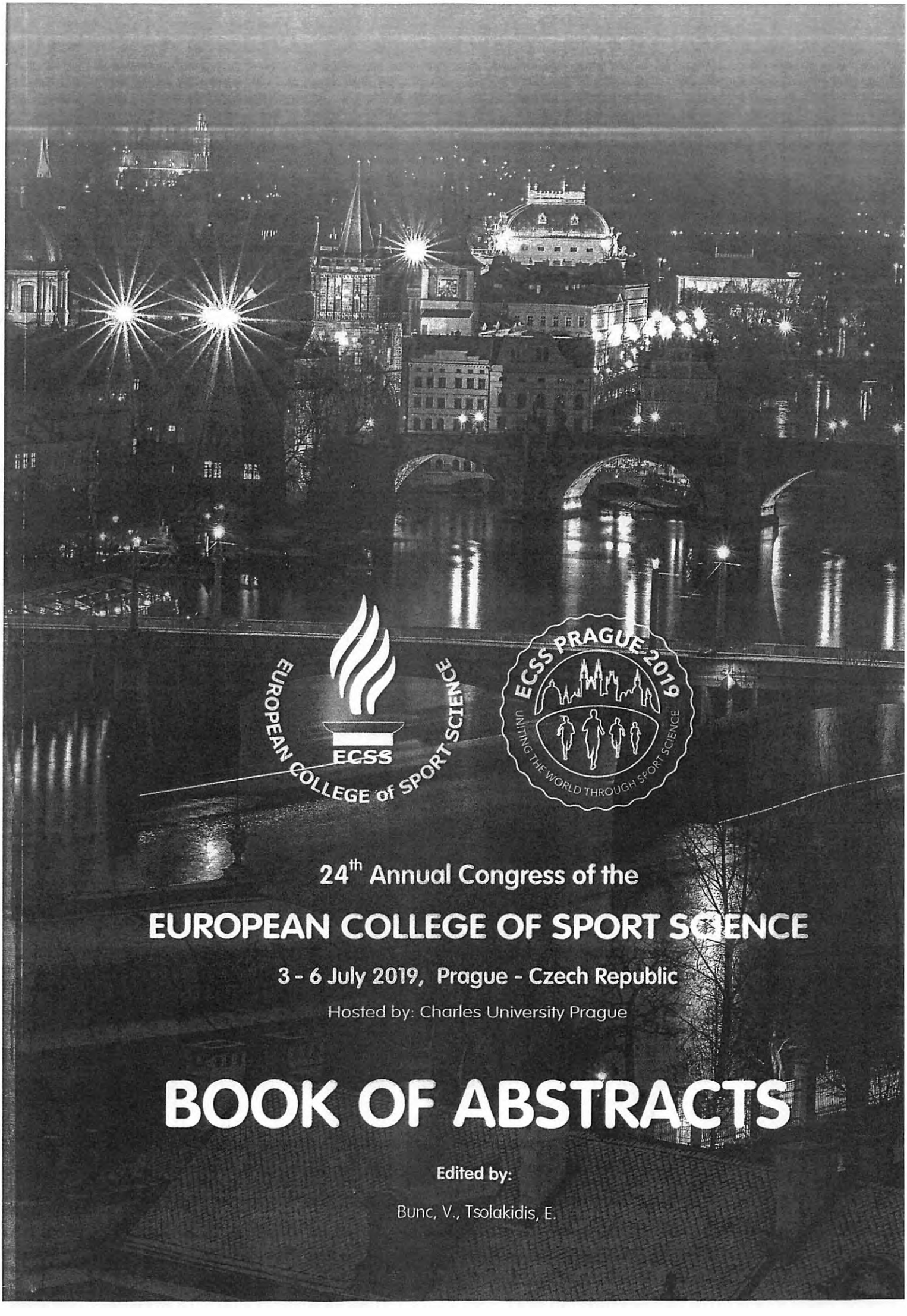

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BOOK OF ABSTRACTS

Edited by:

Bunc, V., Tsolakidis, E.

