

Original article

## Referring to judo's sports injuries in São Paulo State Championship

### Bilan des accidents de sport relevés lors du championnat de judo de l'État de São Paulo

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Received 12 February 2005; accepted 10 June 2006

Available online 18 July 2006

#### Abstract

*Objective.* – In a pioneer way, we investigated the morbidity of sports injuries referred by judo athletes from São Paulo State Championship.

*Material and methods.* – Data collection from 93 senior judokas in State of São Paulo Judo Championship, through Referred Morbidity Inquiry about last year.

*Results.* – One hundred and ten events were registered with a distribution frequency gradient of sprain > contusion > strain > ligament injury > partial and total dislocation. The most injured body areas were: knee (26.3%), shoulder (21.8%), fingers (17.3%), and ankle (10.0%). The most risky situation was when the athlete was training (standing, applying a blow) and it can be explained by the frequent and unprepared exposition of the athletes. Yearly lesion rate was 1.18 injuries per athlete/year.

*Conclusion.* – Sprains constitute the most common judo injury, and athletes are more susceptible when they apply blows; discussion about the direction that the prevention should be applied remains opened.

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#### Résumé

*Objectifs.* – Évaluation de la morbidité des lésions relevées lors du championnat de dommages de judo de l'État de São Paulo.

*Matériel et Méthodes.* – Les données ont été recueillies dans une cohorte de 93 judokas seniors au cours du championnat de judo de l'État de São Paulo pour l'année dernière.

*Résultats.* – Cent dix événements ont été enregistrés, concernant par ordre de croissance, les entorses, contusion, distension, lésion ligamentaire, luxation, subluxation. Les secteurs corporels les plus touchés sont : le genou (26,3 %), l'épaule (21,8 %), les doigts (17,3 %), et la cheville (10,0 %). La situation présentant le risque le plus élevée est celle où l'athlète, en position verticale, applique un coup. Le taux annuel de lésion était de 1,18 par athlète par année.

*Conclusion.* – Les entorses constituent les lésions de judo les plus communes, et les athlètes sont plus vulnérables quand ils appliquent des coups. La discussion devrait permettre de définir des priorités en vue d'une prophylaxie de ces accidents.

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*Keywords:* Athletic injuries; Martial arts; Morbidity

*Mots clés :* Accidents sportifs ; Arts martiaux ; Morbidité

#### 1. Introduction

Sports practice is inevitably associated with sports injuries (SI). On one hand, it is stressed that physical exercise shall be a

part of daily activities, and that this is highly stimulating for young people and adults; and on the other hand, SI constitute an undesirable side effect related to its practice, both moderate and intense [2].

Judo constitutes a situation of differentiated interest to be analyzed from this perspective: at a general level it concerns a modality that, managed under a humanistic and disciplinary ideology, has become an instrument of large profit interest; it

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consists specifically of an individual competitive practice, highly featured by direct and continuous body contact [22].

Japanese immigrants have brought judo to Brazil and it was rapidly absorbed for bellicose purposes, getting to the Military Academy and to the Army, through its dean among us, Mitsuyo Maeda, also known as Count Koma. In 1954 the first domestic championship was organized in our country and 10 years after that, judo was included in Tokyo's Olympic games. Nowadays, there are more than 250 thousand athletes affiliated to 21 existing state federations [4].

On the other hand, literature, even being scarce, has depicted moments where SI have played a standing role in the modality. It is not rare to be in contact with stories about fighters that did not give up even being injured. An example of this is Brazilian athlete Hikari Kurachi, who participated in the Pan-American Championship final in 1956 and became the champion, even with arm ligaments ruptured [18].

Skill level has been suddenly increasing together with frequency and seriousness of injuries [17]. Sterkowicz [22] indicates that unexpected attacks can provoke body damages, mainly occurring during throwing and falling, mainly on back-sacrum region. Substantially, on thumbs, sub-dislocation on metacarpus-phalanges articulations is provoked by hyperabduction [1].

Some studies point out that lower limbs are more common sites of injuries (38.6%) and that upper limbs have 37.6% frequency [14]. Haapasalo et al. [10] have noticed that 15% of all events affect knee structure.

Among combat sports, judo presented the highest injuries/exposure ratio, 2.2, followed by wrestling, 1.8. Although in martial arts the SI ratio is 22.3/1000 [15], specifically in judo it is 182/1000 [14].

Literature points out that practice-related losses generally present light or moderate seriousness; however authors have described a brain deficit provoked by anoxia [18] and cases of deaths in judo, by choke holds, were divulged [13].

From what was exposed, present project's purpose was to get acquainted with some judo Sports Injuries features, from the realities reported by modality athletes that participating of a recent state championship in São Paulo State, Brazil.

## 2. Material and methods

Data collection was carried out within Esporte Clube Corinthians facilities, with the presence of athletes participating in State of São Paulo Judo Championship, carried out in the City of São Paulo. 93 judokas ( $27.8 \pm 7.7$  years) from senior category (more than 21 years old), from all weight categories, were interviewed.

To record information obtained, only a referred morbidity inquiry (RMI) protocol was adopted, adapted from the one formulated by Ghirrotto et al. [9], in another project developed within the Collective Health/Epidemiology and Physical Activity Group – UNICAMP, and applied directly to athletes. Such procedure allows recovery of information concerning occurred injuries. Although its application for more than two weeks had

been previously contradictory, essays have efficiently carried a significant coincidence ( $P < 0.0001$ ) between athletics competitors' medical records and RMI [19].

Application of RMI, authorized by the State of São Paulo Judo Federation, was carried out through direct approach to athletes, which were filled with the support of one of authors (MS), if required, during the weighing phase, before competition beginning. Twelve-month record was requested. In general, judokas had no difficult to answer the questions and several times, they were interested by survey final results.

## 3. Results

Referring to practice experience, most of athletes featured an early beginning and duration exceeding 10 years; the lower frequency was situated below 5 years (7.53%) and the higher within a 10–20 period, totaling 63.44%. According to the rating of championship participants' frequency distribution, only 17.20% held a brown belt, the other ones presenting higher technical conditions. The hypothesis that athletes have started modality practice early is evidenced anew, taking into account the time required to get the black belt. 83.87% of athletes stated that they train between 3 and 6 days per week in intervals varying from two to four hours daily. Concerning weight categories, the intermediate ones, that is, light one (more than 66 kg) and middle-medium one (from 73 to 81 kg), were the most frequently mentioned, corresponding to 44.09% of the total.

Concerning sports injuries occurring during 1-year interval, 30.11% of athletes refer to them as absent and almost 50% mention a single event; the rest mention between two and six events. Tables 1–3 present three different aspects of the injuries that we have studied: the first presents their type; the second one relates this information to the body structure attained and the last one presents the corresponding situations of the athletic events.

In frequency distribution (Table 1), a gradient was found: sprain > contusion > distension > ligament > injury > wrenching > ub-wrenching. Table 2 shows that knee impairing (and inside it, the sprains) is the most common injury. Only 4.55% of injuries was directed to thorax region (column and abdomen), mainly sprains and contusions. In Table 3, situation pre-

Table 1  
Distribution of referred sport injuries frequencies in an yearly period by judo athletes from São Paulo State, Brazil, according to type

Type of lesion	Frequency	
	Absolute	Relative (%)
Sprain	29	26.36
Contusion	17	15.45
Strain	16	14.54
Ligament injury	14	12.72
Partial dislocation	10	9.09
Total dislocation	10	9.09
Meniscus injury	07	6.36
Fracture	03	2.74
Incision	03	2.74
Tendon rupture	01	0.91
Total	110	100.00

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