

Study of Sports Injuries and Their Prevention Among College Athletes

¹ Ms. Jaswinder Kaur, ² Dr. Sakshi Nagru

¹ Student M.Sc. Yoga Therapy, Department of Physical Education, Guru Kashi University, Talwandi Sabo, Bathinda

² Assistant Professor, Department of Physical Education, Guru Kashi University, Talwandi Sabo, Bathinda.

Email Id: ¹ 7795jaswinderkaur@gmail.com, ² sakshinagru@gmail.com

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Abstract— Sports injuries also affect performance in college athletes as well as studies and health. The aim of the present study was to examine the prevalence of sports injuries, the major causes and risk factors of sports injuries, knowledge about injury prevention, and adoption of preventive practices among college athletes. For the study, descriptive survey design was utilized. A hundred athletes, which include 50 male and 50 female college students (18 to 25 years of age), were selected as the sample from Government and privately owned colleges in Bathinda District, Punjab. The current and appropriate organization of the questionnaire can be analyzed using the dashboard. In order to examine the data collected, descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential statistics (Independent-Samples t-test, chi-square test, and Pearson's correlation coefficient) were used. The study found that ankle sprain was the most common sport injury, accounting for over 32% of cases. Knee injury or damage was suffered by 24% of individuals, whereas muscle strain was suffered by 18% of individuals. The injury score of female athletes was more than that of male athletes, but not significant ($p > 0.05$). Injuries were significantly associated with training intensity. An enhanced understanding of injury prevention led to fewer injuries. The injuries were reduced significantly by means of warming up and protective gear. The study claims that sports injuries among college athletes can be minimized, enabling them to participate in sports through systematic training, injury-

prevention education, conditioning, and effective protective equipment.

Keywords – Sports injuries, injury prevention, college athletes, training intensity, protective equipment, awareness.

I. INTRODUCTION

In higher education, sports are an essential component. They play a key role in strengthening fitness, health, discipline, and team spirit. College athletes train and compete to improve and represent their college or university. However, with increasing participation in sports, the incidence of sports injuries also increases. Thus, injury prevention is an important aspect of physical education and sports science [1], [8].

Injuries in sports occur during training, practice, or competition. Also, injuries can affect the muscles, bones, ligaments, tendons and joints. These injuries can be grouped into two broad categories: acute injuries, like fractures, sprains, and dislocations, and chronic injuries due to repetitive stress, like tendinitis and stress fractures [6]. Not only will the athlete's performance be hindered, but it will also affect activities in class, confidence, and physical health in the long run.

Several reasons explain sports injury in college athletes. These include high-intensity training without warm-up, poor physical conditioning, faulty technique, overtraining, inadequate recovery, and unawareness of injury prevention [2], [4]. Following preventive measures such as proper warm-up and cool-down exercises, strengthening and flexibility exercises, optimal nutrition, adequate rest and

recovery, protective equipment use, and a scientifically planned training program can significantly reduce the risk of injury [3], [5], [7]. Getting diagnosed early and undergoing timely rehabilitation and sport-specific return-to-play practices further help recovery and reduce recurrence.

Research on sports injuries among college athletes in India is limited. This is despite increasing awareness of the issue. Research needs to be conducted in the local context owing to variations in coaching practices. As a result, the present study was undertaken to determine the common sports injuries and their causes and risk factors in addition to looking at the level of awareness of injury prevention measures and practice of injury prevention among college athletes of Bathinda District in Punjab.

II. RELATED WORK

There has been extensive research on sports injuries and their prevention among athletes at all levels of participation. Research was previously conducted on injury patterns, causal factors, mechanisms, and prevention. These investigations helped identify injury patterns and improve athletes' safety.

Compared with other parts of the body, the lower extremity has accounted for two-thirds of injuries among college athletes. According to the authors of [1] and [2], these are the main causes. Despite appearances, this is certainly not the case. Injury prevention programs that incorporate neuromuscular, strength and conditioning, and balance exercises as well as monitor workload may reduce injury rates [3], [7]. It is recommended to introduce additional protection such as protective gear, proper nutrition and adequate rest [5].

Wearable sensors, biomechanical investigation, and other athlete monitoring systems are increasingly used to forecast injuries and enhance rehabilitation. A research study indicates that increasing knowledge on safe training methods and

rehabilitation reduces avoidable injuries. In view of the limited studies conducted only with college athletes from regional India, the present study was undertaken.

