Analyzing Sports Injuries of Kabaddi Players: A Systematic Review

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Authors’ Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

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Abstract
Objective. This study aimed at analyzing sports injuries of kabaddi players through a systematic review.

Materials and methods. This review study adhered to the PRISMA guidelines for systematic reviews and meta-analyses. The study must have been published within the previous five years, from 2020 to 2024. The search procedure was conducted using the keywords (1) kabaddi, and (2) injuries. The Scopus search engine was used in this study.

Results. The search results in the database produced 104 articles that were adjusted to the criteria into 5 articles. Four articles summarized knee injury, one article focused on ACL tear injury, one article summarized the prevalence of traumatic orofacial injuries and traumatic episodes, two articles addressed ankle injuries and one article described and summarized shoulder injury.

Conclusions. The analysis of sports injuries in kabaddi players using a systematic review's findings leads to the conclusion that common injuries among kabaddi players are ACL tear injuries, knee injuries, prevalence of traumatic orofacial injuries, widespread presence of traumatic episodes, ankle injuries and shoulder injuries.

Keywords: kabaddi, injuries.

Introduction
Sports injuries can have a significant impact on athletes, especially in adolescent athletes, female futsal athletes, gymnasts and individuals with spinal cord injury (SCI). In adolescent athletes, pars injuries are a common cause of low back pain, with MRI being an accurate diagnostic modality (Asperti et al., 2017; Sun, 2023). Female futsal athletes showed a negative relationship between injury frequency and Adversity Quotient, emphasizing the need for psychological support during recovery (Haraldsdottir & Watson, 2021). Gymnasts frequently experience wrist injuries, with elite gymnasts facing higher injury rates, requiring proper evaluation and treatment to prevent chronic consequences. For individuals with SCI, participating in sport can positively impact physical function, quality of life, and community integration, highlighting the potential benefits of sport as an intervention to address the challenges associated with SCI (Cheung et al., 2022). Understanding the psychosocial impact of sports injuries in young athletes is crucial to aid their management and prevent potential long-term consequences on mental health (Haraldsdottir & Watson, 2021).

Kabaddi players exhibit significant levels of muscle and body fitness, affecting their performance and susceptibility to injury. Research has shown that Kabaddi demands certain physical and physiological fitness characteristics such as agility, strength, speed and flexibility (Dahiya & Kumar, 2023). Additionally, research highlights the high prevalence of injuries in Kabaddi due to its aggressive nature, with knee injuries being particularly common among players (Chidambara Raja, 2023; D. R. M. Johnson et al., 2023). Furthermore, a study comparing Kabaddi and Kho-Kho players found differences in resting speed and pulse rate, suggesting varying fitness levels between the two sports (Harry & George, 2021). The prevalence of traumatic orofacial injuries among Kabaddi players underscores the risks associated with contact sports, emphasizing the importance of injury prevention strategies and adequate training to maintain performance and ensure player safety (Kalpana & Saraboji, 2022).

Sports injuries can indeed be avoided by athletes through various preventive measures. Research shows that insufficient warm-up is a common cause of injury during physical
exercise, emphasizing the importance of proper preparation (Karo–Karo et al., 2023; G. Zhou, 2022). Additionally, a study in adolescent athletes highlighted the importance of neuromuscular training programs and education to prevent overtraining and risky maneuvers, reducing the incidence of musculoskeletal injuries (de Sire, 2022; Ram et al., 2022; Ram & Singh, 2021). Understanding the causes and factors that lead to injuries is essential to implement effective prevention strategies, as highlighted in a survey analyzing sports injuries across different specialties and athlete profiles (Golovashenko et al., 2022). Moreover, a focus on sports injury prevention in training is essential to ensure the health and well-being of athletes, emphasizing the need to strengthen preventive measures to minimize the negative impact of injuries on athletes’ physical health and training continuity (Kusuma & Novita, 2023; W. Zhou & Chu, 2022).

Sports injuries in athletes can stem from various factors as highlighted in research. Excessive workload, early sports involvement, incorrect training methods, and rule violations contribute significantly to injuries (Selumyan & Petrosyan, 2023). Excessive physical strain, repetitive microtraumatization, and impact forces that exceed tissue resistance are the main causes of occupational diseases in athletes (Serhata et al., 2023). Injuries can be acute or chronic, with different types such as open wounds or closed fractures (Golovashenko et al., 2022). Psychological factors such as insecurity, reduced self-confidence, and fear of team impact play a role in the post-injury rehabilitation process (Sun, 2023). In addition, there are gender-based differences in sports-related injuries, with women experiencing higher rates of non-contact musculoskeletal injuries due to hormonal influences and training factors, emphasizing the importance of preventative measures and awareness among coaches and athletes (Raj et al., 2023).

