

## REVIEWS & REPORTS

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## 2<sup>nd</sup> International Congress on High Performance Sports: a report on martial arts and combat sports

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### Abstract

**Introduction.** Martial arts and combat sports are practiced by thousands of people around the world and increasingly discussed in scientific publications.

**Material and Methods.** We describe an observational case study by describing and analyzing the activities of the *II International Congress on High Performance Sports*, an event hosted by Universidad Santo Tomas and the *High Performance Center*, Government of Chile.

**Results.** Three of the 15 plenary conferences and one of the 16 workshops focused on martial arts and combat sports.

**Conclusions.** The conference was attended by four professionals from martial arts and combat sports, of note was the presence of Dr. Emerson Franchini. This shows that applied science in martial arts and combat sports is gaining traction within scientific events in the Chilean context, allowing the scientific community to learn about advances related to performance in combat sports.

### Introduction

Martial arts and combat sports have reached an important worldwide development, being considered a relevant form of cultural expression [Perez-Gutierrez *et al.* 2017]. In the scientific sphere, during the last decades, there have been an increasing number of academic publications related to martial arts and combat sports [Peset *et al.* 2013; Perez-Gutierrez *et al.* 2017], specific journals devoted to this area (i.e. *Ido Movement for Culture. Journal of Martial Arts Anthropology*; *Archives of Budo*; *Revista de Artes Marciales Asiaticas*), and also scientific events (i.e. *World Congress of Combat Sport and Martial Arts*; *First International Symposium Science in Judo*; *I Symposium of Elite Performance in Combat Sports*).

The most important scientific event related to martial arts and combat sports is the *World Scientific Congress of Combat Sports and Martial Arts*, organized by The *International Martial Arts and Combat Sports Scientific*

*Society*, which will hold the 4<sup>th</sup> edition in October 2018 [Sieber, Cynarski 2018]. There are other international events, for example, *The Annual Meeting of the Budo Academy*, organized by the *Japanese Academy of Budo* [Sieber, Cynarski 2018]. In South America, the *Encontro Nacional de Artes Marciais e Esportes de Combate* held in Brazil, has had four editions [ENAMEC 2017] and in Chile *Martial Arts and Combat Sports: Science, Research and Culture* was an event held in 2016 [Herrera-Valenzuela, Valdes-Badilla 2017]. There are also events of particular disciplines, such as the *International Symposium Science in Judo*, organized by the Department of Health Psychology of the University Miguel Hernandez of Elche, held in Spain in May 2017 [Cubo, Carretero 2017]. As we can see, martial arts and combat sports scientific meetings are being held worldwide, and this makes it possible for martial arts and combat sports researchers to travel, meet and learn directly from colleagues. This phenomenon has been widely studied by

Cynarski, using the concepts of “scientific tourism” and “martial arts tourism” [Cynarski, Swider 2017; Cynarski, Kubala 2017; Cynarski 2017, Cynarski 2018].

Recently, the Universidad Santo Tomas (Chile) and the High Performance Center (Government of Chile) organized the *II International Congress on High Performance Sports* [CIARD 2017]. The event took place on December 1st and 2nd, 2017, and martial arts and combat sports were a focus of presentations. There were three plenary conferences that dealt with topics related to martial arts and combat sports, as well as a workshop. The objective of this event was to train undergraduate and post-graduate students, academics and professionals on topics focused on sport sciences, taking advantage of the country’s main sports infrastructure.

## Development

Day 1. Plenary conferences: On December 1<sup>st</sup>, 150 participants attended 15 oral presentations of between 15 and 30 minutes in length with five minutes for questions. Three of these plenary sessions were related to martial arts and combat sports.

The first was titled “Temporary structure in combat sports” and was presented by Dr Emerson Franchini, a leading academic in the field of martial arts and combat sports working at the University of Sao Paulo (Brazil). The workshop offered valuable information on the analysis of movement time and the differences between various

combat sports, emphasizing the importance of basing training on the temporary structure of each sport, scientific evidence and providing practical examples.

