

## **Kabaddi Players' Injuries with Special Reference to West Bengal, India: An Analytical Study**

**Debabrata Biswas <sup>1</sup>, Dr. Minakshi Pathak <sup>2</sup>**

<sup>1</sup>Research Scholar, Department of Physical Education, Sri Satya Sai University of Technology & Medical Sciences, Sehore, M.P.

<sup>2</sup>Research Guide, Department of Physical Education, Sri Satya Sai University of Technology & Medical Sciences, Sehore, M.P.

### **ABSTRACT:**

The main aim of the study was to analysis of Kabaddi players injuries with special reference to West Bengal. The data for present study was collected from players of Kabaddi through the self-developed questionnaire of sports injuries. Survey research method and single group one way design used by researcher. The researcher was used simple random sampling method and the subject was choosing of within the state of West Bengal. The data was collected from 200 players of Kabaddi from West Bengal through the self-developed Questionnaire. The collected data was analyzed and personated in the ways namely percentage method, bar graph and pie diagram. Analysis was presented based on the joint wise analysis of data, upper and lower extremity wise analysis of the data, injuries cause wise analysis of data and overall injuries analysis. The significance of the study was how the sports persons avoid the injuries.

**Keywords:** Kabaddi, Players, Injuries, West Bengal

### **INTRODUCTION:**

Kabaddi is a 4000-year-old team sport that is performed in several South Asian countries. The term comes from a Tamil word that means "holding of hand," which is an important feature of the game. It's a team sport that demands both talent and strength [1]. It's a basic and inexpensive game that doesn't necessitate a large playing area or expensive equipment [2]. Historians believe that additional old inscriptions reveal that Kabaddi existed in India throughout prehistoric times. Arjun had a special knack at Kabaddi in the Mahabharata [3]. He could easily sneak into a wall of foes, kill them all, and then return unharmed. According to Buddhist literature, Gautam Buddha used to play Kabaddi for fun. It is said that he enjoyed playing the game and used it to demonstrate his power, which helped him win his wives. From the documents uncovered by historians, it is clear that Kabaddi was a popular game in ancient times. Hu-Tu-Tu in western India, Ha-Do-Do in eastern India and Bangladesh, Chedugudu in southern India, and Kaunbada in northern India are all variations of the same game. Modern Kabaddi is a fusion of the game as it has been played in many forms and under numerous titles [4,5]. Kabaddi was accorded national status as a game in India in 1918. The Maharashtra state is credited for bringing the game to a national level. As a result, the game's standard set of rules and regulations was developed in the same year. However, it was only a few years later, in 1923, that the rules and regulations were printed. In the same year, an all-India Kabaddi tournament was held in Baroda, with the players adhering to the game's rules and regulations to the letter. Since then, the game has progressed significantly. As the sport's popularity grew, a number of national competitions were held across the country. The game was first played at the 1938 Indian Olympic Games in Calcutta, and it quickly gained international acclaim [6-8].

Athletes can suffer from a variety of physical illnesses. As a result, we require a classification system in order to properly communicate about sports injuries. This classification system is also necessary for the prevention,

detection, and treatment of each condition. The length of time it takes for an injury or illness to develop can be used to classify it. These are the two most common time-related classes of injuries [9,10].

- Acute-Occurring Ex. Broken bones, cuts, bruises, appendicitis.
- Chronic-Developing or lasting over a long period. Ex. Shin splints. Tennis elbow.

### **EXPERIMENTAL METHODOLOGY:**

#### **Sources of data:**

As per the guidance of supervisor and advises of the experts, it was resolved to collect data from 200 players of Kabaddi within the state of West Bengal.

#### **Collection of data:**

The data for present study was collected from players of Kabaddi through the self-developed questionnaire of sports injuries.

#### **Research Method and Design:**

Survey research method and single group one way design used by researcher.

