

COMMON SPORTS-RELATED INJURIES AND THE EFFECTIVENESS OF REHABILITATION IN THE PREVENTION OF REOCCURRENCE

Oluwole Abimbola, Tyler Bowling , Bahadir Edizer, Heather Kunze, John Thistlethwaite

Department of Biology, Ohio Dominican University, Columbus, OH

abimbolo@ohiodominican.edu, bowlingt@ohiodominican.edu, bahadir.edizer@zirve.edu.tr,
kunzeh@ohiodominican.edu, thistlej@ohiodominican.edu

Abstract: Injuries among student athletes are a major concern, especially when the prevalence of injury is high among load-bearing sports (e.g. basketball, volleyball, football, soccer). The purpose of this study was to determine the most common injuries among college-aged individuals that participated in load-bearing sports, to determine the most common method of treatment/rehab for these injuries, and the prevalence of reoccurrence. We hypothesized that ankle and knee injuries would be the most prevalent type of injury with electric stimulation and bracing as the most common form of treatment. Also, we precluded that higher reoccurrence in ankle injuries would predominate over other reoccurrence injuries.

Data collected through a survey showed that the most common injuries were to the lower extremities, which accounted for 21% of our findings with ankle injuries (ankle sprains) being the most common. However, 41% of athletes still had reoccurrence injury to the ankle following treatment. We conclude that while ankle injuries are among the most prevalent injuries among college-aged athletes, further studies are warranted to determine an effective treatment for these injuries in the prevention of injury reoccurrence.

Keywords: Rehabilitation, Sports related injuries.

INTRODUCTION

In recent years, more focus has been given to sport-related injuries, particularly in lower extremities, which can be attributed to the types of movement, frequency of participation, and intensity of the sport (Agel et al., 2007; Sharpe et al., 1997).

According to the National Collegiate Athletic Association (NCAA), injury surveillance data for women's basketball indicated the most common sports-related injuries were to the lower extremities. Specifically, more than 60% of all game and practice injuries were to the lower extremity including ankle, knee, and upper leg muscle injuries (Agel et al., 2007). In addition, studies pertaining to female soccer players reported that ankle injuries (i.e. ankle sprains) were among the most common impairments at the collegiate level (Sharpe et al., 1997; Elkstrand and Tropp, 1990; Garrick and Requa, 1973; Knapik et al., 1991). Based on previous studies, individuals that experience ankle sprains are more likely to endure reoccurrence (Elkstrand and Tropp, 1990; Garrick and Requa, 1973; Jones et al., 1993; Milgrom et al., 1991).

PURPOSE AND HYPOTHESIS

The purpose of this study is to: i) determine the most prevalent sports-related injuries and the most common form of treatment for these injuries and ii) determine the most common modality of treatment and its effectiveness in preventing re-injury.

Based on previous studies, we hypothesized that ankle and knee injuries would be the most frequent type of injury with electric stimulation and bracing as the most common form of treatment. In addition, we hypothesized that ankle injuries lead to a higher rate of reoccurrence compared to other injuries.

METHODS

Experimental Protocol

84 student athletes of the Ohio Dominican University male and female basketball and soccer teams were asked to participate in a survey questionnaire regarding past injuries.

Experimental Measurement and Data Collection

Each team was given a survey questionnaire proctored by a co-investigator involved in the study.

The purpose of the study, the details of the survey, and information of the right to refuse participation was explained to each subject.

Those who chose to participate signed a form of consent and all data was kept in a locked cabinet accessible only to the co-investigators of the study. The study was approved by the Ohio Dominican University Institutional Review Board and complied with the regulations and rules set forth by the Declaration of Helsinki.

Each survey included information regarding: type of sport, position of the athlete, years of participation at the collegiate level, past injuries (upper and lower extremity), treatment for those injuries, and any record of reoccurrence based on modality of treatment and/or rehab.

RESULTS

Table 1 – Survey response of all reported sports injuries and applied methods of treatment.

Injuries							
Treatment	Ankle Sprain	Hamstring	Groin	Shin Splits	Knee	Concussion	Total # of Athletes
Surgery	0	0	0	0	4	0	4
Cast	2	0	0	0	0	0	2
Brace	7	0	0	0	4	0	11
Sling	0	0	0	0	0	0	0
Rehab	1	2	0	0	5	0	8
Chiropractor	0	0	0	0	1	0	1
Ultrasound	3	4	1	1	4	0	13
Electric Stimulation	9	4	1	1	4	0	19
Rest	6	2	1	1	4	0	14
Functional Bracing	3	0	0	0	3	0	6
Cortisone Shots	0	0	0	0	1	0	1
Anti-inflammatory	2	1	0	1	3	0	7
Pain medication	1	1	0	1	3	0	6
Ice	2	1	1	0	1	0	5
Muscle Relaxants	0	2	3	1	0	0	6
None	1	0	0	0	0	0	1

Table 2 – Most common reported injuries and prevalence for each sport.

