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Research Article

Epidemiological Study of Brazilian Judo Injuries

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Abstract

Introduction: The number of judo practitioners has grown in the last ten years worldwide. Consequently, the intensity and frequency of appearance of these lesions increased significantly when compared to other martial arts and other sporting modalities. Judo is appointed as belonging to the high-risk group.

Objective: To perform a retrospective epidemiological survey and to analyze the traumatic injuries in the judo modality.

Materials and Methods: We performed the analysis of the athletes' data through the records of injuries collected by the care team that acted in the events and recorded those that occurred directly in the tatami mat (tatami).

Results: Nine Events were analyzed and 2,890 athletes with 485 occurrences were counted

Conclusion: We conclude that judo is not a sport with high incidence of injuries and, when they occur, they are not severe. Our study fully modifies the concept of the severity of injury incidents in judo.

Keywords: Judo; Injuries; Epidemiology; Martial Arts; Trauma

Introduction

Judo, created by Jigoro Kano in 1882, became an Olympic sport in 1964 and is currently considered one of the most popular martial arts in the world. Its origin comes from the former Japanese Jiu-jitsu, which consisted primarily of combat techniques to be used in battles or individual conflicts [1,2]. The number of practitioners has grown in the last ten years worldwide, both in the male and female categories, especially after the great Brazilian Olympic achievements by athletes such as Aurélio Miguel, Rogério Sampaio, Flávio Canto, Leandro Guilheiro, Vânia Ishi and Ednanci da Silva [3,4].

The increase in the number of practitioners has highlighted the injuries in this sport. Judo has a high rate of injuries when compared to other martial arts such as karate, Taekwondo Jiu-Jitsu [4-6]. Studies also report the correlation between high-performance training and postural deviations in adolescents, mainly due to the asymmetric overload characteristic of the laterality of this sport [7,8]. Parkkari., *et al*. [9], in an estimated occurrence of injuries per hour of activity, pointed out that judo belongs to the group of high risk of injury, registering a mark of 18.3 occurrences for 1,000 hours of activity [9]. In this same study, football presented a mark of 6.6 occurrences for 1,000 hours of activity and sports such as golf, swimming, dance walk and Rowing obtained a mark of only 0.19-1.5 occurrences for 1,000 hours of activity [9].

In addition to the lesions, persistent bleeding, dental contusion, eye contusions and loss of consciousness can ward off the competitor of an event. Injuries such as joint dislocation requiring reduction, grade III sprat or exposed fracture may impair the season, or even sports life. These injuries can cause abandonment during and after the competition, as there are certain rules that distance the sportsman from the event [10-13].

The knowledge of acute injuries in competitive events can better guide training for these athletes.

There is no record of the index of acute injuries occurring during Judo championships in the Brazilian literature. The data recorded by the attendance committee were then collected during the finals of the main championships held by the Paulista Judo Federation (FPJ) and by the Brazilian Judo Confederation (CBJ) to conduct an epidemiological analysis of these Injuries.

The objective of this study was to conduct a retrospective epidemiological survey of the lesions documented during judo competitions.

Method

The study was approved by the Research Ethics Committee of the Paulista School of Medicine under Number 1553/09. The data recording of the seven championships of the São Paulo Judo Federation (FPJ) and the Brazilian Judo Confederation (CBJ) was used. The collected data generated the "incident report" from the Medical department's board of Directors. Those who attended the championships had prior medical release and were considered fit to fight.

We analyzed the records of injuries of athletes of both sexes, aged between 5 and 48 years, of various weights, in the amateur, experienced and high-level categories. According to the rules of the FPJ/CBJ and the event, all participants should present at least one year of training at the various undergraduate levels. The study participants were those who suffered some kind of traumatic injury during the fight or sought care in the interval periods and were attended by the team of rescuers of the event. Also included were those who needed removal to the hospital unit.

During The championships, only those athletes who presented injury during the fight and all the athletes who sought care in the period between fights with complaints of previous injuries and post-fight were attended.

To define the different levels of data analysis, the results were defined as:

1. Age record or dispute category (CD): All championships are defined by the age of athletes according to sport rules. In this study we only distribute the participants by age, they are: adults older than 17 years and juvenile younger than 17 years. In this we exclude the Open Championship by tracks;
2. Open Championship by tracks (CAPF): We performed an independent analysis of this championship, because the same had no age limits.