#### **Sampling Method:**

The researcher was used simple random sampling method and the subject was choosing of within the state of West Bengal.

#### **Method of presentation:**

The collected data was analyzed and personated in the following ways:

- Percentage method
- Bar graph

### **ANALYSIS OF DATA, INTERPRETATION AND RESULTS:**

Analysis was presented in the following form

- Joint wise analysis of data
- Upper and lower extremity wise analysis of the data
- Injuries cause wise analysis of data
- Overall injuries analysis

#### **Abbreviation of Sports Injuries**

It was realized that for the convenience and economic presentation of material as well as tabulation injuries must be abbreviated. So, help to some books, and self-made smaller form of abbreviated of name of injury are listed in the table 1.

**Table No. 1 : Showing the percentage of injury in shoulder joint:**

<b>Sr. No.</b>	<b>Name of Injury</b>	<b>Abbreviation</b>
01	Sprain	SPN
02	Strain	STN
03	Fracture	FRA
04	Dislocation	DIS
05	Abrasion	ABN
06	Contusion	CON
07	Bursitis	BUR
08	Tendinitis	TEND
09	Tenosynovitis	TENO
10	Epicondylitis	EPI
11	Tennis elbow	TE
12	Exostosis	EXO

13	Synovitis	SYN
14	Hematoma	HEM
15	Back ruptured disk	BRD
16	Ganglion	GANG
17	Cramp	CRA
18	Ruptured	RUP
19	Laceration	LAC
20	Back Sprain	BS

**Table No. 2: Showing the percentage of injury in elbow joint**

Total number of players = 200

No of Injured Player	Number of Injuries and percentage				
	DIS	SPN	BUR	TEND	TENO
Total Percentage 15.5 %	06	13	09	09	07
	03%	6.5 %	4.5 %	4.5 %	3.5 %

Table No. 2: 15.5% Kabaddi players are injured with shoulder injuries.

Player's injury rate of dislocation =03%, sprain=6.5%, bursitis=4.5%, tendinitis=4.5%, tenocynovitis =3.5%. total number of injuries in shoulder joint is 44.

**Table No. 3 : Out of 31 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due to inappropriate technique	14	45.16 %
Due to improper warm up	07	22.58 %
Due to accident	04	12.90 %
Due to any other reason	06	19.35 %

Table No. 3: 14 (45.16 %) players were injured due to inappropriate technique, 7(22.58 %) players were injured due to improper warm up, 4 (12.90 %) players were injured due to accident and 6(19.35 %) players were injured due to any other reasons in out of 31 injured players.

**Table No. 4: Showing the percentage of injury in elbow joint**

<b>Number of Injured Player</b> 24	<b>Number of Injuries and percentage</b>
---------------------------------------	--

	DIS	FRA	BUR	TEND	TE
Total Percentage	05	10	07	03	04
12%	2.5 %	5 %	3.5%	1.5 %	2 %

Table No. 4: The analysis of data in table no.03, 12% players are injured of above elbow injuries in out of 200 Kabaddi players on the basis of above table injury rate of dislocation=2.5%,fracture=5%,bursitis=3.5%,tendinitis=1.5% and tennis elbow=2%, total number of injuries in elbow joint = 29.

**Table No. 5: Out of 24 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	08	33.3 %
Due To Improper Warm Up	06	25 %
Due To Inadequate Use of Equipment	07	29.16 %
Due To Any Other Reason	03	12.5 %

Table No. 5: 08 (33.3 %) players were injured due to inappropriate technique, 06 (25%) players were injured due to improper warm up, 07 (29.16%) players were injured due to inadequate use of equipment and 03 (12.5%) players were injured due to any other reasons in out of 24 injured players.