The second conference called “Taekwondo and its scientific production: bibliometric data” was presented by Prof. Pablo Valdes-Badilla, an academic of the Universidad Autonoma de Chile (Chile). Valdes-Badilla presented the important evolution that taekwondo has shown since its inclusion as an Olympic sport. He also discussed the main areas, disciplines and topics that have been studied and published in scientific journals available on the Web of Science, patterns and networks of collaboration between the most productive authors, and the journals most used to disseminate work. The speaker highlighted the sports approach to research and raised the question of the possible relationship between the scientific productivity of a country and its sporting results in taekwondo.

Finally, the third conference “Applied physiology in combat sports: methodology and science” was presented by Dr. Tomas Herrera-Valenzuela from the Universidad de Santiago de Chile (Chile) and the Universidad Santo Tomas (Chile), and Prof. Mauricio Saez-Fuentes, a combat sports methodologist at the High Performance Center. The presenters discussed the physical and physiology profile of Olympic combat sports and showed the organizational structure of the center in order to illustrate how it supports the national team of each combat sport in Chile.

In addition, five scientific posters related to martial arts and combat sports were presented: 1) “Can simulation tasks reproduce the physiological response of a taekwondo match?”, 2) “Physical and physiological profile of elite Chilean amateur boxers”, 3) “Special Wrestling Fitness Test in Olympic wrestling athletes”, 4) “Physiological responses of elite karate athletes during simulated competition: a study with the new Olympic categories for Tokyo 2020”, 5) “Speed of movement, mechanical power and percent of a maximum repetition in rowing pull of selected national judo”. All scientific posters that related to martial arts and combat sports had athletes from the national team of Chile conducting demonstrations. All measurements were conducted by research staff from the center.

Day 2. Workshops: On December 2nd, sixteen, 3-hour practical workshops were held at the High Performance Center. Approximately 80 people participated. One workshop by Dr. Emerson Franchini, “The evaluation in combat sports”, offered a wide range of specific measurements for combat sports, focusing mostly on judo trials (i.e. Special Judo Fitness Test, dynamic and isometric judogi chin-up) and taekwondo (i.e. Frequency Speed of Kick Test) that are easy to apply and with widespread use in the international scientific literature. In addition, Dr. Franchini explained some general tests using jump platforms and dynamometers for use



**Photo 1.** Evaluation of combat sports workshop: (from left to right) Emerson Franchini and Mauricio Saez-Fuentes.

in martial arts and combat sports athletes, such as the countermovement jump, the squat jump and hand grip strength.

## Conclusions

The 2<sup>nd</sup> International Congress on High Performance Sports informed students, academics and professionals on advances in sport sciences, especially in topics related to martial arts and combat sports. While several scientific events on martial arts and combat sports are usually held worldwide each year, it is not easy for active researchers to participate in all of them due to time and funding constrains, therefore, it is important that the synergy between dissemination and research continues.

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## II Międzynarodowy Kongres Sportów Wyczynowych: raport na temat sztuk walki i sportów walki

**Słowa kluczowe:** kongres, sztuki walki, sporty walki, wydarzenia naukowe, badania naukowe, szkolenia

### Abstrakt

Tło. Sztuki walki i sporty walki są uprawiane przez tysiące ludzi na całym świecie i coraz częściej są omawiane w publikacjach naukowych.

Materiał i metody. Niniejsza praca stanowi obserwacyjne studium przypadku, w którym autorzy opisują i analizują działania II Międzynarodowego Kongresu Sportów Wyczynowych, którego gospodarzem był Uniwersytet Santo Tomas i Centrum Sportów Wyczynowych, a także rząd Chile.

Wyniki. Trzy z 15 plenarnych sesji konferencyjnych i jeden z 16 warsztatów poświęcone były sztukom walki i sportom walki. Wnioski. W konferencji udział wzięli czterej specjaliści z dziedzin sztuk walki i sportów walki, na uwagę zasługuje w szczególności obecność doktora Emersona Franchini. Pokazuje to, że nauka stosowana w sztukach walki i sportach walki zyskuje popularność w wydarzeniach naukowych w kontekście chilijskim, umożliwiając społeczności naukowej poznanie postępów w zakresie sportów walki.