The classification of the types of lesions provided by Arriza [13] and Fetto [11] was used and the definition of the severity degree of the lesion followed the classification of Fetto [11] and Simões [12] (Table 1). The lesion site initially followed the study of Barsottini [4] and Halabchi [14], and subsequently modified to adapt to subsites (table 1).

Classification of injury Types [12,13]	Classification of injury Grade [12,13]
Grade III concussion; Grade III Sprat; Open fracture; Ocular injury; Visceral lesions; Hemorrhages and dislocation requiring reduction	Serious
Grade II concussion; Ocular contusion; Crisis Grade II Sprat; Closed fracture; Grade II laceration, epistaxis and Dental injury	Moderate
Abrasion Fingernail avulsion; Bubble Callus Cramp Contusion Distension Grade I laceration; Tendinitis and Subluxation	Slight
Lesion site According to the authors who studied [4,14]	Sublocal [4,14]
Region	Right and left
Head, Face and neck (CFP)	Face, nose, eyes, lip, skull, Cervical region
Trunk and Genitalia (TG)	Abdomen, thorax, coasts, genitalia, groin
Upper Limbs (MMSS)	Shoulder, arm, elbow, forearm, wrist, hand, hand fingers
Lower Limbs (MMII)	Hip, thigh, knee, leg, ankle, foot, toes

Table 1: Classification of the types of lesions according to Fetto [11] and Arriza [13] and the degree of injury according to Fetto [11] and Simões [12] and lesion site according to Barsottini [4] and Halabchi [14].

Statistical analysis was performed using Fisher's exact test, with a significance limit of 0.05 or 5%.

Results

2890 athletes participated in the nine championships. 485 visits and 486 lesions were recorded.

General

The analysis of the results found in relation to the number of participants per championship, record of occurrence and distribution by age are described in table 2.

485 occurrences were recorded. The general analysis of these consultations regarding age can be seen in table 3.

The results found analyzing the types of lesions, degree of injury, specific region of the body and side of the lesion in relation to age are described in table 4.

	Nº participants.	Nº first aid care.
Youth	1970	284 (14,4%)
Adult	720	151 (21,0%)
Absolute (CAF)	200	50 (25,0%)
		Nº first aid care.
Youth		284
Adult		151
Absolute (CAF)		50
* Fisher's exact test, p-value difference.		

Table 2: Overall result of the injuries recorded.

	General	Adult	Youth	P-Value
	485 (100%)	151 (34,7%)	284 (65,3%)	
Degree of injury	**General**	**Adult**	**Youth**	**P-Value**
Take	67,2% (326)	78,1% (118)	62,0% (176)	0,185
Moderate	27,8% (135)	16,6% (25)	32,4% (92)	p=0,001
Serious	4,9% (24)	5,3% (8)	5,6% (16)	0,185
* Fisher's exact test, p-value difference.				

Table 3: Result of the general analysis of care regarding age and degree of injury.