**Table No. 06: Showing the percentage of injury in wrist joint**

**Total number of players = 200**

Number of Injured Player 21	Number of Injuries and percentage				
	SPN	DIS	GAN	Hand FRA	Finger DIS
	15	08	09	03	01
Total Percentage 10.5%	7.5%	4 %	4.5%	1.5 %	0.5%

Table No. 6: 10.5% players are injured of above wrist injury in out of 200 Kabaddi players. On the basis of above table players injury rate of sprain=7.5%, dislocation = 4%, ganglion=4.5%, hand fracture=1.5% and finger dislocation=0.5%. total number of injuries in wrist joint = 36

**Table No. 7: Out of 21 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	09	42.85 %
Due To Improper Warm Up	08	38.09 %
Due To Any Other Reason	04	19.04 %

Table No. 7: 9 (42.85%) players were injured due to inappropriate technique, 8 (38.09%) players were injured due to improper warm up and 4(19.04%) players were injured due to any other reasons in out of 21 injured players.

**Table No. 8: Showing the percentage of injury in hip joint**

Number of injured player 19	Number of injuries and percentage	
Percentage 9.5%	DIS	BUR
	12	17
	6%	8.5%

Table No. 8: 9.5% players are injured of above hip injuries in out of 200 Kabaddi players. On the basis of above table injury rate of dislocation=6% and bursitis=8.5%, total number of injuries in hip joint = 29.

**Table No. 9: Out of 19 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Improper Warm Up	08	42.10 %
Due To Inappropriate Technique	07	36.84 %
Due To Any Other Reason	04	21.05 %

Table No. 9: 08 (42.10%) players were injured due to improper warm up, 07 (36.84%) players were injured due to inappropriate technique and 04 (21.05%) players were injured due to any other reasons in out of 19 injured players.

**Table No. 10: Showing the percentage of injury in knee joint**

Total number of players = 200

Number of Injured Player	Number of Injuries and percentage			
	DIS	SPN	BUR	Knee cap FRA
24				
Total Percentage 12%	07	21	16	---
	3.5%	10.5 %	8%	---

Table No. 10: 12% players are injured of above knee injuries in out of 200 kabaddi players on the basis of above table injury rate of dislocation=3.5%, Sprain= 10.5%, Bursitis=8%. Total number of injuries in knee joint= 44.

**Table No. 11: Showing the percentage of injury in knee joint**  
**Total number of players = 200**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	11	45.83 %
Due To Improper Warm Up	07	29.16 %
Due To Accident	04	16.66 %
Due To Any Other Reason	02	8.33 %

Table No. 11: 11(45.83%) players were injured due to inappropriate technique, 07(29.16%) players were injured due to improper warm up, 4(16.66%) players were injured due to accident, 2 (8.33%)players were injured due to any other reasons in out of 24 injured players.

**Table No. 12: Showing the percentage of injury in ankle joint**  
**Total Number of players = 200**

Number of injured Player	Number of injuries and percentage				
	DIS	EXO	SYN	Foot FRA	Foot HEMA
17					
Total Percentage 8.5%	08	04	06	05	02
	4%	2%	3%	2.5%	1%

Table No. 12: 8.5% players are injured of above ankle injuries in out of 200 Kabaddi players. On the basis of above table injury rate of dislocation= 4 %, exostosis =2%, synovitis=3%, foot fracture=2.5%, and foot hematoma=1%.

Total number of injuries in ankle joint = 25.

**Table No. 13: Causes of Injuries with percentage**

**Out of 17 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	06	35.29 %
Due To Improper Warm Up	04	23.52 %
Due To Accident	05	29.42 %
Due To Any Other Reason	02	11.76 %

Table No. 13: 6 (35.29%) players were injured due to inappropriate technique, 4(23.52%) players were injured due to improper warm up, 5(29.42%) players were injured due to accident, 2(11.76%) players were injured due to any other reasons in out of 17 injured players.

**Table No. 14: Showing the percentage of injury in spinal column**

**Total number of players = 200**

Number of Injured Player 13	Number of Injuries and percentage			
	FRA	S. FRA	BRD	BS
	07	08	10	07
Total Percentage 6.5 %	3.5%	4 %	5%	3.5%

Table No. 14: 6.5 % players are injured of above spinal column injuries in out of 200 Kabaddi players.

