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A literature review study on kabaddi injuries

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Abstract
Kabaddi is Indian origin and combat game. This is aggressive in nature in this holding, pushing, catching, and jumping in fractions of second which directly increase the chances of injuries. This Research study gives a review on kabaddi game injuries. Using the information partners Google Scholar, The Web of Science, PubMed, SPORT Discus, MEDLINE, and Science immediate, a regressive review was conducted on kabaddi injuries using the following key-phrases in combination: Kabaddi, ACl, Sports Injury, kabaddi injury causes, prevention of injuries, combact sport, etc. Sports injuries in kabaddi led to the selection of 13 papers for regressive review. The most recent evidence suggested that Kabaddi is a game with a strong propensity for injuries. Injuries to the lower leg were considered to be more common in Kabaddi players after those to the knee. It was noted that mouth-guards do a fantastic job of preventing injuries, and playing techniques have improved. In the Indian context of this game, epidemiology studies and anticipatory techniques are absent. Therefore, injury prevention technique should be carried out for the betterment of kabaddi game.

Keywords: Kabaddi, ACl, sports injury, kabaddi injury causes, prevention of injuries, compact sport, etc.

Introduction
In a few games, our nation has achieved international acclaim. India is the reigning champion in kabaddi, one of them. India-born Kabaddi has been designated as the nation's national sport. Every race and region of the country has contributed to the development of this game. In contrast to rugby and wrestling, kabaddi allows for the most physical contact. Every region of India, as well as the majority of Asia, plays the traditional outdoor game of kabaddi with a few minor modifications (Awashes Subba and Ashish Choudhury., 2022) [11]. Williams and Sperryn (1976) [15] presented a traditional view of sports medicine. They classified sports medicine as follows: a) Man as a sportsman b) Sportsman and his environment c) Sportsman as a patient d) Sports as a therapy. Several authors listed various schemes for classifying sports injuries. Another method for categorising athletic injuries is based on the type of tissue involved, such as soft tissue and hard tissue (Morris, 1984) [16]. Morris (1984) [17] classified sports injuries as follows: i. By sport - football, track and field, volleyball, and so on.ii. By participant type - women, men, youth, children, and so on.iii. Injuries can be chronic or acute. iv. Based on the type of tissue involved - soft tissue versus hard tissue.v. Anatomical location - Shoulder, Knee, Wrist, Ankle, and so on Mondal and Ghosh (2017) [10].

Methods
This literature study was undertaken by conducting a comprehensive search in international databases such as MEDLINE, Science Direct, The Web of Science, PubMed, SPORTDiscus, and Google Scholar to locate results matching the keys. Kabaddi, ACl, Sports Injury, kabaddi injury causes, prevention of injuries, combact sport. 13 study qualified papers on common injuries in kabaddi, and least studies on injury prevention in kabaddi were examined. The inclusion criteria includes studies on kabaddi players published between 2004 and 2022. Prospective studies, retrospective studies, cross-sectional studies, case-control studies, descriptive studies, and review studies were all conducted. Studies published prior to 2004 were excluded as exclusion criterion.

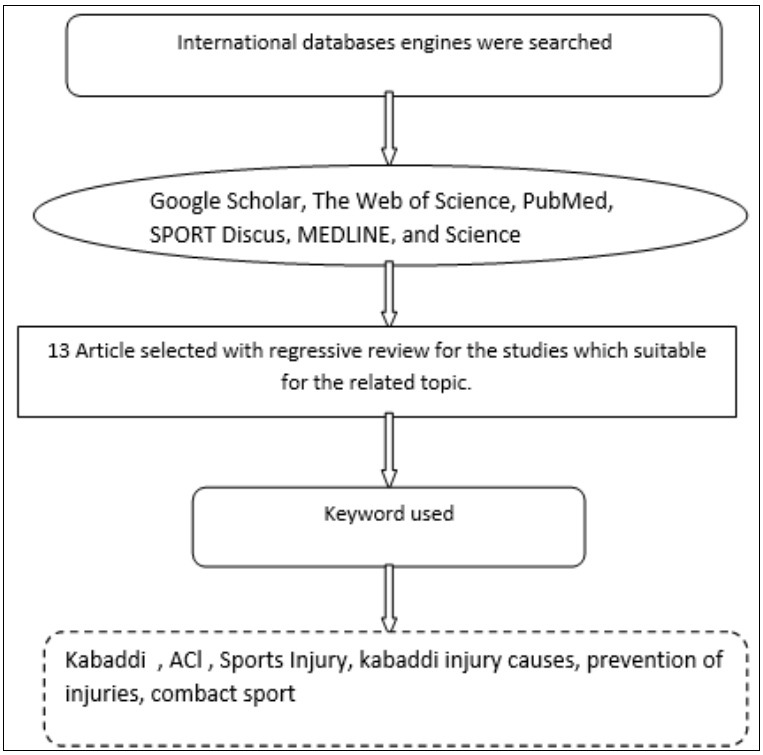

Fig 1: Flow chart of the methodology

Results

A following article were found on injuries in Kabaddi. The review study is tabulated in Table 1 which showed the common injuries found in this sport.