Type of injury	General	Adult	Youth	P-Value
Bruise	40,5% (197)	44,7% (68)	40,1% (114)	0,361
Laceration	16,3% (79)	19,7% (30)	16,9% (48)	0,512
Abrasion	11,9% (58)	9,9% (15)	12,0% (34)	0,633
Sprain	9,1% (44)	7,9% (12)	7,4% (21)	0,851
Concussion	5,1% (25)	2,6% (4)	5,6% (16)	0,229
Nail avulsion	4,1% (20)	4,6% (7)	3,2% (9)	0,437
Dislocation	3,5% (17)	4,6% (7)	3,5% (10)	0,608
Distention	3,1% (15)	2,0% (3)	3,9% (11)	0,396
Epistaxis	1,6% (8)	0,0% (0)	2,8% (8)	0,055
Fainting	1,2% (6)	1,3% (2)	1,1% (3)	1,000
Cramp	1,0% (5)	0,7% (1)	1,4% (4)	0,662
Fracture	1,0% (5)	0,7% (1)	1,4% (4)	0,662
Subluxation	1,0% (5)	1,3% (2)	0,7% (2)	0,613
Bleeding Bubble	0,2% (1)	0,4% (1)	0,0% (0)	0,472
Tendinitis	0,2% (1)	0,4% (1)	0,0% (0)	0,472
Injury site	**General**	**Adult**	**Youth**	**P-Value**
CFP	26,0% (125)	22,1% (33)	29,0% (82)	0,138
TG	4,7% (7)	4,7% (7)	10,2% (29)	0,066
MMSS	46,6% (224)	**56,4% (84)**	42,8% (121)	***p=0,008**
MMII	18,9% (91)	16,8% (25)	18,0% (51)	0,792
CFP	**General**	**Adult**	**Youth**	**P-Value**
Face	19,2% (24)	30,3% (10)	17,1% (14)	0,123
Nose	10,4% (13)	0,0% (0)	**13,4% (11)**	***p=0,032**
Eyes	2,4% (3)	3,0% (1)	1,2% (1)	0,493
Lip	38,4% (48)	36,4% (12)	41,5% (34)	0,677
Skull	22,4% (28)	18,2% (6)	20,7% (17)	1,000
Cervical Region	7,2% (9)	12,1% (4)	6,1% (5)	0,276
TG	**General**	**Adult**	**Youth**	**P-Value**
Abdomen	12,2% (5)	0,0% (0)	17,2% (5)	0,059
Chest	51,2% (21)	57,1% (4)	48,3% (14)	1,000
Coasts	29,3% (12)	42,9% (3)	27,6% (8)	0,650
Genitalia	4,9% (2)	0,0% (0)	6,9% (2)	1,000
Groin	2,4% (1)	0,8% (1)	0,0% (0)	1,000
MMSS	**General**	**Adult**	**Youth**	**P-Value**
Shoulder	29,8% (67)	**36,9% (31)**	23,8% (29)	***p=0,044**
Arm	0,4% (1)	0,0% (0)	0,8% (1)	1,000
Elbow	27,1% (61)	17,9% (15)	**33,6% (41)**	***p=0,016**
Forearm	0,4% (1)	0,0% (0)	0,8% (1)	1,000

Handle	4,4% (10)	7,1% (6)	3,3% (4)	0,322
Hand	3,1% (7)	2,4% (2)	4,1% (5)	0,703
Hand Fingers	34,7% (78)	35,7% (30)	33,6% (41)	0,767
MMII	**General**	**Adult**	**Youth**	**P-Value**
Hip	0,0% (0)	0,0% (0)	0,0% (0)	
Thigh	12,1% (11)	8,0% (2)	15,7% (8)	0,482
Knee	44,0% (40)	32,0% (8)	52,9% (27)	0,095
Leg	9,9% (9)	20,0% (5)	7,8% (4)	0,145
Ankle	15,4% (14)	4,0% (4)	13,7% (10)	0,259
Foot	6,6% (6)	4,0% (1)	3,9% (2)	1,000
Toes	12,1% (11)	**32,0% (8)**	5,9% (3)	***p=0,004**
Body side	**General**	**Adult**	**Youth**	**P-Value**
Right	65,3% (209)	63,6% (70)	67,4% (118)	0,523
Left	34,7% (111)	36,4% (40)	32,6% (57)	0,523
* Fisher's exact test, p-value difference.				

Table 4: The result of the analysis of the type of injury in relation to age.

Relationship between lesion site *versus* injury type

The relationship between lesion site versus type of injury can be seen in table 5.

Injury	Local	% (nº)
Bruise		
	Shoulder	27,0% (54)
	Elbow	25,5% (51)
	Knee	12,0% (24)
	Chest	9,5% (19)
	Coasts	5,0% (10)
	Cervical region	4,0% (8)
	Hand Fingers	3,0% (6)
	Toes	2,5% (5)
	Other (B)	11,5% (23)
Fracture		
	Chest	20,0% (1)
	Forearm	20,0% (1)
	Hand Fingers	20,0% (1)
	Knee	20,0% (1)
	Ankle	20,0% (1)
Abrasion		
	Hand Fingers	58,6% (34)
	Face	12,1% (7)
	Hand	8,6% (5)
	Other (A)	20,7% (12)
Laceration		
	Lip	58,2% (46)
	Face	21,5% (17)
	Hand Fingers	8,9% (7)
	Other (E)	11,4% (9)
Dislocation		
	Hand Fingers	29,4% (5)
	Shoulder	23,5% (4)
	Elbow	23,5% (4)
	Other (F)	23,5% (4)
Sprain		
	Knee	29,5% (13)
	Ankle	27,3% (12)
	Hand Fingers	13,6% (6)
	Others (D)	29,5% (13)
Distention		
	Thigh	40,0% (6)
	Coasts	13,3% (2)
	Shoulder	13,3% (2)
	Other (C)	33,3% (5)
Nail avulsion		
	Hand Fingers	95,0% (19)
	Toes	5,0% (1)
Subluxation		
	Shoulder	60,0% (3)
	Other (G)	40,0% (2)
Tendinitis		
	Groin	100,0% (1)
Bleeding Bubble		
	Foot	100,0% (1)
Cramp		
	Leg	100,0% (1)
Concussion		
	Skull	100,0% (25)
(A) Toes 3, foot 3, lip 2, Nose 2, elbow 1, Knee 1		

