at senior level or junior level. Today sport is considered as the most important factor for around development. Sports are also linked with the image of country and national pride. Everybody accepts the importance of sports as a base for health of body and mind. It is very important to exercise the mind and body together.

Games are the necessity of spiritual and moral renovation of the society. Better world is a place and atmosphere of peace for all people. Therefore, all organization at national and international level are working hand to hand to make this world fit for living, with amity and tranquility and use sports as one of the medium for spreading this gospel.

Present era is the era of competition in every field to large extent in games and sports. While talking about those games which are played for long times lime Hockey, Football, Volleyball etc. require efficient skill as well as speed, strength, endurance and stamina till end of the game. It is often seen that lack of these capacities in player's result in losing the game. Except these capacities players have to possess efficient techniques and tactics. Physical fitness is must for any good performance in games and sports. Different sports require different types of fitness emplacing on a particular fitness factor. However, general level of physical fitness is necessary for every sportsman.

One recent study has been conducted on Football Injuries during Asian Tournaments regarding incidences and patterns of injuries of Asian football players. In all 411 Asian football players of junior and senior were observed during 50 international matches. In one study, team doctors determined the occurrence of injuries and found out the Anatomical site of injuries, type of injuries, period, and causes of the injuries.

While considering Retrospective study of the occurrence of injuries during 2010- 2011in Spanish football tournament and found that 134,5570 occurred by the football players. In this study 67% players time lost due to their injuries while the 32.7% football players were required treatment from the doctor due to their injuries. Midfielder, defenders and offenders were more suffer from due to injuries. The knee (29.9%) and ankle (12.4%) was the common anatomical site of injuries, sprains and ruptures are also more frequent injuries. Football playing largely involves starting, running, slopping, twisting, jumping, kicking, and turning movements that lead to greater risk of injury. Football has received a little interest in the sphere of sports medicine. Football is a high risk sport sports by overuse injuries are prevalent in football.

In football only a few studies have been made in the literature regarding incidents of injury and pattern, possible risk factors and injury prevention. In football lower extremities injuries are the most common occurrences of injury as compare than upper extremities. Football is sports that make heavy demands on the player..

Head injuries can be serious or fatal injuries in football during a game, Three types of potentially fatal intracranial bleeding conditions to which the examining physician must be alert in every instance in which a player receives a head injury. The most rapidly progressive, yet correctable, one is caused by a tear in one of the arteries in the covering of the brain. This usually takes the form of an extramural hematoma.

The Second type of bleeding occurs under the drug. It is either associated with a tear of the vessels bridging from the surface of the brain to the sinuses or occasionally is caused by oozing from contused brain surface. The tear in the vessels is usually due to a shearing of these bridging vessels and a contusion to the impact of the surface of the brain against the inner surface of the skull during a deceleration injury.

2. REVIEW OF LITERATURE

Gall et.al.(2006) Researched for injuries to footballers under 14 years of age. Data from the French National Soccer Institute were obtained by the investigator. In ten training sessions or games, the analysis is performed by footballers with respect to their biological maturity. In the research 233 players have been examined to determine in the biological maturity of the skeletal age the seriousness occurrence of injuries. The investigator found that the frequency of injuries between mature and young footballers was negligible. The findings indicate that more injuries than their counterparts were observed for mature classes of footballers. Many injuries occurred in the regular football community. Early matures occurred in the area of the groyne and the incidence of injuries more often.

Sinku (2013) studied on causes among three groups of competitive footballers. Accordingly three groups of footballers were targeted; Junior, Young and senior groups football players aged between 14 to 30 years. The investigator personally contacted the players and the purpose of the study was explained to them. Further instructions were given by the investigator to the players for the completion of questionnaire. The information of injuries collected from 685 football players of three groups. Means, Standard deviations, one way analysis of variance and post hoc test were utilized to compare and identify the incidence of injuries among three groups of football players.