Author	Study Design	Sample Size	Common Injuries and Study Finding
Dhillon *et al*., 2017 [1]	Cross sectional study	76 Kabaddi players	According to this study, the most common injury was an ACL tear (89.47%), followed by meniscus tears in 68.42% of the players. And the most common cause (72.37%) was contact mechanism.
Kurup and Chowdhery , 2014 [3]	Survey	Not defined	Lower limb injuries were found to be prevalent, with the knee (knee injuries 83.8%) being the most commonly injured site.
Sen, 2004 [18]	Survey	Not defiend	It was discovered that knees (19%) were more prone to injury than ankles (14%). Concussion (32%) and distortion (28%) were the most common types of injuries sustained. Contact with opponents and contact with uneven ground were the most common causes of injuries.
Mondal and Ghosh, 2017 [10]	Survey	154 players	Knee and ankle ligament injuries were discovered to be prevalent in Kabaddi players. There was also a contusion, laceration, bruise, bone fracture, and dislocation.
Prabhu and Kishore, 2014 [4]	Survey	30 players	The ankle joint was more seriously injured than the knee.
Awashes Subba and Ashish choudhury, 2022 [11]	Survey	43	Dislocation (56%), sprain (52%), and strain (36%), were the most common types of injuries, followed by some fracture, bursitis, and hematoma. Furthermore, the wrist joint (56%), ankle joint (36%), and knee joint (28%), were discovered to be the most commonly injured joints. In terms of injury causes, Tripura kabaddi players stated that their injuries were primarily caused by improper warming up (32%), inappropriate technique (28%), and insufficient use of equipment (24%).
Moeini *et al*., 2011 [1]	Survey	73 Iranian players	The majority of injuries (41.55%), lower limb (32.77%), head and face (15.28%), and trunk and neck (10.3%) were recorded. It also stated that the most common causes of injuries were 'contact with the opponent' and 'falling'.
Mohamadi and Rajabi, 2017 [5]	Prospective survey	Not defined	The injury rate in 1000 hours of play was 229.9, with the head and face (26.2%) and knee (15.5%) being the most vulnerable parts. Contusions, bruises, and hematomas account for 48.5% of all injuries. The most common cause of injury was contact with an opponent.
Belaldavar *et al*., 2018 [6]	Case report	1 Male player	It has been reported that blunt trauma can cause orbital emphysema.
Shetty and Rao, 2013 [7]	Case report	1 Male player	A facial injury was reported to have occurred during the match. A zygomatic arch fracture was discovered in the player.
Agrawal, 2010 [8]	Case report	1 case	Subdural hematoma occurred while playing Kabaddi, and the injury was caused by the head striking the ground.
Selva *et al*., 2018 [9]	Survey	100 players	Males (84%) outnumbered females (16%), with an average age of 18.5 years. Out of the total participants, 29% had tooth chipping or fracture, 100% had softtissue laceration, 12% had tooth avulsion, and 30% had jaw/bone fracture. Almost 5% were aware that teeth could be replanted. 83% were unsure when it is best to put the teeth back in the mouth, 91% said they would carry an avulsed tooth in water, 3% wrapped in cloth, and 6% said others. Almost 42% were aware that mouthguards protect against injury. Almost 3% wore mouthguards.
Sajjan Pal *et al*.,	Survey	80	The shoulder was the most commonly injured location in the upper limb (21.25%), followed by the

2020 [13]			arm (5%). The knee (21.25%) was the most commonly injured site in the lower limb, followed by the ankle (13.75%), while the lower back (14.25%) accounted for the majority of injuries in the trunk. It was discovered that only 53.75% (N=41) of players were aware of physiotherapy, and 23 (67.65%) of 34 players chose physiotherapy as a treatment at the time of data collection.

Discussion

There is a lack of literature on injuries in kabaddi, as well as v ery few studies on specific sports-related injuries and The majority of these research were the outcome of poorly constructed and based on survey. The most common conclusion of this analysis was that the lower limb, particularly the knee joint, was more prone to injury in kabaddi. In a survey, Prabhu and Kishore (2014) [2] discovered that ankle and knee injuries were the most common in Kabaddi. The most common injury (89%) was ACL tears. Previous research by Dhillon *et al*. (2017) [1], Mondal and Ghosh (2017) [10], Moeini *et al*., 2011 [4], Sen (2014) [18], and Kurup and Chowdhery (2014) [3] has found that the knee joint is one of the most commonly damaged joints in Kabaddi. ACL injuries were seen in a high number of kabaddi players, which likely accounts for the devastating impact on the players' careers, as ACL tears are known to have a considerable adverse influence on a player's career. Shetty and Rao (2013) [7] report face injury that orbital emphysema and zygomatic arch fracture on the face and subdural hematoma and these finding have chances orbital emphysema in one more study by Belaldavar (2018) [6] and facial injury and head injury agreement with finding of Mohamadi and Rajabi (2017) [5] and Agrawal (2010) [8] Contact with the opponent was the main cause of the injury. Sajjan Pal *et al* (2020) [14] discovered that upper body have more injury area is shoulder and in lower is knee and ankle and one study shows upper body in wrist have more injury then lower body by Awashes Subba and Ashish choudhury (2022) [11]. Selva (2018) [9] suggested that wearing mouthguards can help avoid dental injuries. Mouthguard usage is widely advocated as a technique to lower the risk of orofacial damage and concussions.

Conclusions

In combat sports, such as Kabaddi, injuries are prevalent, particularly knee injuries. Sports injuries have a significant influence on the individual, their profession, and the health perspective. A sports injury may also have an impact on an athlete's future participation in physical activity and health. It is critical to consider in the education of trainers and coaches. For a good sports safety framework, several injury prevention techniques must be implemented and should improve more biomechanical assistance which helps to get athletes decrease the chances of injury.

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