On the basis of above data Kabaddi players injury rate of fracture=3.5%, stress fracture=4%, back ruptured disk=5% and back sprain=3.5%. Total number of injuries in spinal column = 32.

**Table No. 15: Injured players causes with percentage**

**Out of injured player their causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	06	46.15 %
Due To Improper Warm Up	04	30.76 %
Due To Any Other Reason	03	23.07 %

**Table No. 15:** 6 (46.15%) players were injured due to inappropriate technique, 4 (30.76%) players were injured due to improper warm up, 3 (23.07%) players were injured due to any other reasons in out of 13 injured players.

**Table no. 16: Injuries percentage with lower extremity**

**Showing the percentage of injuries in lower extremity**

Name of injury	Number of injuries	Percentage
SPN	21	10.5%
STN	08	4%
FRA	19	9.5%
DIS	16	8%
AB	11	5.5%
CON	18	9%
BUR	26	13%
EPI	03	1.5%
SYN	06	3%
HEM	04	2%
RUP	06	3%
LAC	05	2.5%
CRA	08	4%
EXO	03	1.5%

Total Number of Players = 200 Number of injured players = 115 Percentage = 57.5%

Number of Injuries = 154

The analysis of data in table number 16, 154 injuries in Kabaddi players on lower extremity in out of 200 players. On the basis of above data players injury rate of sprain=10.5%, strain=4%, fracture=9.5%, dislocation=8%, aberasion=5.5%, contusion=9%, bursitis=13%, epicondylitis=1.5%, synovitis=3%, hematoma=2%, ruptured=3%, laceration=2.5%, cramp=4%, exostosis=1.5%.

**Table no. 17: Injured players causes with percentage**

**Out of 115 injured player their injuries causes and percentage**

Cause Of Injury	Number Of Player	Percentage
Due To Inappropriate Technique	64	55.65%
Due To Improper Warm Up	25	21.73%

Due To Accident	07	6.48 %
Due To Inadequate Use of Equipment	10	9.25%
Due To Any Other Reason	09	7.82 %

Table No.17: 64 (55.65%) players were injured due to inappropriate technique, 25(21.73%) players were injured due to improper warm up, 7(6.48%) players were injured due to accident 10(9.25%) players were injured due to inadequate use of equipment and 09 (7.82%) players were injured due to any other reasons in out of 115 injured players.

**Table No. 18: Injuries percentage with upper extremity**

**Showing the percentage of injuries in upper extremity**

Name of injury	Number of injuries	Percentage
SPN	28	14%
STN	10	5%
FRA	14	7%
DIS	20	10%
AB	17	8.5%
CON	11	5.5%
BUR	23	11.5%
TEND	12	6%
TENO	07	3.5%
TE	04	2%
RUP	05	2.5%
GAN	09	4.5%
BS	07	3.5%
BRD	21	10.5%
LAC	16	8%
CRA	14	7%
EXO	1	0.5%

Total Number of Players = 200 Number of injured players = 134 Percentage = 67%  
Number of Injuries = 219

Table No. 18: 219 injuries in Kabaddi players on upper extremity in out of 200 players.

On the basis of above data players injury rate of sprain=14%, strain=5%, fracture=7%, dislocation=10%, abrasion=8.5%, contusion=5.5%, bursitis=11.5%, Tendinitis=6%, tenocynovitis=3.5%, tennis elbow=2%, ruptured=2.5%, ganglion=4.5%, back sprain=3.5%, back ruptured disk=10.5%, laceration=8%, cramp=7%, exostosis=0.5%.