	Men's Soccer	Men's Basketball	Women's Soccer	Women's Basketball
Ankle Sprain	7	9	8	3
Hamstring	1	3	3	0
Groin	3	1	1	0
Shin Splits	1	0	5	1
Knee	4	3	4	3
Concussion	4	0	2	2

Table 3 – Number of post-rehabilitation reoccurrence injuries for each sport.

	Men's Soccer	Men's Basketball	Women's Soccer	Women's Basketball
Ankle Sprain	4	3	4	0
Hamstring	1	0	0	0
Groin	0	0	0	0
Shin Splits	0	0	1	0
Knee	1	0	0	0
Concussion	2	0	0	1

Figure 1 – Most prevalent load-bearing sport-related injuries among college-aged women’s and men’s basketball and soccer teams.

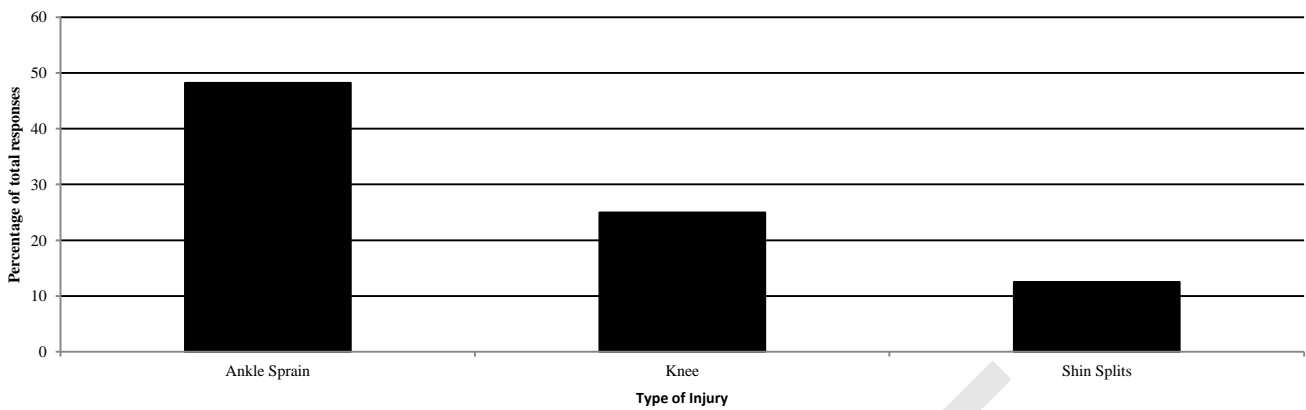


Figure 2 – Most common methods of treatment for all injuries among college-aged women’s and men’s basketball and soccer teams.

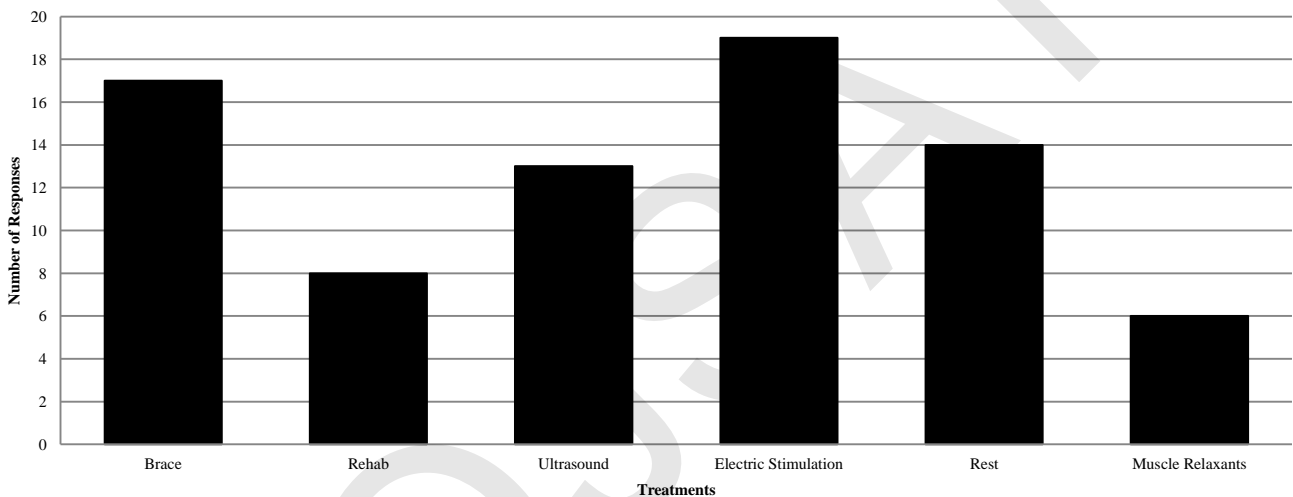


Figure 3 – Most common methods of treatment for ankle sprains among college-aged women’s and men’s basketball and soccer teams.

