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LIGAMENT INJURIES : COMPARISON AMONG FOOTBALL PLAYERS THROUGH ANOVA

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Abstract: The primary aim of the present study was to compare the occurrences of Ligament injuries among three level of football player. The investigator has made an attempt to classify or define the groups of Football players based on the class of the games of the Football players. Accordingly three groups of Football players were targeted; International, National and State Football players aged between 14 to 30 years, information of occurrences of injuries was collected, Individually through a questionnaire from Football players. The International Football players was found to have got more suffered from Ligament injuries as compared to National and state level football Players.

Key Words : Injuries , ANOVA, Football, Ligament

INTRODUCTION

Ligaments are like cords made of connective tissue, elastic fibers that are somewhat stretchy, and collagen, a protein that binds tissues in animals. A ligament is a fibrous connective tissue that attaches bone to bone, and usually serves to hold structures together and keep them stable(https://medlineplus.gov/ency/imagepages/19089.htm). Ligaments are bands of strong, flexible tissue that connect bones together throughout the body. They allow movement between bones, which allows you to do things like flex your foot or move your fingers (https://www.beaumont.org/conditions/ligament-tears). When ligaments are stretched or strained beyond normal capacity, they can tear. Ligaments are quite strong but can be stretched or even torn. This results in various grades, or levels, of sprain injury. A ligament tear (Injuries) usually occurs due to extreme force to a joint, such as with a fall or another high-impact event. Common ligament tears happen in the ankle, knee, wrist, thumb, neck, or back (Quinn & Cluett (2021). The anterior cruciate ligament (ACL) is one of the most common ligaments injuries (Quinn E & Cluett , 2021). Common causes of ligament tears (injuries) are twisting body parts or hard or awkward landings. Tears often happen when ligaments are stretched fully and then encounter some form of impact or trauma. Ankle sprains, a mild torn ligament in the ankle, can happen when you are walking or running, land awkwardly, and twist your ankle.

METHODS

Total 300 male competitive Football players; 100 out of International players, 100 National players and 100 State groups football players from different Clubs, Academy, State and University were selected as a subject for the present study. Inter-varsity Football players have been considered as national players. Their age ranged from 14 to 30 years.

Some questionnaires were sent to different Club, Academy, State and University who had participated in International, National, State and Inter-varsity tournament and some cases contacting footballer at the venue of State, University, and National tournament held at different places. Instructions were given to the Football players before filling these questionnaires by the researcher, football coach and football experts. For the present study, modified questionnaires prepared investigator was utilized after the test -retest reliability was found out 0.94 by the researcher. investigators only consider the numbers of injuries occurred during match playing and training period within one year The statistical computation of data of the present study is used by using SPSS package in the computer. The result computed also cross checked by using following statistical variables. Means, Standard deviations, one way analysis of variance and Scheffee post hoc test were utilized to compare and identify the occurrences of injuries among Football players.

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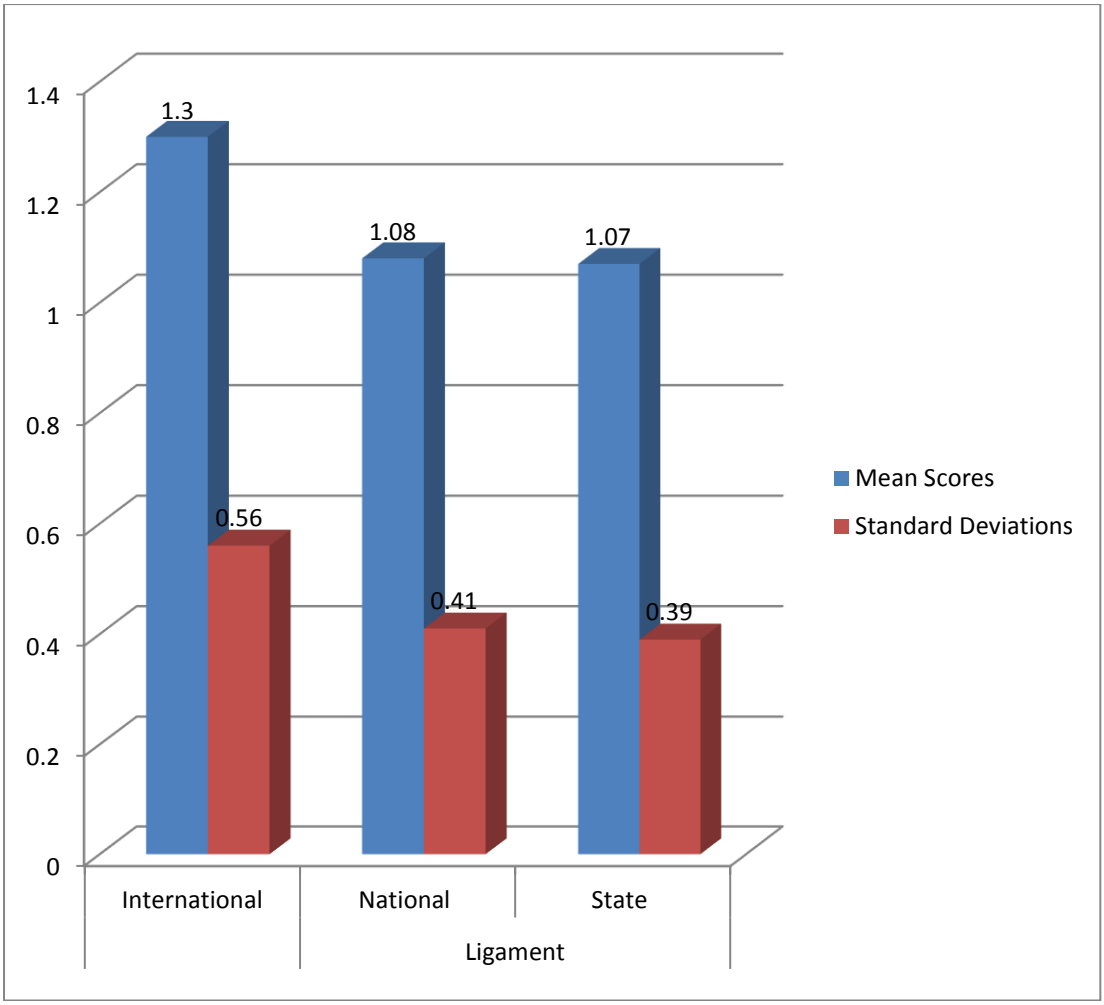
Table – 1

