

INJURIES IN TAEKWONDO

J. E. SIANA, MD, P. BORUM, MD and H. KRYGER, MD

Department of Orthopaedic Surgery and the Department of Ear Nose and Throat, KAS Glostrup Hospital
(KAS: Copenhagen County Hospital) Denmark

ABSTRACT

During the 6th Taekwondo World Championship more than 4 per cent of the competitors were admitted to hospital. The majority of the severe injuries were to the head and neck.

More padding and a change of rules are recommended.

INTRODUCTION

Korean taekwondo is an Asiatic fighting sport practised all over the world. Originally taekwondo was a discipline in the Korean army and originated about thirteen hundred years ago. The word taekwondo can be translated as "the art of foot and hand". Tae means a kick or push with the foot, Kwon means clenched fist or the blow that crushes; Do means the spirit, way or method (Jensen, 1983).

In 1983 the Danish Taekwondo Federation arranged the 6th Taekwondo World Championship. Many injuries sustained by the participants in these games were treated by us and are presented in this paper.

THE RULES

All matches permit full body contact. The fighters are allowed to kick the head and all parts of the body above the belt but they are not allowed to use their fists against the head.

A match takes place between two performers. Combat time is 3 × 3 minutes. The match may be won on a knock-out, but is more commonly won on points. Points are awarded for powerful and correct blows aimed at head, solar plexus or flanks (Jensen, 1983).

The combatants wear padding on the trunk and genitalia, whereas the head is unprotected except for a non-obligatory mouthguard.

CASES

346 competitors from 55 nations participated during the four days of the contest (Jensen, 1983).

All lesions were caused by direct violence aimed at the anatomical regions shown in Tables I and II. Minor lesions such as contusions and haematomas were treated on the spot by the medical officer present. More severe injuries were admitted to the casualty departments of the KAS Hvidovre (2 cases) and KAS Glostrup hospitals (13 cases).

Because of the geographical distribution of the competitors follow-up of the cases was not possible.

Address for correspondence:

J. E. Siana, MD
c/o Korsholm
Bulowsvej 50A, 4.tv
1870, Frederiksberg C
Copenhagen
Denmark

CLASSIFICATION OF SEVERE INJURIES

This classification was based on data from 13 cases admitted to the casualty ward of KAS Glostrup.

Injuries were divided into two groups, namely injuries to the head and neck (Table I); and injuries to the limbs (Table II).

TABLE I

Injuries to the head and neck (9 cases)	Number of injuries
Fractures of the zygomatic bone	1
Fractures of the mandibular rami	2
Fractures of the mandibular angle	2
Blows to the trachea	1
Concussion	1
Epistaxis	1
Dental fractures	1
Facial contusions and lacerations	2
Total	11

TABLE II

Injuries to the limbs (4 cases)	Number of injuries
Ulnar fractures	1
Contusion of the deltoid region	1
Contusion of the knees	1
Contusion of the feet	1
Total	4

ORIGIN AND TREATMENT OF INJURIES TO THE HEAD AND NECK

A total of 11 injuries to 9 persons were recorded all of whom were using mouthguards (Table I).

The fractures of the mandibular rami and the mandibular angle which had been caused by direct kicks in the face were treated by closed reduction and maxillary fixation. The fracture of the zygomatic bone with protrusion of the eyeball was also the result of a kick in the face. The patient had double vision but the optic nerve was unaffected. Treatment was open reduction and internal fixation.

One patient who had received a blow to the trachea, had slight difficulty in breathing. He discharged himself against medical advice.

One case of dental fracture and two lacerations which were the result of kicks in the face necessitated suture of the face and were treated as outpatients.

ORIGIN AND TREATMENT OF INJURIES TO THE LIMBS

A total of 4 injuries in 4 persons were recorded (Table II).

All cases were treated as outpatients.

One patient who had received a kick on the forearm, had an ulnar fracture which turned out to be a re-fracture of one received a year earlier in another taekwondo contest. The fracture was treated with reduction and immobilisation in a plaster cast.

Two cases of contusions of knee and shoulder were the results of attempts to block direct kicks aimed at the region and were treated with crêpe bandages and immobilisation; this was also the treatment given to one case of contusion of the foot which was the result of a misdirected kick.

DISCUSSION

During the 6th Taekwondo World Championship with 346 competitors, 15 (4.3%), were admitted to casualty wards with injuries.

Most of the injuries localised to the head and neck regions were fractures and contusions.

Karate is a fighting sport comparable to taekwondo. In the first European Knock-down Karate Championship in 1978, McLatchie reported all injuries that occurred during

the contest (McLatchie et al, 1980). The majority of the lesions were of the trunk and the limbs. Though some lesions localised to the head and neck might have proved of a serious nature no fractures were reported. Half of the competitors sustained an injury.

Our series does not provide information about the total number of injuries during the contest. Thus neither an estimate of the total risk in taekwondo nor a comparison between this and the corresponding one of karate are possible. As to the severity of the injuries, however, we noticed a marked disparity. A possible explanation might be differences in the fighting techniques.

In karate full contact to the head with a kick is allowed only with the use of the instep and only against the side of the head as distinct from taekwondo where the use of the heel with full contact to the face is allowed.

Encouraging the use of protective padding, mouthguard and a face shield would seem reasonable in view of the severity of taekwondo injuries. Although in boxing and rugby the use of mouthguards may reduce the incidence of dental fractures this was not found to be the case in taekwondo since all patients in this series were wearing protection. In our opinion, the best way of avoiding severe damage to the face would be to alter the rules so that kicks aimed at the face are no longer allowed.

References

- Jensen, J., 1983. Programme of the Sixth Taekwondo World Championship.
McLatchie, G. R., Davies, J. E. and Gaulley, J. H., 1980 "Injuries in Karate — a case for medical control". *J.Trauma* 20: 956-958.

BOOK REVIEW

Title: FITNESS OF A NATION
Author: R. J. Shephard
Publisher: Karger, Basel. 1986
Price: US \$98.00 **ISBN** 3-8055-4319-0

The origin of this book has its roots in the Canadian Fitness Survey (1981) and represents a first attempt to define a comprehensive benchmark of information regarding fitness standards, activity patterns, lifestyle and attitudes to physical activity across a stratified random sample of an entire (Canadian) population.

The author aims to interpret this unique body of knowledge within the context of a broad international perspective and to draw lessons helpful to other communities and nations who optimistically plan large scale surveys. As such Shephard recognises the problems of such surveys, but does not shrink from the task of overcoming inherent problems, while gratuitously acknowledging the contributions of professional associates in this 'opus magnum'.

The basic plan of the text is straightforward and logically presented beginning with a critical analysis of current international concepts of fitness and physical activity, while relating these to selected aspects of health, productivity, life satisfaction and the economic burden of geriatric care. Pragmatic approaches used in data generation of major surveys are considered along with methodologies appropriate to large field surveys with much useful, though not complete tabular data presented, while activity patterns, attitudes and lifestyle considerations are treated with less rigour and sense of purpose.

Finally the policy implications of augmenting such surveys are considered at governmental, commercial and voluntary sector levels, as well as for health and activity professionals involved, although in conclusion the author recognises even the limitations of this work in describing, let alone accounting for, trends in health, Fitness and well-being of a nation.

A wide readership is envisaged by the author and to this end he supplies his usual detailed reference listing to satisfy the most assiduous bibliographer.

J. A. White, PhD