(B) Back 10, cervical region 8, hand fingers 6, toes 5, abdomen 4, thigh 4, leg 4, eyes 3, genitalia 2, cuff 2, Nose 2, forearm 1, hand 1, foot 1
(C) Cervical Region 1, thorax 1, arm 1, Leg 1, ankle 1
(D) Shoulder 4, elbow 4, handle 4, toes 1
(E) Skull 4, nose 2, hand 1, foot 1, toes 1
(F) Cuff 3, knee 1
(G) Elbow 1, Cuff 1

Table 5: Analysis of the relationship between lesion type *versus* site of injury.

Discussion

General analysis

Our study recorded 486 injuries in 485 visits of the 2890 athletes who participated in the tournaments, representing 16.78% of the total number of participants.

Regarding the total number of competitors, the highest number of injuries and attendance frequency before and after the fights occurred in the absolute category (CAF) when compared to the adult and juvenile categories (table 1). This could be explained by being a category without limit of weight and age, putting some athletes at a disadvantage compared to their opponent. An athlete who faces a larger and/or heavier opponent has greater difficulty moving the opponent's center of gravity out of its axis [19]. The main biomechanical foundation of judo is precisely the artifice of Kuzushi (Promote and/or harness the imbalance of the opponent) which is the breaking of balance to the perfect projection using human levers systems, providing minimum effort with maximum efficiency. Foundation created to minimize overloads in the musculoskeletal system and risks of [2,19] injuries. When comparing the number of adult and juvenile injuries, we can notice that when athletes fight in their category (weight equality), the record of injuries decreases significantly (table 1).

Analyzing only 485 occurrences, the highest percentage of injuries reached the adult group. Perhaps this result is the reflection of a mathematical logic: the adult has a smaller amount of athletes participating in this modality in relation to juvenile [3,4] and thus a small record of injuries will be statistically higher in a lower population, as seen in table 1. This can also be explained by the fact that the adult has greater experience in the struggle and, when attempting to protect himself from serious injuries, interrupts the struggle constantly for any reason, opposite of juvenile that loses the notion of protection, risk and strength. It is known that young athletes have a more aggressive behavior characteristic of age, less experience and less technical knowledge in combat, exposing themselves more during the fight [3,4,9,11,19], but at the same time resist pain and request during the fight (table 3). This characteristic is repeated in the various analyses of the lesions (grade, type, age, location of table 4) as we will see below.

Lesion analysis

Degree and type of injury

Our results showed that mild lesions were the most recurrent. Been such the types of injuries, we found that the contusion, laceration and abrasion were the most frequent, corroborating some studies on the topic [6,15,19], because a biomechanical characteristic of the sport are the various forms of "grip fighting" (kumikata) representing almost 70% of the [2,19] throw. To achieve a good "grip fighting", during the fight there are constant and rapid changes in movement of the limbs and body [15,19] and, as a consequence, increase the frequency of these types of injuries. Our findings go against the literature data claiming that judo is a modality of martial arts that presents a high frequency of serious injuries [4-6,25].

The moderate lesions were the second most frequent record for the degree of injury, confirming other [11,13] studies. Injuries such as sprat, concussion, nail avulsion, dislocation and distension are less frequent, but more intense. They are, in general, due to counterblow, arm wrenches and imbalances, among others [19].

Our findings with immediate care have shown that severe lessons are rare in judo, not reaching 5% of the total. The literature [4-6,9-12] describes this sport as a modality with a high frequency of serious injuries, but with retrospective studies of the medical department, where the athletes present with serious injuries. Injuries such as hemorrhages, dislocation and fractures should be treated immediately and after the struggle, sometimes requiring surgical intervention and continuous treatment of physiotherapy.