injury occurrence in Swedish elite athletics during a complete athletics season. The basis for the study is an athletics consensus statement of OI classification as well as the diagnosing of OI by a medical professional.
METHODS: A total of 108 elite athletes from western Sweden were included in the study. Elite status was defined as a top 6 placement at the National Swedish championships or a top 3 placement at the Swedish Junior National championships during the previous or current season. Injury status was screened at the beginning of the new season (October) after an active recovery period of about 4 weeks. Overall, 74 athletes have been uninjured after the screening and were willing to take part in the study. Athletes were asked to document their training and pain status for the next 12 months on a daily basis with help of a newly developed App. Injuries were recorded in accordance to the consensus statement either by notice of the athlete or by information gathered from the app. All injuries were diagnosed by a medical professional after the reporting. The season was split into four parts; conditioning part one (autumn), indoor competition, conditioning part two (spring) and outdoor competition. Descriptive statistics were used to evaluate the data.
RESULTS: Fifty-eight Swedish elite athletes completed a full athletics season. The OI incidence proportion during a complete season for the 58 athletes was 77,6% (all disciplines). Overall the 45 injured athletes suffered from 74 injuries. 54% of all injuries were classified as severe and resulted in training loss of at least 28 days. The most common injury location was the foot/shank (41%) followed by the thigh/hip (39%). Most injuries occurred during conditioning part one (autumn, 35%), followed by conditioning part two (spring, 30%).
CONCLUSION: The main findings from the study show that the overall injury proportion is surprisingly high compared with previous studies even though a more conservative definition of OI has been used. A reason for this could be the definition of elite status of the athletes in our study compared to other studies as well as the use of a medical professional to diagnose injuries. Injury severity differs compared with previous studies, possibly due to the large number of runners in our cohort and the different elite status.

BASIC RESEARCH ON OCCURRENCE FACTORS OF HEAD BRUISES IN THROWING TECHNIQUE OF JUDO - INFLUENCE OF UNEXPECTED CONDITION ON BACKWARD BREAKFALL -

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INTRODUCTION: By 1983 - 2011, there were 118 deaths of judo under school management in Japan, most of which occurred during after-school activities. Regarding the accident, the All Japan Judo Federation reports that it often bruises the head in Randori (free practice). The Randori a practice that throws each other without announcing techniques in advance. Therefore those throwers may not be able to respond to throwing techniques. From this, we thought that being thrown in an unexpected condition is the cause of head bruising. Therefore, the purpose of this study was to clarify that being thrown in an unexpected condition is a cause of head bruising. Since it is dangerous to throw in an unexpected condition, we carried out the experiment with backward breakfall rather than throwing technique.
METHODS: Subjects were six expert men judo club members of university (mean age, 19.5 ± 0.55 years; mean height 169.8 ± 7.86 cm; mean weight 81.4 ± 16.44kg; mean rank: 2.0 ± 0th dan; mean year of judo experience 13.5 ± 2.17 years). Subjects were selected from 6 weight categories (1 person at under 60kg, 1 person at under 66kg, 1 person at under 73kg, 1 person at under 81kg, 1 person at under 90 kg, 1 person at under 100kg). The subject became in a middle posture and was pushed with a certain force by the pushing apparatus to perform backward breakfall (three times per person). The timing of pushing was set in advance as 1) closed eye condition not announcing of pushing and 2) eye opening condition announcing pushing. At that time, we measured angular acceleration and resultant translational acceleration of the head were with an accelerometer. In order to compare the angular acceleration and the resultant translational acceleration of the head in the backward breakfall of the two conditions, Wilcoxon rank sum test was performed. The level of significance was less than 5%.
RESULTS: There was a significant difference in the head angular acceleration (anteroposterior direction) in the closed eye condition (217.0 rad/s2) not announcing in advance pushing and the open eye condition (198.4 rad/s2) announcing to push in advance ($P < 0.05$). There was a significant difference in the head translational combined acceleration in the closed eye condition (65.9 m/s2) not announcing in advance pushing and the open eye condition (53.6 m/s2) announcing the user to push in advance ($P < 0.05$).
CONCLUSION: In this study, it became clear that those who performed backward breakfall in an unexpected condition have a high risk of bruising the head. From this, it was suggested that being thrown in an unexpected condition is a cause of head bruising in judo throwing technique.
This work was supported by JKA and its promotion funds from KEIRIN RACE.
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VISUAL ANALOGUE SCALE AND BODY MASS INDEX MAY PLAY IMPORTANT ROLES FOR DETERIORATE WOMAC SCORES OF PREVENTIVE AGAINST KNEE OSTEOARTHRITIS IN COMMUNITY-DWELLING OLDER ADULTS

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INTRODUCTION: Degenerative joint disease especially for the knee osteoarthritis (OA) is common of all the problems at outpatient Orthopedic department and the main cause of disability in older adults . Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is the most common clinical knee score using for evaluating the scoring of systemic knee function (pain, stiffness, and physical function). The purpose of this study is to determine which factor may affect WOMAC score.
METHODS: 79 community-dwelling older adults (mean age: 69.24+/- 8.08 years) were divided into normal group (NOR, N=34), mild disabled group (MIL, N=35), and severe group (SEV, N=10) group using the Saint Louis University Mental Status (WOMAC) examination. We set 0 as normal people. 1~10 as mild disabiled knee, more than 10 we set as severe. The OA factors we collected including body mass index(BMI), American College of Rheumatology (ACR), visual analogue scale (VAS), individualized lower limb muscle power, individualized knee range of motion (ROM), standing on one leg(balance), 30 seconds to sit up(lower extremity muscle strength), stand up and go(agility/dynamic balance), and 2-minutes step (aerobic endurance). One-way ANCOVA and Pearson's product moment correlation were used to determine plasticity of WOMAC score grading and factor.