Sinku (2013) was to identify the incidence of injuries among competitive footballers. The investigator has tried to identify or describe soccer classes based on the soccer age. Three soccer categories were accordingly targeted;

footballers from 14 to 30 years old, all junior, young and senior. Individually, 685 soccer players obtained information about injuries through a questionnaire. The investigator approached the players directly and they were informed about the intent of the analysis. The investigator gave the players extra instructions to complete the questionnaire. A questionnaire was created for elite Gaelic footballers by Cromwell & Gromely (2007) and updated by the investigator. The findings showed that, because of injury, 7 2,10% of the juniors, 27,72% of the youngsters and 15,85% of the older soccer bands were absent. In the meantime 8,18% of juniors, 37,91% of young people and 39,28% of senior soccer classes were affected by their wounds. Doctor handles football players to the highest level of injuries.

Sinku (2012) was to identify the injuries sustained during match playing and training period of the football Players .The investigator personally contacted the players and the purpose of the study was explained to them. Further instructions were given by the investigator to the players for the completion of questionnaire. Football players reported injuries during first halves, 25.00% injuries reported during second halves, 47.75% injuries reported during the training period and 06.66% injuries occurred during warm period. The high incidence of injuries sustained during training and first halves among football players.

Singh (2013) was to compare the incidence of injuries among three aged group of football players the investigator has made an attempt to classify or define the groups of footballers based on the aged footballers. Accordingly three groups of footballers were targeted; Junior, Young and senior groups football players aged between 14 to 30 years. Means, Standard deviations, one way analysis of variance were utilized to compare the incidence of injuries among three groups of football players. The result reveals that insignificant difference of incidence of injuries was found between three aged group football players.

Kawrey (2012) compared of personality traits and anxiety behavior and injuries pattern of student athletes and non-student athletes with respect to neuroticism, psychoticism, extraversion and lie scale and. A total of 50 college athletes have been chosen for this report, as well as 50 student athletes. They were between 21 and 30 years old. Students participating in the minimum cross-country tournament took account of student athletes and did not take part in athletics at the minimum inter-country tournament as they would do for non-student athletes. In the current experiment, the Eysenck inventory of personalities (1985) was used and the Anxiety Test for Sports (Marten, 1977). It consists of 90 issues from four variables of personality and 15 for fear. Data were collected individually from 50 non-student sportsmen and 50 student athletes via an Eysenck personality stock by contacting various Aurangabad District. E. P.I. colleges. The Aurangabad students were distributed to junior colleagues and the researchers were directed to the senior collegiate volleyball players before completing the inventory. The data mean results were evaluated by standard deviation and t-ratio to include personality traits in terms of psychotics, neurosis and extraversion and the level of lies and anxiety among student athletes and non-student sportsmen. The significant level was identified at a confidence level of 0.05. In terms of student athletes and non-student athletes' psychoticism they achieved the mean values of 11.12 and 11 and given Table 2.2, show that in (t= 1.27) student athletes and non-student athletes there is no difference in meaning. For neurotics of student and non-student athletes, the mean values of 9.88 and 10 are shown in table 2.2. The difference in significance (t=0.36) of both student and non-student athletes was not established. For extra-versions of student athletes and non-student athletes, the mean values of 10.96 and 11. 68 have been obtained, respectively, and given in Table 2.3 it is obvious that there was no substantial difference (t = 1.94) in the significance of student athletes and non-student athletes. As regards the neuroticism of the student athletes and non-student women, a mean 12.19 and 11.24 respectively have been achieved, as shown in table 2.5. The disparity in the sense of female student athletes and non-student female athletes (t= 1.98) has been discovered. As regards psychotic research, the average values of 12.57 and 11.12 respectively for student athletes and women who were not student athletes, as shown in Table 2.6, were found in (t=1.33) women's athletes and women's non-student athletes. For student athletes and non-student athletes, the mean values 11.62 and 9.52 were obtained, respectively, and table 2.7 showed that (t=1.76) female student athletes and female non-student athletes considered a difference in importance. For the lie scale of female students and female, non-student athletes, the mean values of 11.98 or 9.52 were obtained, respectively, and the significance of female students athletes (t=2.00 P<0.5) and non-student female athletes, with female student athletes having a greater liar propensity than non-student athletes, was shown in table 2,8. The average values of 14.29 and 11.2 respectively in relation to the anxiety of student and professional athletes, as given in table 2.9, show that the difference in significance was observed in (t= 1.85) professional and non-student athletes. As far as female student athletes and female non-student athlets are concerned, the mean values given in table 2.10, 17.08 and 19.61 respectively, indicate that the importance of this

gap was discerned by female non student athletes and female non-student athletes in ($t=1.18$ $P < 0.5$). Students Athletes reported potential anxiety injuries.