III. RESEARCH METHODOLOGY

A. Research Design

The study used descriptive survey method to examine sports injuries and prevention roster among college athletes. This method helped in collecting, analyzing and interpreting data on injury prevalence and types, causes and risk factors, awareness and prevention without any manipulation of the variables.

B. Participants and Setting

According to a study, the sample consisted of 100 college players aged between 18 and 25 years who were selected from governmental and private colleges of Bathinda District, Punjab. The sample consisted of fifty male and fifty female athletes.

C. Instruments and Data Collection

The data were collected using a structured questionnaire, an injury assessment form, interviews with coaches and physical education teachers, and through sports and medical records. The study's metrics include a section in which participants complete a questionnaire capturing information on their demographics, sports experience, training load, injury history, injury causes, rehabilitation, and injury-prevention awareness.

D. Statistical Analysis

Descriptive and inferential statistics were applied to the collected data after categorization, coding, and tabulation. The data were summarized using frequencies, percentages, mean, and standard deviation. An independent-samples t-test for differences in injury scores, a Chi-square test for associations, and a Pearson's correlation coefficient were employed. A p-value of 0.05 was used to determine significance.

IV. RESULTS & DISCUSSION

A. Participant Distribution

TABLE I
DISTRIBUTION OF PARTICIPANTS BY GENDER

Gender	Number (N)	Percentage (%)
Male	50	50.0
Female	50	50.0
Total	100	100.0

Interpretation: The sample comprised 100 college athletes, 50 male and 50 female. Equal representation supported an unbiased comparison.

B. Types of Sports Injuries

TABLE II
TYPES OF SPORTS INJURIES AMONG COLLEGE ATHLETES

Injury Type	Frequency	Percentage (%)
Ankle sprain	32	32.0
Knee injury	24	24.0
Muscle strain	18	18.0
Shoulder injury	12	12.0
Fracture	8	8.0
Others	6	6.0
Total	100	100.0

Interpretation: Ankle sprains (32%) were the most common injuries, followed by knee injuries (24%) and muscle strains (18%). Shoulder injuries and fractures were less common.

C. Gender-Based Injury Scores

TABLE III
COMPARISON OF INJURY SCORES BETWEEN MALE AND FEMALE ATHLETES

Group	N	Mean	SD	t	p
Male	50	3.42	1.12	—	—
Female	50	3.78	1.05	1.87	0.064

Interpretation: Female athletes showed a slightly higher mean injury score than male athletes; however, the difference was not statistically significant ($p > 0.05$).

D. Training Intensity and Injury Occurrence

TABLE IV
RELATIONSHIP BETWEEN TRAINING INTENSITY AND SPORTS INJURIES

Training Intensity	Injured	Not Injured	Total
Low	10	15	25
Moderate	21	19	40
High	30	5	35
Total	61	39	100

The chi-square statistic was 14.72 with $p = 0.001$.

Interpretation: A significant association was found between training intensity and sports injuries. Athletes with high training intensity reported more injuries.

E. Awareness of Injury Prevention

TABLE V
AWARENESS OF INJURY-PREVENTION TECHNIQUES

Awareness Level	Frequency	Percentage (%)
High	38	38.0
Moderate	42	42.0
Low	20	20.0
Total	100	100.0

Interpretation: Most athletes had a moderate level of awareness regarding injury prevention, whereas 20% had low awareness.

F. Awareness and Injury Occurrence

TABLE VI
CORRELATION BETWEEN AWARENESS AND INJURY OCCURRENCE

Variables	Correlation (r)	p-value
Awareness vs. injury occurrence	-0.46	0.001

Interpretation: A moderate negative correlation was observed, with greater awareness of injury prevention associated with fewer injuries.

G. Protective Equipment

TABLE VII
EFFECT OF PROTECTIVE EQUIPMENT ON
SPORTS INJURIES

Use of Equipment	Mean Injury Score	SD	t	p
Regular users	2.94	0.96	—	—
Irregular users	4.11	1.18	4.68	0.001

Interpretation: Athletes who regularly used protective equipment experienced significantly fewer injuries than those who used it irregularly.