Research on kabaddi has been extensive, covering various aspects such as injuries, physical fitness, psychomotor skills, and nutritional profiles of athletes. In addition, research has explored the impact of angina training with elastic bands on speed during direction changes, showing significant improvements in athlete performance (Utama et al., 2022). Evaluations of psychomotor skills have revealed differences between kabaddi and kho-kho players in areas such as speed, agility, balance, freezing, and eye-hand coordination (Chidambara Raja, 2023; Utama et al., 2022). Furthermore, comparisons between kabaddi and kho-kho players have been made regarding resting speed and pulse rate, suggesting differences in physical attributes between the two sports (Finco & Maciel, 2020). Training programs that meet the demands of sports can be developed with the use of this research. This study is crucial as a result. The purpose of the study is to give readers with recommendations based on the research findings.

Materials and Methods

The research method used was a systematic literature review (SLR) to study and interpret the analysis of sports injuries in kabaddi players. Systematic literature reviews play an important role in guiding future research by providing a comprehensive summary of existing knowledge, identifying gaps in the literature, and suggesting areas for further investigation. These reviews help researchers understand the current state of a particular topic, develop new hypotheses, test theories, and generate new insights. By systematically analyzing and synthesizing a body of literature, systematic reviews offer a solid foundation for future research efforts, allowing scholars to build on existing work and push the boundaries of knowledge. They also contribute to improving the rigor and quality of research in various fields, including business, management, healthcare, and social sciences, by offering a structured approach to data collection and analysis. Ultimately, systematic literature reviews serve as a valuable resource for researchers, practitioners, and policy makers seeking evidence-based decision making and policy development.

Study Participants

This study is comparable to an analysis of sports injuries among kabaddi players since its population consists of articles published in international journals that are indexed by a very reliable database, namely Scopus. H-Index articles and publications from 2020–2024 published in international journals with Elsevier homepages are the samples that were chosen. The research data sources used in this study are of two different types: primary and secondary. In this study, a data coding sheet was the instrument. The information is helpful in explaining the exclusion of specific studies from the synthesis in addition to acting as an internal audit.

Data Collection Techniques and Instruments

Planning

Planning is the initial step in the systematic review process, which involves assembling a review panel of professionals and experts to create review questions. Data synthesis and analysis will follow from the review questions. The chapter on problem formulation has addressed the review questions.

Data Collection

The study’s secondary data came from studies done by earlier researchers and published in international journals that were indexed by Scopus, a very reliable database. The keywords “kabaddi” AND “injuries” were used in the article search. To improve the quantity of article searches, the author additionally examines the references of the articles that are searched.

Inclusion and Exclusion Criteria

The study’s inclusion criterion is that only keyword-related data were utilized. Only English articles that meet predefined criteria are included in the data, which is original content utilized between 2020 and 2024. In the meantime, these are the exclusion standards: Information that is not about injuries sustained in kabaddi, is not an original piece (including reviews), is not in the English language, and is indexed based on pre-established standards. The information was utilized between 2020 and 2024.

The database yielded 104 articles in total when articles were searched using keywords. Following filtration based on the language, article type, and publication period 2020–2024, 63 articles were found. Additionally, a total of 5 articles were
acquired after the articles were chosen based on inclusion and exclusion criteria based on relevancy (Figure 1).

Study Instruments

The researcher employed analysis of annotated bibliographies. Annotated bibliographies are analyzed based on a number of factors, including the author’s credentials and goals, the identity of the referenced source, a brief synopsis of the material, and the significance of the sources cited in relation to the formulation of the problem.

Results

The table below shows the total number of publications during the selected time period, year of publication.

Table 1. Evolution of the number of publication at year

<table>
<thead>
<tr>
<th>No</th>
<th>Year</th>
<th>Number of Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2020</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2021</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>2022</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>2023</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>2024</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2. Review of research results

<table>
<thead>
<tr>
<th>No</th>
<th>Author and Years</th>
<th>Method</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Dahiya &amp; Kumar, 2023)</td>
<td>Observation of regression in kabaddi injuries</td>
<td>ACL tear injury</td>
</tr>
<tr>
<td>2</td>
<td>(R. M. Johnson et al., 2023)</td>
<td>Observational cross-sectional study with cluster random sampling</td>
<td>Knees injury</td>
</tr>
<tr>
<td>3</td>
<td>(Pal et al., 2021)</td>
<td>Comprehensive literature review</td>
<td>Prevalence of traumatic orofacial injuries and traumatic episodes</td>
</tr>
<tr>
<td>4</td>
<td>(Yallappa, 2020)</td>
<td>Application of biomechanics in Kabaddi technique</td>
<td>Knee and ankle injuries</td>
</tr>
<tr>
<td>5</td>
<td>(Park &amp; Kim, 2020)</td>
<td>Injuries recorded on the IOC daily injury report form</td>
<td>Knee injury</td>
</tr>
</tbody>
</table>

According to the literature, sports injuries of kabaddi players shown in the table above based on a review consisting of five studies there are four articles summarized Knee injuries, one article on ACL tear injuries, one article summarized Prevalence of traumatic orofacial injuries and traumatic episodes, two articles summarized Ankle injuries and one article summarized Shoulder injuries.