Injury site

Analyzing the results regarding the lesion site, we verified consonance with the literature that states that the MMSS region was the most affected in judo [4-6,24,26]. In this region, we verified that the fingers of the hand were the most frequently affected; we believe that the constant search for the "grip fighting" leads to a high request for manual grip [19], because it is the first form of contact with the opponent and the first step to control the fight provoking injuries to the fingers. Our findings also reveal that the shoulder is the second and the elbow the third most frequently affected site within the MMSS region, counterpointing some work on [4]. Some authors [5,15,21,24,26] affirm that the shoulder is the first most frequently affected site in judo. They also affirm that shoulder and

elbow injuries are purely traumatic due only to falls, while lesions in other regions are due to a continuous wrong biomechanics (tendinitis, muscular ruptures, among others). According to these authors, these lesions can be explained by the constant search for victory, because the athlete when receiving a blow and trying not to lose the fight, falls improperly on the limbs. However, some authors report that shoulder injuries may also be due to the biomechanics of the sport, because the incorrect biomechanics and overtraining can lead to acute traumatic injuries [4,19]. During combat, the MMSS undergo opposing forces and highly fatigued metabolic overloads promoting a high degree of soft tissue tension and, if the musculoskeletal apparatus is not prepared for these overloads, acute lesions occur in any location of the MMSS [4,15,19].

The second most frequently affected region was the CFP, understood as the whole face of the anterior region of the face except nose, eyes and lips. The three most frequently affected sites were the lip, the skull and the face. These data confirm that the constant changes in direction, "grip fighting" and throw that occur during combat, coupled with the lack of experience and the aggressiveness of the athlete contribute to this high frequency [19].

The third most frequently affected region was the MMII. We cannot find a concept in the literature on this theme, each author describes a different ranking for injuries in the lower limbs and thus cannot perform a parallel with our findings. We verified that the knee was the most affected site, followed by the ankle and also the thigh and toes. Perhaps the knee injuries can be explained by the fact that they are caused by throw and against blows [4], falls on the limb, wrong biomechanics, microtrauma and other [3,5,6,19]. On the other hand, ankle and toe injuries are due to direct trauma due to throw and tread during the movement or sprains during combat [4,19,20,22-24].

Our findings reveal that the lesions in TG are rare, with the thorax, back and abdomen being the most frequently affected regions, perhaps due to the reaction of throw and against throw and wrong falls [4,19].

We did not find significant differences regarding the laterality of the lesion, although there was a higher occurrence of lesions on the right side, confirming findings from the literature. Considering that most of the population is right-handed, thus, it was to be expected these findings [3-7,19].

Age-related analysis (adult and juvenile)

Degree and type of injury

As previously mentioned, the Adult category presented a higher frequency of mild lesions. This is confirmed when we analyzed the results by type of injury, because the adult also presented a higher frequency for contusion and laceration, considered mild lesions. Franchine., *et a*l. [19] they report that the senior (adult) has a greater perception of effort associated with experience in the modality, allowing not to risk during the fight.

The juvenile presented, for the moderate lesions, almost twice as many occurrences in relation to the adult, demonstrating that young people are more aggressive and expose themselves more during combat [19]. The aggressiveness of age may justify the findings regarding the type of injury, since juvenile also presented a higher frequency of lesions for epistaxis, concussion, distension and fractures, considered more intense lesions.

The risk of serious injuries did not show significant differences for both categories, since in this case there is always care.

Lesion site

Regarding the lesion site, the adult presented significant differences for the region of the [21,22] MMSS. Franchini., *et al.* [19] studied the metabolic capacity of the MMSS in the Wingate test and reported that in the Senior Class (adult) The metabolic capacity decreases in relation to the young (juvenile), stating that adults have a lower capacity to burst of MMSS, resisting less to metabolic requests with increasing fatigue. Within the MMSS region, the adult presented a difference for the shoulder, perhaps due to several inappropriate throw, repetition of wrong movements and high metabolic demands of the [15,19] sport. The juvenile presented a difference for the elbow, possibly a result of wrong throw and armwrenches, which are usually performed by young (juvenile) by the attempt of rapid victory [15,19]

Juvenile showed higher frequency for the CFP region. Within the CFP region, juvenile also presented a higher frequency of care for the lip and the skull and a significant difference for the nose, showing again the inexperience and the characteristic aggressiveness of age [19].

