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Research Article

A Retrospective Observational Report of Amateur Female Youth Volleyball Athletes (2022), Postliminary to the COVID-19 Pandemic Apogee

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Abstract

On Memorial Day weekend of 2022, after having no sporting event for 2 years, 1800 to 2000 athletes gathered at Emerald City Classic Invitational volleyball tournament in Seattle, Washington, USA. Providers from the Integrative Medicine Group (IMG, a non-profit group, and student volunteers from Bastyr Sports Medicine Club provided young athletes with treatment and case management. The following procedures were utilized: concussion assessment and management, fracture assessment, small joint dislocation assessment and management, hypoglycemia management, injury prevention with athletic taping, Kinesiology taping, evaluation of soft tissue injury, soft tissue release, joint manipulation, and counseling. A total of 155 athletes were assessed and treated over 3 days.

IMG was prepared to provide more care and management than before COVID-19 due to concerns about increased injuries with runners who self-reported a diagnosis of COVID-19 [2] and increased muscle strain after a SARS-CoV-2 infection [3].

Retrospective analysis results show no significant increase in the total number of athletes' treatments compared to 2019, before the COVID pandemic.

Keywords: *Sports Medicine; Kinesiology Taping; Integrative Medicine; Post-COVID; Volleyball*

Abbreviations

CITI: Collaborative Institutional Training Initiative; HVLA: High-Velocity Low-Amplitude; IMG: Integrative Medicine Group; MET: Muscle Energy Technique; SCAT5: Sport Concussion Assessment Tool-5

Introduction

Before COVID, in 2019, 232 teams with over 2500 athletes attended The Emerald City Classic Invitational Volleyball Tournament. More than 450 treatments were provided by a medical, consisting of physicians from IMG and Bastyr Sports Medicine Club volunteers. In 2022, on May 28, 29, and 30, the Emerald City Classic Invitational Volleyball Tournament was held at the indoor gym located at the University of Washington, Seattle, after several years without tournaments due to the COVID pandemic.

A medical team with physicians from the Integrative Medicine Group (IMG) and volunteers from Bastyr Sports Medicine Club provided treatments to all athletes who needed care at the first aid medical station.

After two years of no tournaments or recreational play due to COVID, physicians from IMG had concerns for athletes' health due to possible post-COVID syndrome, symptoms, and the potential for an increase in injuries due to a lack of practice and training. COVID history was not asked during any intake or treatment.

The goal of a medical team was to minimize injury, assess injuries or medical conditions, make appropriate referrals, and plan that all athletes play their best.

Post-tournament, the treatment information was analyzed by body regions treated, types of treatments administered, the number of treatments each day of the tournament, the age group, and body regions (treated by age group).

Methods

There were 21 volleyball courts in total, located in multiple buildings. IMG set up a first aid station and multiple treatment tables at the Dempsey Indoor building.

Health care providers from IMG and student volunteers from Bastyr University Sports Medicine Club provided care from 6:00 a.m. until 9:30 p.m. All providers were trained with the Safe Sports® training [1], and physicians who collected treatment information have completed the Collaborative Institutional Training Initiative (CITI) training.

Treatment information—regarding body regions of complaint, methods of treatment concerning athletic taping, Kinesiology taping, Muscle Energy Technique (MET), soft tissue release, concussion assessment using the Sport Concussion Assessment Tool-5 (SCAT5), high-velocity low-amplitude (HVLA) joint manipulation, and first aid—was collected each day (after athletes had signed the consent form of treatment). When an injury was assessed and determined to be a possible fracture, the athlete was sent for diagnostic x-rays.

Results

The total number of athletes treated was 155 over 3 days (day 1 was 38, day 2 was 33, and day 3 was 84). Information was collected to determine how many athletes received repeated treatments to follow the care. Fifty-eight athletes received repeated care. The breakdown of the total number of treatments provided for the 213 athletes receiving care over the 3 days was as follows: day 1 was 40 athletes, day 2 was 53, and day 3 was 120 (Figure 1).