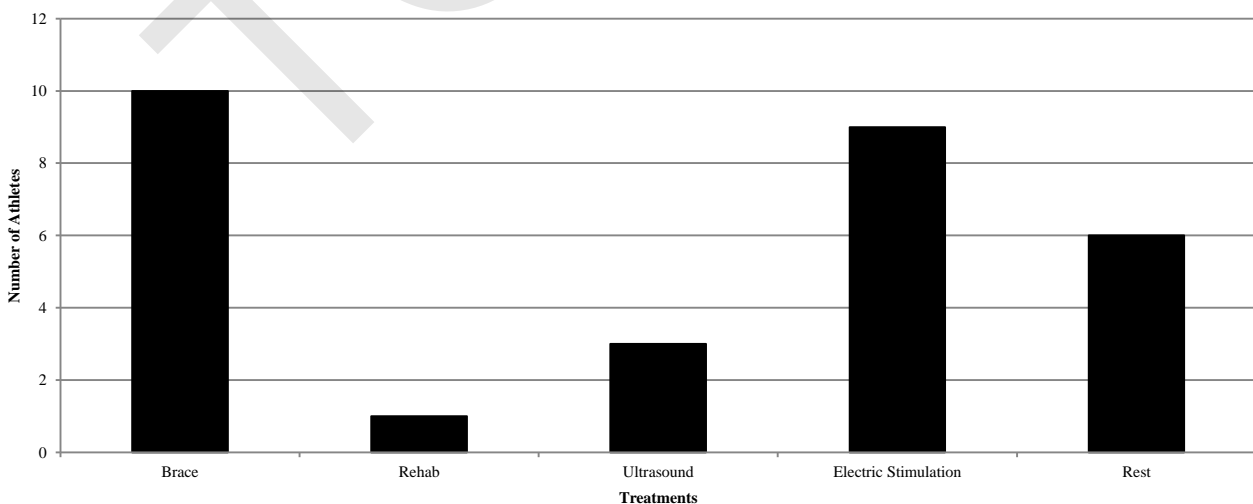
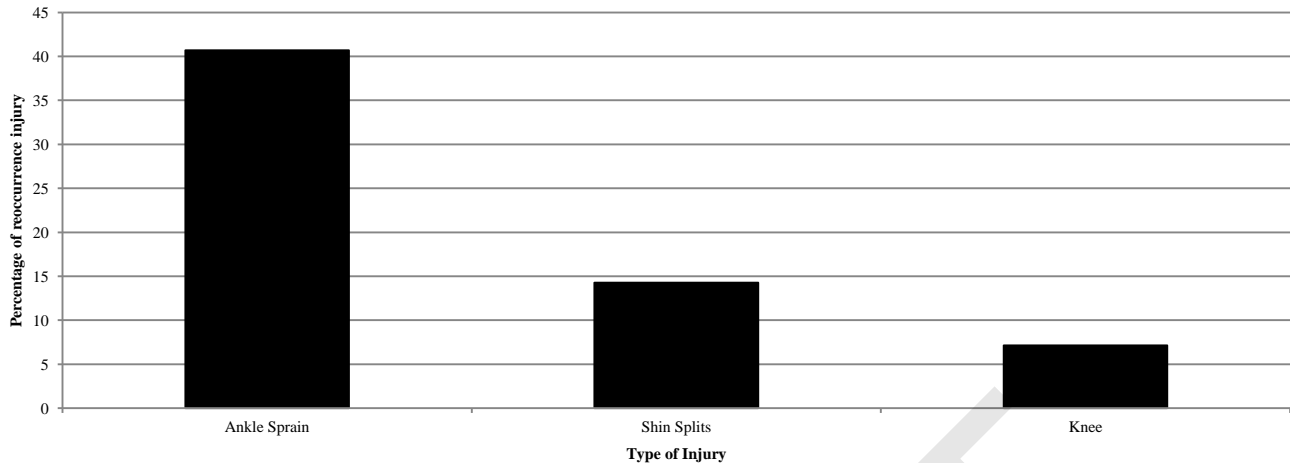


Figure 4 – Most prevalent post-rehabilitation reoccurrence injuries among college-aged women's and men's basketball and soccer teams.



SUMMARY OF RESULTS

The most common sports-related injuries, by percentage, were ankle sprains, knee injuries, and shin splits. The most common injuries were to the lower extremities, which accounted for 21% of our findings. In particular, ankle injuries (ankle sprains) were the most common type of injury. Bracing, electric stimulation, rest, and ultrasound were among the most common forms of treatment. 41% of the athletes still had reoccurrence injury to the ankle following treatment.

CONCLUSIONS

Based on the present study, ankle injuries are among the most prevalent injuries among college-aged athletes participating in load-bearing sports. Electric stimulation is the least effective treatment in rehabilitation of ankle sprains in preventing reoccurrence.

LIMITATIONS

Data obtained from subjects that did not fill out the survey in accordance to the directions were excluded from the study. While we understand this is a survey, all subjects were informed that all responses had to be completed to the best of their knowledge. While the data was collected from ODU women's and men's basketball and soccer teams, a larger pool of athletes would ensure more definitive findings as to injuries and treatments.

FUTURE STUDIES

Future studies would include surveying a larger pool of athletes over a wide range of sports. One possible study would be to survey NCAA athletes preceding their season. Additional studies could focus on discrepancies between gender-related injuries. Other research can focus on the effects of various playing surfaces on sports-related injuries.

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