Basic research on occurrence factors of head bruises in throwing technique of judo

- influence of unexpected condition on backward breakfall -

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Yoshihisa, I.(Faculty of Education, Osaka Kyoiku University)

Backward breakfall (Video : Front)

Backward breakfall (Video : Side)

Backward breakfall (Photo)

Introduction

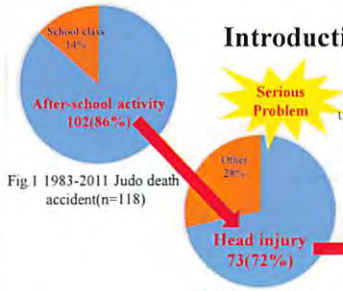

Fig.1 1983-2011 Judo death accident(n=118)

Fig.2 Cause of death (n=102)

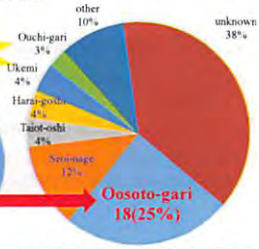

Fig.3 Techniques related to head injury (n=73)

Oosotogari (Video : Left Side)

Oosoto-gari (Video : Right Side)

Oosoto-gari (Photo)

Four factors of head bruising occurrence
(Yoshihisa et al, 2017 ; 2018)

- ① Low skill of backward breakfall
- ②Weight and height difference
- ③Fatigue
- ④Unexpected condition

Purpose

- **The purpose of this study was to clarify that being thrown in an unexpected condition is one of the factors of head bruising occurrence.**
- Since it is dangerous to throw in an unexpected condition, we carried out the experiment with backward breakfall rather than throwing technique.

Methods

(1) Subjects

- Six expert men judo club member of university
- Mean age 19.5 ± 0.55 years
- Mean height 169.8 ± 7.86 cm
- Mean weight 81.4 ± 16.44 kg
- Mean rank 2.0 ± 0 dan
- Mean year of judo experience 13.5 ± 2.17 years

(2) Experiment contents

- The subject: middle posture, pushed by the pushing apparatus.
- Backward breakfall (three times)
- The timing of pushing: 1) closed eye condition not announcing, 2) open eye condition announcing.

Experiment contents (Video : Side)

Experiment contents (Photo)

(3) Analysis

- 3-axis acceleration and angular velocity sensor (MVP-RF8-GC; MicroStone Inc.)
- Comparison of closed and open eye conditions in head angular acceleration
- Comparison of closed and open eye conditions in head resultant translational acceleration
- Wilcoxon rank sum test

Result

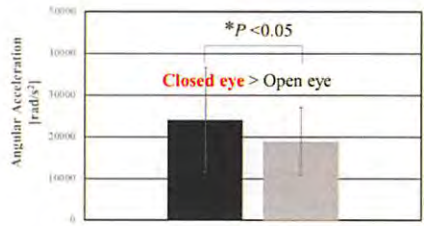

Fig.4 Comparison of the head angular acceleration

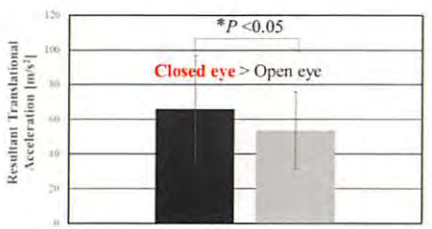

Fig.5 Comparison of the head resultant translational acceleration

Discussion

Table.1 Subject's response

	closed eye condition not announcing	open eye condition announcing
Perception of pushing	↓	→
Output of muscular strength in the neck and trunk	↓	→
The angular acceleration and resultant translational acceleration of the head	↑	→

Conclusion

- In this study, it was revealed that the angular acceleration and resultant translational acceleration of the head in closed eye condition not announcing to push in advance were higher than them of open eye condition announcing to push in advance.
- It was suggested that being thrown in an unexpected condition was one of the factors of head bruising occurrence in judo.

Foundation

This work was supported by JKA and its promotion funds from KEIRIN RACE(2018M-180).

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