Injury related to body region shows more care was provided to lower extremities such as ankle and knee on day 1. On day 3, the most prevalent injuries were hamstring, shoulder, knee, and back injuries. Care consisted of athletic and Kinesiology taping techniques and therapies to address soft tissue care (Figures 2 and 3). Out of seven treatment categories, athletic tape, Kinesiology tape, and soft tissue release were most provided throughout the event (Figure 3).

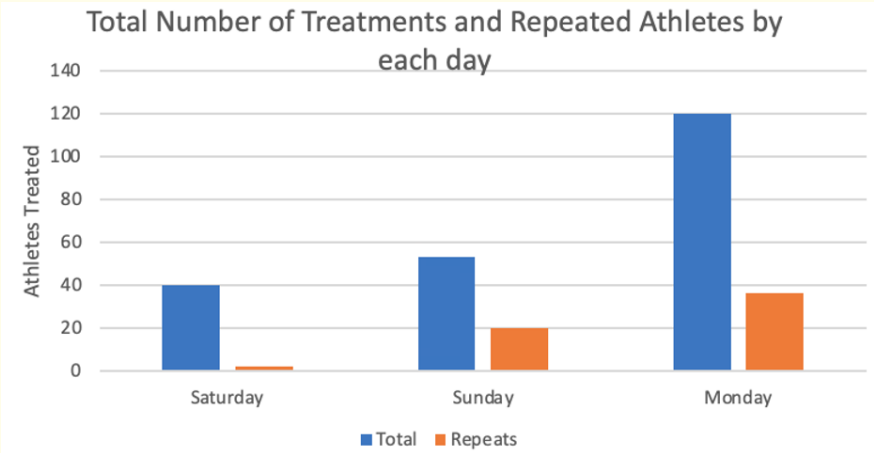

Figure 1: *Total number of treatments provided and number of repeated athletes who received treatment by each day.*

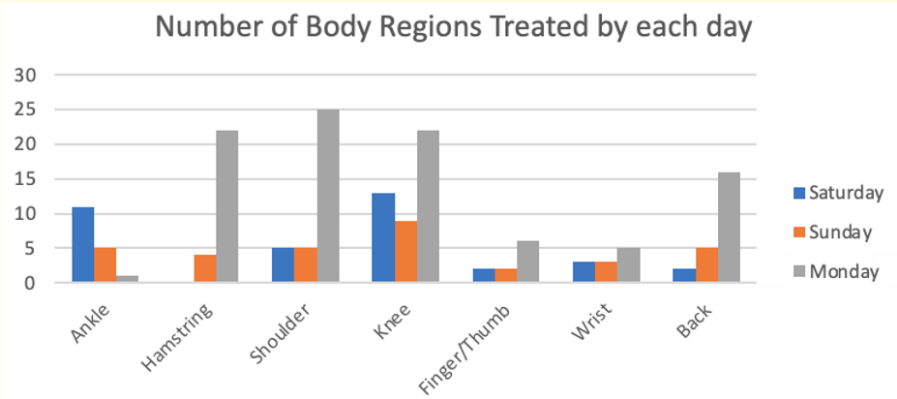

Figure 2: *Number of body regions treated by each day.*

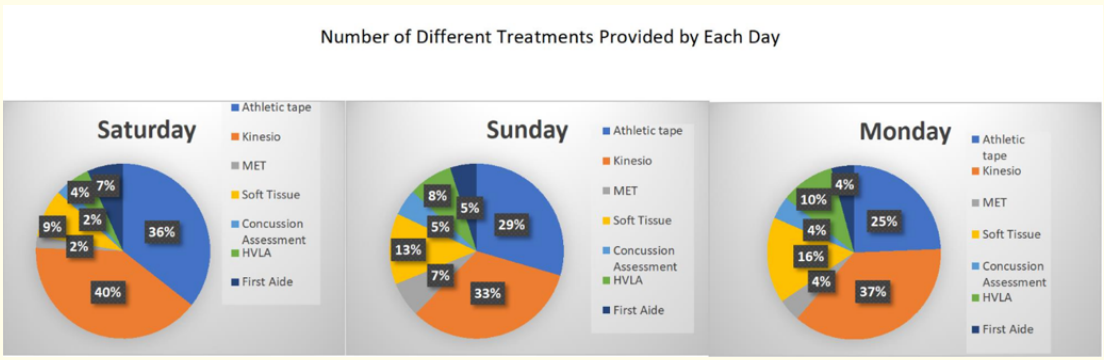

Figure 3: *Number of different treatments provided by each day.*

Age group distribution shows that all three groups increased the number of treatments on day 3, especially the 17 - 18 group (Figure 4).