H. Warm-Up Practices

TABLE VIII
EFFECT OF WARM-UP PRACTICES ON
INJURY OCCURRENCE

Warm-Up Practice	Mean Injury Score	SD	t	p
Regular warm-up	2.87	0.89	—	—
Irregular warm-up	4.26	1.14	5.12	0.001

Interpretation: Athletes who performed regular warm-up exercises had significantly lower injury scores than those who skipped warm-ups.

V. DISCUSSION

Collegiate athletes commonly face sports injuries as per the findings, particularly among athletes who indulge in heavy training or competitive sports. The ankle and knee are subjected to high levels of stress from running, jumping, and sudden changes in direction; thus, lower-limb injuries are common.

As illustrated by Table 1, the mean injury score was higher for female athletes (3.78 ± 1.05) as compared to that of the male athletes (3.42 ± 1.12). However, the difference was not significant ($t=1.87$, $p=0.064$). The chi-square test indicated the relationship between the intensity and incident injury was significant. As awareness increases, injury incidence will decrease. Thus, the incidence of injury negatively correlates with awareness, as shown by the Pearson correlation.

Frequent warm-up and regular use of protective equipment were associated with a lower incidence of

injuries. The results of the research coincide with previous studies that focus on proper functional training, appropriate recovery, injury-prevention education, workload control, and appropriate protective equipment [2], [7]. The implementation of evidence-based preventive measures can significantly reduce the risk of sports injuries in collegiate settings.

VI. CONCLUSION

Injuries to college athletes are common in sports; the three most common injuries are ankle sprains, knee injuries, and muscular strains. The risk of injury is increased due to high-intensity training, lack of warm-up, and ignorance. Injury occurrence can be reduced effectively by regular warming up, appropriate use of protective equipment, scientific training, and greater awareness. The overall injury score was similar between genders; however, prevention should not be neglected for any athlete. Colleges must initiate evidence-based injury-prevention programs to promote athletes' safety, health, and performance.

REFERENCES

- [1] R. Bahr and T. Krosshaug, "Understanding injury mechanisms: A key component of preventing injuries in sport," *British Journal of Sports Medicine*, vol. 39, no. 6, pp. 324–329, 2005, doi: 10.1136/bjsm.2005.018341.
- [2] T. J. Gabbett, "The training–injury prevention paradox: Should athletes be training smarter and harder?" *British Journal of Sports Medicine*, vol. 50, no. 5, pp. 273–280, 2016, doi: 10.1136/bjsports-2015-095788.
- [3] T. E. Hewett, S. L. Di Stasi, and G. D. Myer, "Current concepts for injury prevention in athletes after anterior cruciate ligament reconstruction," *The American Journal of Sports Medicine*, vol. 41, no. 1, pp. 216–224, 2013, doi: 10.1177/0363546512459638.
- [4] W. H. Meeuwisse, H. Tyreman, B. Hagel, and C. Emery, "A dynamic model of etiology in

- sport injury: The recursive nature of risk and causation,” *Clinical Journal of Sport Medicine*, vol. 17, no. 3, pp. 215–219, 2007.
- [5] M. Mountjoy, J. Sundgot-Borgen, L. Burke, et al., “IOC consensus statement on Relative Energy Deficiency in Sport (RED-S): 2018 update,” *British Journal of Sports Medicine*, vol. 52, no. 11, pp. 687–697, 2018.
- [6] J. W. Orchard, “Orchard Sports Injury Classification System (OSICS),” *Clinical Journal of Sport Medicine*, vol. 17, no. 3, pp. 201–204, 2007.
- [7] T. Soligard, G. Myklebust, K. Steffen, et al., “Comprehensive warm-up programme to prevent injuries in young female footballers: Cluster randomised controlled trial,” *BMJ*, vol. 337, Art. no. a2469, 2008, doi: 10.1136/bmj.a2469.
- [8] W. Van Mechelen, H. Hlobil, and H. C. G. Kemper, “Incidence, severity, aetiology and prevention of sports injuries: A review of concepts,” *Sports Medicine*, vol. 14, no. 2, pp. 82–99, 1992.
- [9] J. G. P. Williams and P. N. Sperryn, *Sports Medicine*. London, U.K.: Edward Arnold, 1976.
- [10] World Health Organization, *WHO Guidelines on Physical Activity and Sedentary Behaviour*. Geneva, Switzerland: World Health Organization, 2020.