<b>Cause of Injury</b>	<b>Number of Player</b>	<b>Percentage</b>
Due To Inappropriate Technique	73	54.47%
Due To Improper Warm Up	31	23.13%
Due To Accident	06	4.47 %
Due To Inadequate Use of Equipment	09	6.71%
Due To Any Other Reason	15	11.19% %

**Table No. 19: Injuries causes with percentage**

**Out of 134 injured player their injuries causes and percentage**

Table No. 19: 73 (54.47%) players were injured due to inappropriate technique, 31(23.13%) players were injured due to improper warm up, 6(4.47%) players were injured due to accident, 9(6.71%) players were injured due to inadequate use of equipment and 15(11.19%) layers were injured due to any other reasons.

**Table No. 20: Showing the percentage of injuries in West Bengal players of Kabaddi**

<b>Name of injury</b>	<b>Number of injuries</b>	<b>Percentage</b>
SPN	49	24.5%
STN	18	9%
FRA	33	16.5%
DIS	42	21%
AB	28	14%
CON	32	16%
BUR	48	24%
TEND	12	6%
TENO	07	3.5%
EPI	03	1.5%

SYN	06	3%
HEM	02	1%
RUP	11	5.5%
GAN	09	4.5%
BRD	21	10.5%
LAC	21	10.5%
CRA	22	11%
TE	04	2%
EXO	04	2%
BS	07	3.5%

Table No. 20: Total number of players= 200 Total injured player= 157 Percentage= 78.5 %, Total number of injuries= 379

On the basis of above table sports injuries rate of sprain=24.5%, strain=9%, fracture=16.5%, dislocation=21%, abrasion=14%, contusion=16%, bursitis=24%, tendinitis=6%, tenosynovitis=3.5%, epicondylitis=1.5%, synovitis=3%, hematoma=1%, ruptured=5.5%, ganglion=4.5%, back ruptured disk=10.5%, laceration=10.5%, cramp=11%, tennis elbow=2%, exostosis=2%, back sprain=3.5%.

**Table No. 21: Injuries causes with percentage**

**Out of 157 injured player their injuries causes and percentage**

Cause of Injury	Number of Player	Percentage
Due To Inappropriate Technique	70	44.58%
Due To Improper Warm Up	44	28.02 %
Due To Inadequate Use of Equipment	19	12.10 %
Due To Accident	11	7.06 %
Due To Any Other Reason	13	8.28%

Table No. 21: 70 (44.58%) players were injured due to inappropriate technique, 44(28.02%) players were injured due to improper warm up,19 (12.10%)players were injured due to inadequate use of equipment 11(7.06%) players were injured due to accident and13(8.28%) players were injured due to any other reasons in out of 157 injured players.

## DISCUSSION & CONCLUSION:

After analyzing and interpreting the data related to the injury, following points were drawn:

**Shoulder joint:** 31(15.5%) players were found with shoulder injury.

14 players were injured due to inappropriate technique, 7 players were injured due to improper warm up, 4 players were injured due to accident and 6 players were injured due to any other reasons in out of 31 injured players.

**Elbow joint :** 24(12%) players were found with elbow injury.

08 players were injured due to inappropriate technique, 06 players were injured due to improper warm up, 07 players were injured due to accident and 3 players were injured due to any other reasons in out of 24 injured players.

**Wrist joint :** 21(10.5%) players were found with wrist injury. 09 players were injured due to inappropriate technique, 08 players were injured due to improper warm up and 04 players were injured due to any other reasons in out of 21 injured players.

**Hip joint :** 19(9.5%) Kabaddi players were found with hip injury. 08 players were injured due to improper warm up, 07 players were injured due to in appropriate technique and 04 players were injured due to any other reasons.

**Knee joint :** 24 (12%) Kabaddi players were found with knee injury. 11(45.83%) players were injured due to inappropriate technique, 7(29.16%) players were injured due to improper warm up, 4(16.66%) players were injured due to accident, 2(8.33%) players were injured due to any other reasons.