Mukherjee (2012) had studied on a injuries in hockey in junior world cup hockey in the year 2009. The head and face injury were identifying through observation. In all twenty for head injuries were recorded by the investigator. The frequency rate of the injuries was recorded 16 per 1000 match hours and 19 percent per players. In this study 92 percentages injures occurred due to collision. And more injuries occurred during second half in the matches.

Dvorak (2011) conducted the study regarding injuries with respect to incidence and characteristics during 2010 FIFA world cup. In this study all 32 participated team reported injuries before chief physician. Total 229 injuries reported by the football players. 82 injuries recorded in this period while 58 injuries recorded during training. 65 percentage injuries were recorded in matches and 40 percent injuries reported in training. Thaigh and anke were more injured site of the injuries.

Elena (2013) conducted in retrospective studies on injuries in judo. The aim of the study was to identify the incidence of injuries, risk factors of injuries, types, location and causes of injuries in two Olympic Games viz. 2008 and 2012. Average injury risk 11%0 to 12.00% was recorded. Soft tissue injuries like Sprains, strains and contusions more reported of injuries. Knee, shoulder and fingers, were the most Anatomical site of injuries were recorded, whereas flown was the most common injury mechanism. The most common injuries in judo players were contusions or abrasions, fractures, sprains or strains. Psychological factors may also attribute to the injuries.

Pagare (2008) surveyed the related injuries in inter-varsity Badminton players. For the present analysis, certain wounds (players) have been chosen as focus. They were between 17 and 25 years old. Just 48 players were included in the sample after screening 73 questionnaires. Cromwell F.J.'s questions. Questionnaires Walsh Gromley was developed by the research scientist and used for this analysis for Elite Gaelic Footballers (2000). In the intervarsity of Badminton players the standard deviation and percentage of injuries were used to show the type, position and causes of injury. Study showed that most of the injuries in the lower limb were knee (26.78 percent) and ankle (21.42 percent) (64.26 percent), the most frequently injured anatomical site. The upper limb wounds (35.71%) were comparatively small and shoulder injury (19.64%) was predominant. Ligament sprains are the most common among Badminton players with respect to the nature of injuries. Highest accidents during competition occurred and occurred between December and January. The most common care provider for Badminton players is the treatment of accidents, physicians and physiotherapists. In order to assess the availability for these professional players, specialist assistance in the field of injury management should also be checked by doctor and physiotherapist. The findings of this survey provide a forum for further study.

Sinku and Jadhav (2009) Studied the incidence of injuries among participating soccer players and targeted footballers of 14 to 30 years, regional , national and state categories. A total of 300 players have been selected; of each group's 100 soccer players. Out of a total of 300 questionnaires 100 have been distributed globally, 100 nationally and 100 state football classes. 100 have been distributed. Over the course of the study, 318 injuries were reported from 300 hundred footballers, among 84 footballers, 125 were found; 108 were reported in national football groups and 85 injuries were recorded in state soccer groups out of 78 soccer players, among 82 football groups. National soccer groups also play more in a year than international and national soccer groups. Most Maharashtra (93) players in all classes. All classes. 50 national 42 international football groups and 43 national football groups playing more than two house-by-week activities outside football. Basketball's most favourite international football party. In Cricket, however, national and state soccer classes are the most favoured. There is no statistically meaningful difference for two hours a week when engaging in sports other than soccer. To identify statistically significant differences in the occurrence of ligament injuries in three competition soccer categories, the statistically significant difference in injuries among international footballers and national groups was identified. Popular soccer classes reported a greater frequency of ligament injuries. However, three different classes of footballers have not had major statistical differences in the frequency of injury with regard to normal conditions such as fractures and tendons.