Mean scores and Standard Deviations of Occurrence of injuries with respect to Nature among three groups of competitive Football players.

Sr.No.	Injuries	Football players	Number (No. of Injuries)	Mean Scores	Standard Deviations
2	Ligament	International	36 (47)	1.30	.56
		National	23(25)	1.08	.41
		State	13(14)	1.07	.39

Table-1, shows that the mean scores and standard deviations of Occurrence of injuries with respect to nature among three groups of competitive Football players. The mean scores (S.D.) of muscle injuries to International groups Football players was 1.43 (.78), national groups Football players was 1.13 (.61) and state groups Football players was 1.05 (.49). The mean scores (S.Ds.) of Ligament injuries to international groups Football players was 1.30 (.56), national groups Football players was 1.08 (.41) and state groups Football players was 1.07 (.39). Mean scores (S.Ds.) of Fracture to international groups Football players was .92 (.28), national groups Football players was 1.1 (.29) and state groups Football players was 1.07 (.30). The mean scores (S.Ds.) to Tendon injuries of international groups Football players was 1.12 (.38), national groups Football players was 1.25 (.43) and state groups Football players was 1.23 (.42).

Mean scores and Standard Deviation of Occurrence of Ligament injuries have been depicted graphically through histogram in figure-1.



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In order to find out the statistically significant difference of Occurrence of injuries with respect to nature among three groups of competitive footballer; ANOVA was applied the results of which is presented in Table 2

Table – 2
Analysis of Variance of Occurrence of ligament injuries among three groups of Football players.

Sr. No.	Injuries	Source of Variance	SS	df.	MSS	F-ratios
1.	Ligament	Between groups	3.64	02	1.82	9.10 *
		Within groups	14.62	71	.20	

* Significant at .05 level
NS = Not Significant

As per Table 5.40 shows, Analysis of Variance of Occurrence of Ligament injuries among three groups of Football players. In order to find out the statistically comparison of Occurrence of injuries with respect to nature among three groups of competitive Football players. The data given in Table 2 shows that statistical significant difference was found in Ligament injuries (F=9.10, P<.05).

In order to locate the Occurrence of Ligament injuries among three groups of competitive Football players; Scheffe post hoc test was used to statistically comprise the Occurrence of Ligament injuries. Table 3 shows the possible comparison for three means

Table – 3
Scheffe post hoc statistical comparison for mean difference of Occurrence of Ligament injuries among three groups of competitive Football players.

Mean Scores				
International	National	State	Mean difference	C.D. at 5% level
1.30	1.08		.22	.29 *
1.30		1.07	.23	.24 *
	1.08	1.07	.01	.28 *s

* Significant at .05 level.

As per Table 3, shows that the scheffe post hoc statistical comparison for mean difference of ligament injuries among three groups of competitive Football players.

DISCUSSION

Ligament injuries are the most common major injury that occurs in football. Table 3, reveals statistically significant difference of Occurrence of Ligament injuries was found between international and state groups competitive Football players.

International groups Football players got having more Occurrences of ligament injuries as compared to national groups Football players. (ii) Statistically significant difference of ligament injuries was found between international and national groups Football players and (iii) statistically significant difference of ligament injuries was found between national and state groups Football players. Injuries often occur when a player plants their foot on the ground and attempt to rotate their body in relation to that planted foot, placing their weight on it.

Due to these motions, a twisting force across the knee joint that the ACL must absorb is created. In football, motions such as cutting and pivoting can put a great amount of force on the knee. As a result the positioning of the ACL makes it responsible for maintaining the integrity of the knee against that force. Injuries often occur when a player plants their foot on the ground and attempt to rotate their body in relation to that planted foot, placing their weight on it. Due to these motions, a twisting force across the knee joint that the ACL must absorb is created. When the ACL cannot cope with this force, it ruptures. (Marx ,2016)

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