Discussion

Kabaddi players are at a significant risk of sustaining an ACL tear injury, as highlighted in various research papers. Studies have shown that the incidence of ACL tears is very high in kabaddi players, with a large number of injuries attributed to incorrect movements such as scissor grips (Pal et al., 2021). In addition, the prevalence of meniscus tears is also increased in kabaddi athletes, with most injuries occurring during competitive matches and leading to considerable durations of time lost in the sport (Yallappa, 2020). The aggressive nature of kabaddi, which involves rapid movements such as holding, pushing, catching and jumping, directly contributes to increased susceptibility to injury, especially in the knee region (Mondal, 2017). These findings underscore the importance of implementing injury prevention strategies and stricter regulations in Kabaddi to reduce the burden of ACL tear injuries and increase player safety and career longevity.

Kabaddi, an aggressive sport originating from India, poses a significant risk of knee injury to its players, with studies highlighting the prevalence of such injuries (Dahiya & Kumar, 2023; Mondal, 2017). Research into the profile of knee injuries among elite Iranian karateka also revealed a high incidence of knee injuries, particularly involving the anterior cruciate ligament (ACL), articular cartilage and meniscus (Naserpour et al., 2021). A comparative study between soccer and kabaddi players further emphasized the higher incidence of meniscus tears in kabaddi athletes, especially in the lateral meniscus, indicating the vulnerability of the knee in this sport (Gupta et al., 2020). Additionally, a study focusing on the effects of rehabilitation in male kabaddi knee injuries showed that interventions such as strapping, sports massage, stretching, and strengthening exercises can effectively reduce pain and improve range of motion in injured players (Dhillon et al., 2016). These findings underscore the importance of injury prevention strategies and rehabilitation programs to keep kabaddi players’ knees healthy.

Ankle injuries are a common concern in Kabaddi, with research highlighting their frequency and impact on...
players. Research shows that knee injuries are common in Kabaddi players, followed by ankle injuries, emphasizing the vulnerability of the lower extremities in this sport (Dahiya & Kumar, 2023; Mondal, 2017; Pal et al., 2021). Ankle ligament OEO is particularly important, with varying percentages reported across different age groups and genders of Kabaddi players, demonstrating the importance of these injuries across different demographics. Furthermore, ankle injuries are often associated with the aggressive and combative nature of Kabaddi, where fast movements such as holding, pushing, catching and jumping increase the risk of injury, especially to the lower extremities (Kim et al., 2015). Understanding the pattern and frequency of ankle injuries in Kabaddi is crucial to implementing effective preventive measures and ensuring long-term player health and safety.

Shoulder injuries are a significant concern in Kabaddi, with a focus on knee injuries in the sport. Research has highlighted the prevalence of knee injuries, such as ACL tears and meniscus tears, leading to retirement from the sport and significant time loss in competition (Dahiya & Kumar, 2023). While knee injuries are predominant, the upper extremities, including the shoulders, are also prone to injury in kabaddi, with contact with opponents being the main cause (Dhillon et al., 2016). Epidemiological data from various studies emphasize the need for injury prevention programs and immediate treatment after injury to reduce the incidence of shoulder and other injuries in kabaddi players (Jayati, 2004).

Conclusions

Based on the results of the analysis of sports injuries in kabaddi players with systematic review, it can be concluded that injuries that often occur in Kabaddi Players are ACL tear injuries, knees injuries, prevalence of traumatic orofacial injuries, prevalence of traumatic episodes, ankle injuries and shoulder injuries.

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Conflict of interest

The author guarantees that there is no conflict of interest.

References


Аналіз спортивних травм гравців у кабадді: Систематичний огляд

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Авторський вклад: A – дизайн дослідження; B – збір даних; C – статаналіз; D – підготовка рукопису; E – збір коштів


Мета дослідження. Метою цього дослідження було проаналізувати спортивні травми гравців у кабадді за допомогою систематичного огляду.

Матеріал та методи. Дане оглядове дослідження проведено відповідно до керівних принципів PRISMA для систематичних оглядів і meta-аналізів. Матеріали дослідження мали бути опубліковані протягом попередніх п'яти років, з 2020 по 2024 рік. Процедура пошуку проводилася за ключовими словами (1) кабадді та (2) травми. В рамках цього дослідження використовувалась пошукова система наукометричної бази даних Scopus.
Результати. За результатами пошуку в базі даних було отримано 104 статті, які були відібрани згідно з встановленими критеріями і розділені на 5 статей. У чотирьох статтях представлено огляд травм колінного суглоба, одна стаття при- свячена дослідженню розриву передньої хрестоподібної зв’язки, одна стаття містить аналіз поширеності травматичних ушкоджень орофаціальної ділянки та травматичних випадків, дві статті описують травми гомілковостопного суглоба, а у одній статті розглянуто та узагальнено аспекти травм плечового суглоба.

Висновки. Аналіз спортивних травм гравців у кабадді з використанням результатів систематичного огляду дозволяє зробити висновок, що найпоширенішими травмами серед гравців кабадді є розриви передньої хрестоподібної зв’язки, травми колінного суглоба, поширеність травматичних ушкоджень орофаціальної ділянки, переважання травматичних випадків, травми гомілковостопного суглоба та травми плечового суглоба.

Ключові слова: кабадді, травми.

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