3. PROTECTIVE DEVICE

Use of protective equipment has been recognized as a common injury prevention strategy. Shin-pad is used to protect the lower leg from impact injuries. According to Lees and Lake, shin-pad offer protection from injuries ranging from the severe (such as direct contact between the opponent boot and the legs as in a poorly executed tackle) to the minor (such as bruises and scratches from glancing blows). However, in present study it was found that players were notfully implementing the use of shin pads especially during training. It was shown that 39% of the players always wore shin pads during training whereas all the players wore shin pads during matches. Ironically, the results of this study had shown that the trend of injury during training and matches were consistent. In the previous study by Hawkin and Fuller, the findings were inconsistent with the findings of this study including the area where, in the previous study it was reported that more than 80% players were not encouraged by their coaching staff to wear shin pads during training.

Nutrition

Proper nutrition is another measure to help prevent injury. In terms of the carbohydrate intake by the footballer, it is often inadequate. If the muscle stores of carbohydrate are not adequately replenished, subsequent performance will be impaired. However, most players reported in this study are lacking the awareness about carbohydrate intake prior to and after training and matches. In the previous study by Hawkin and Fuller, most players (more than 80%) always consumed carbohydrate, and they were given some advice before and after matches and training. In the present study, most players reported that they were given very little advice on the nutrition intake during the pre and post training and match period. This shows that the professional Indian footballers are very much lacking in their energy store for the purpose of delaying fatigue and for the recovery aid.

Warm ups and cool downs

Warm up prepares the body physiologically for physical performance, and it is also believed that it will lessen possibilities of injury. The main purposes of warming up are to raise both the general and the deep muscle temperatures and to stretch connective tissue to permit greater flexibility. This reduces the possibility of muscle tear and ligament sprains and helps to prevent muscle soreness. Cooling down permits the return both the circulation and various body functions to pre exercise level, and because blood and muscle lactic acid level decreases more rapidly during active recovery than during passive recovery, thus it aids the recovery period. In this study, it was found that between 75%- 90% of the players always have a warm up and cool down, as compared to the study by Hawkin and Fuller, in which none of the players always perform cool down, when it should be 100% of them performing the technique to gain its maximum benefits. Though more than half of the respondents strongly agreed with the benefits of warm up and cool down in reducing injury. Among their reason for not performing these techniques were no time and feeling too tired post training and matches.

Strength training

In the area of strength training, in this study it was found that the Indian footballers were lacking in their awareness towards strength training. As high as 51% agreed that strong muscles are important in the protection against injury. Also, most literature recommended that 3 times per week is the best routine for elite footballers, because overtraining might lead to burn out overuse syndromes. Overuse injuries are caused by continued or repetitive action or as a result of exposure of a structure to high loads.

Injuries occurrence in the past 12 months

It has been observed that more than 50% of the players have suffered from at least 1 injury during both training as well as matches. Around 6–8% of the players have suffered from more than 3 injuries during training and matches. It has also been observed that the players who played in second and third division are more prone to injuries as compared to the players playing in first division. On assessing their views about injury prevention awareness, it was found that they had a lower awareness about the injury prevention strategies and also the application of the injury prevention strategies was less as compared to the players playing in first division. The most common reasons were lack of carbohydrate and energy drinks being provided during training and matches, lack of encouragement to wear

shin pads during training, less number of strength and agility training sessions per week and inconsistent warm-up and cool-down exercise routine. The reasons for not undertaking strength and flexibility training exercises and warm-up and cool-down prior to and after the training and matches were that the players were too tired after training, they were not told to do so and also lack of time to do the exercises.

4. CONCLUSION

In football, muscle pull is an acute tear of skeletal muscle fiber and is characterized by sudden localized and persistent pain in a muscle, e.g. horse rider on inner thigh. Muscle pull resulting from lack of proper warm up before physical activity, poor flexibility, over training, lack of co-ordination of activity. Poor training and imbalance in muscular strength between agonistic and antagonistic muscle particularly two joint it also occurs most frequently under competitive and training conditions. Blisters injuries represent accumulation of fluid within intradermal slits that from primarily from horizontal shearing forces acting upon the skin. This injury is very common but not dangerous. Based on these findings we concluded that the awareness among the first division professional Indian football players was high. It was also found that second and third division players had a lower awareness about the injury prevention strategies and also the application of the injury prevention strategies was less as compared to the players playing in first division. The results of this study also indicate the need for coaches and players playing in second and third division for better education regarding injury prevention strategies especially usage of protective equipment, proper warm up and cool down, strength training and should include such interventions as a part of their regular training programme for optimum performance.

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