Juvenile also presented a higher frequency for the lower limb region. Furthermore, juvenile also presented a higher frequency for knee and ankle injuries, which can be again justified by the aggressiveness of age, lack of experience of the athlete who ends up exposing himself to situations of risk and may suffer a tread or counterblow during the fight and the fact that juveniles do not still have a suitable metabolic preparation for the modality, corroborating some studies [19,22-25]. On the other hand, the adult presented a difference for injuries to the toes, which can be explained by the experience of the same to allow a better movement during the fight and this provide a greater probability of tread and contusion on the toes during drive in the fight [19].

Juvenile showed a higher frequency of care for the TG region, again justified by aggressiveness and lack of experience characteristic of age [19]. Within the TG region, we verified that the adult presented a higher frequency for the thorax and back, perhaps due to successive attempts to enter blows and counterblow (Kuzushi) [19]. The juvenile had a higher frequency of care for the abdomen and genitalia, justified by aggressiveness and lack of experience, mainly because they were not areas that fit the biomechanics of sport [1,19].

We did not verify differences between ages in relation to the side of the lesion. We only found that the juvenile showed a higher frequency for the right side and the adult on the left side, perhaps because the adult has more experience and train an "inverse grip fighting" [2,19] in the kimono providing this increase to the side left side.

Lesion Analysis versus site of injury (table 5)

This analysis revealed that the contusion most frequently affected the shoulder [24] and the elbow confirming our previous findings regarding light injuries. Soon we can infer that when the MMSS suffer an injury, most often are mild injuries, perhaps because of the constant search for "grip fighting" and imbalance provoke reactions of blows and counterblow making these places more prone to suffer injuries light [24].

The laceration most frequently affected the lip and the face, while the abrasion most frequently affected the fingers of the hand and the face. All these lesions can be justified by the constant "grip fighting" during the struggle that escape/slip and provoke this type of injury [19].

The distension almost entirely affected the thigh, perhaps due to the lack of preparation of the musculature or by the constant changes of direction of the closed kinetic chain fight, by the lower limbs suffer constant eccentric contractions and by the intense metabolic requests of the sport [19].

The sprain almost only affected the knee and ankle and with these findings we can infer that lesions in the lower limbs are almost entirely due to direct traumas or by imbalances during the fight [26].

The dislocation most frequently affected the fingers of the hand, counterpoint the findings of the literature [5,20,23,24,26], perhaps because our study had immediately recorded the injuries during the championships and not a retrospective questionnaire, where the Athlete may forget to comment on minor injuries and not reveal this in the retrospective questionnaires. These lesions can be justified by the constant search for the "grip fighting" and wrong falls on the hand providing a high number of severe injuries in this joint [19]. But shoulder and elbow dislocation are rare, proving our previous theories.

Subluxations are rare and affect almost entirely the shoulder, stating our previous findings.

The nail avulsion reached almost entirely the fingers of the hand, again can be justified by the attempt to "grip fighting" that when the hand escapes, the nail is trapped in the collar of the kimono and is avulsed [19].

Fractures were rare and equally distributed between the regions, with no pattern, counterpoint the reports of the literature that reveal that fractures are common in this modality and that affect more frequently the elbow and fingers of the hand [4,20,23,24,26].

The concussion could only reach the skull (head) and occurs frequently when the athlete falls head after a blow and erases during the fight, rarely occurs the faint after the fight. Some rare cases occur when the athlete does not faint during the fight, but the referee verifies that the same is not in perfect condition and gives the fight closed and the same is attended after the struggle for presenting some symptom related to faint [2,19].

The set of injuries such as tendinitis, cramp, and bleeding bubble presented such a low number of occurrences, which we can disregard as a cause of care.

The great difference in this study was to present the data of immediate care occurred at the site of the fight in contrast to the retrospective work with outpatient care records, a fact that totally modifies the concept of the severity of the lesions incidents in judo.

With the results of this study, the first aid teams will have a more accurate record of the most common immediate injuries of the sport, providing a logistic adequacy and a better screening of athletes during the event for a precise and fast attendance. Thus, we can provide the athlete with an efficient service with less risk of sequelae and, consequently, a lasting sporting life [26-34].

Conclusion

The record of injuries during the championships and during the fight itself revealed precisely which injuries the judokas are more likely to suffer and, mainly, how the team of first aid can prepare technique and logistically to promote the fastest and efficient help for these athletes, thus preventing sequelae resulting from delayed or poor pre-hospital care.

We can say that judo is not a sport with high incidence of serious injuries.

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Volume 2 Issue 7 July 2019