**Ankle joint:** 17(8.5%) Kabaddi players were found with ankle joint injury. 6(35.29%) players were injured due to inappropriate technique, 4(23.52%) players were injured due to improper warm up, 5(29.42%) players were injured due to accident, 2(11.76%) players were injured due to any other reasons.

**Spinal column:** 13(6.5%) players were found with spinal column injury. 6(46.15%) players were injured due to inappropriate technique, 4(30.76%) players were injured due to improper warm up, 3(23.07%) players were injured due to any other reasons.

**Lower Extremity:** In out of 200 players 115(57.5%) players injured with lower extremity. 64(55.65%) players were injured due to inappropriate technique, 25(21.73%) players were injured due to improper warm up, 7(6.48%) players were injured due to accident , 10 (9.25%) players were injured due to inadequate use of equipment and 09(7.82%) players were injured due to any other reasons in out of 108 injured players.

**Upper Extremity:** 134(67%) Kabaddi players were injured with upper extremity in out of 200 players. 73(54.47%) players were injured due to inappropriate technique, 31(23.13%) players were injured due to improper warm up, 6(4.47%) players were injured due to accident, 9(6.71%) players were injured due to inadequate use of equipment and 15(11.19%) players were injured due to any other reason.

**Overall injuries in Kabaddi Players:** 157 (78.5%) players were found injured in out of 200 Kabaddi players and total injuries were found in 200 players are 70(44.58%) players were injured due to inappropriate technique, 44(28.02%) players were injured due to improper warm up, 19(12.66%) players were injured due to inadequate use of equipment, 11(7.06%) players were injured due to accident and 13(8.28%) players were injured due to any other reasons.

## CONCLUSION:

It is common for injuries to occur on the playing field. Although it cannot be completely stopped, it can be avoided in order to make play more fun and joyful. If players and athletes are aware that they are on the ground at the time of competition in the coaching camp, injuries are less likely to occur. Coaches, officials, managers, and other officials are responsible for reducing injuries on the field. If you want to play at all costs, you can do it by using sophisticated technique and current equipment to build a healthy standard and competition programme. To prevent having a negative impact on the player's life.

As per above observation and finding we can say that in Kabaddi player mostly 44.58% players injured due to not used correct technique, 28.02% players injured due to not properly warming up exercise, 12.66% players injured due to inadequate use of equipment's, 7.06% players injured due to accident and 8.28% players injured due to any other reasons. Regarding above all factors knowledge is most to the players, coaches, trainers as well as organizers.

**REFERENCES:**

1. R.Jain, "Sports Medicine" Khel Sahitaya Kendra, Delhi, 2005,P- 241.
2. Kevin P. Speer, "Injury prevention and Rehabilitation for active older adults, Human Kinetics Publishers, Canada, 2005, P. 90.
3. Stuart Macgill, "Low back Disorders" Human Kinetics Publishers, Canada, 2007, P. 96, 97.
4. W. Wachsmuth and H. Walk, "On sport Accidents and sports damages", Devtsche Medizininishe Wochenschrift, 61, 1935, P. 677.
5. J. Hale, "Injuries among 771, 810 Little league Baseball players, "Journal of sports medicine, Vol-1, No.2, 1961, P.81.
6. G. La Cava, "Clinical and Statistical Investigation of Traumatic Lesions due to sport", Journal of sports medicine Vol-1, No.1, 1961, P. 12-18.
7. J.G. Dzenowgis, "College sports Accidents, Injuries", Safety education, March-1962, P. 5.
8. G. La Cava, "The prevention of Accidents caused by sports", Journal of sports medicine, Vol-4, No.4, 1964, P. 213-215.
9. O. Girgin, "Ankle injuries seen in Basketball players ", Sporhekin, derg, Vol-13, 1971, P. 115.
10. L. Meointosh et. al., "Physical activity and Injuries", Jornal of sports medicine, Vol-12, No.4, 1972, P. 13.