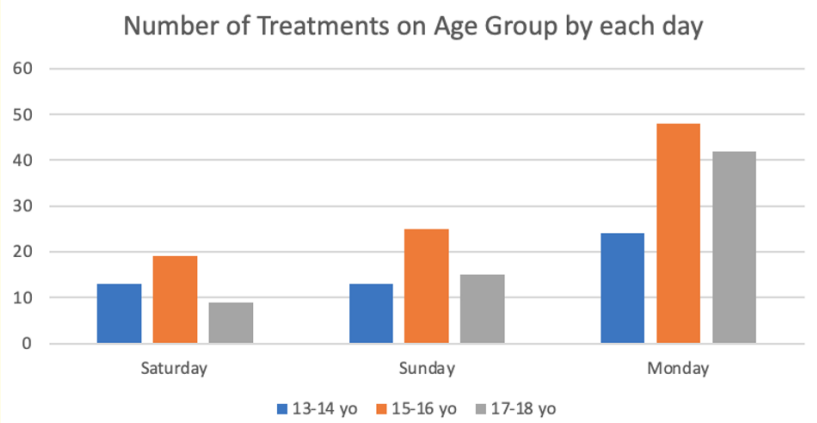

Figure 4: *Number of treatments on age group by each day.*

The most treated areas in all age groups were the ankle, shoulder, and knee (Figure 5).

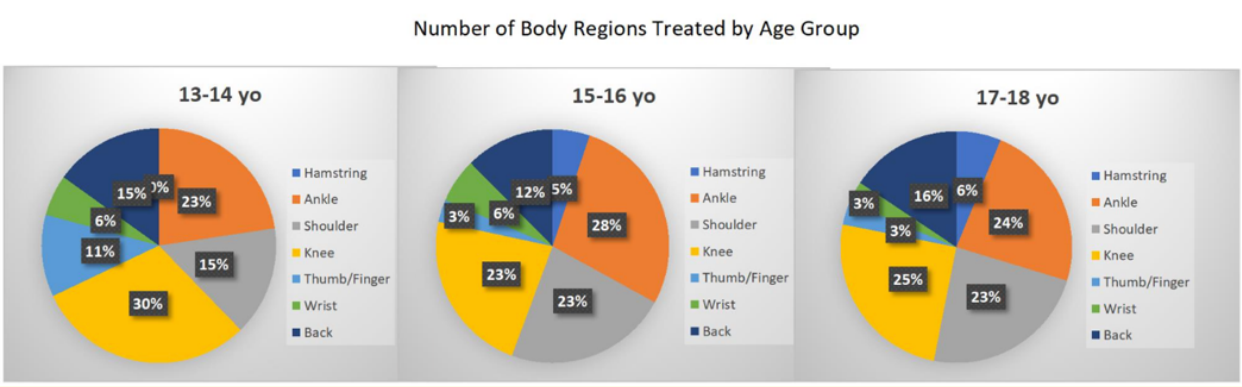

Figure 5: *Number of body regions treated by age group.*

Conclusion

During day 1, the focus on prevention and use of athletic and Kinesiology tape was high. Athletes were probably experiencing musculoskeletal fatigue on day 3. Hamstring, knee, and back care was provided more, along with soft tissue care and Kinesiology taping. By

day 3, more treatments were delivered across all age groups. The possible reason for the increased number of treatments on day 3 could be because athletes were tired, as expressed by the athletes themselves. Further investigation of athletes' energy levels each day would determine the correlations.

There was concern about athletes after COVID; however, no significant injuries arose except 2 ankle fractures and a total of 9 concussion assessments. Concussion needs further investigation by following athletes for possible post-concussion syndrome and return to play schedule.

Conflict of Interest Statement

The authors declare that this paper was written without any commercial or financial relationship that could be construed as a potential conflict of interest.

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