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THE CAUSES OF INJURIES IN FREESTYLE SNOWBOARDING

Monika Zygmuntowicz^(A, B, C, D, E, F), Edward Czerwiński^(A, C, D, E)

Department of Bone and Joint Diseases, Jagiellonian University Medical College, Krakow, Poland

Abstract

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Introduction: Freestyle is the most popular and common style of snowboarding. This style includes jumps, tricks, rail slides and halfpipe.

Aim of the study: The aim of the present study was to estimate the causes of injuries in freestyle snowboarding.

Material and Methods: The research was carried out on 211 persons (42 women and 169 men) in age from 16 to 21 years; average age for both sexes was 19.3 years. The questionnaire was used as a research method.

Results: The most common reasons for injuries were technical mistakes (n=89; 81%), tiredness (n=15; 14%), icy slope (n= 14; 13%), other peoples' mistakes (n=4; 4%) and faulty equipment (n=1; 1%). Falls were the injury mechanism in 77%, collisions account for less than 12% of snowboarding injuries. Most collisions involving snowboarders occur with a stationary object.

Conclusions: Individual snowboarding errors were the most common cause of injury in other study. Falls were the most common mechanism of injury in snowboarding.

Key words: freestyle snowboarding, causes of injuries, injury, mechanism

Introduction

Snowboard is the most frequently practised sport discipline. It is assessed that almost 3.4 million people snowboard in the USA. The National Sporting Goods Association estimates that since 1988 the number of snowboarders has risen by 70% whereas the number of skiers has gone down by 25% (1). The frequency of injuries is estimated on the basis of the number of days spent on skiing / snowboarding. In case of professional snowboarders it is 7 injuries per 1000 days, in case of people who snowboard for recreation – 4 per 1000 days. In case of amateur skiers the it is 2-3 per 1000 days. In freestyle competition: big air it is 15.9 per 1000 days and halfpipe – 12.7 per 1000 days (2).

Freestyle is the most popular snowboard style. It involves performing jumps and 'aerobatics' on a specially prepared jumps, obstacles (3) which can be found in snowparks.

Snowpark is a slope, or its part, on which different constructions are arranged (rails, boxes, half pipes, tapezes, corners, jumps) enabling the snowboarders to perform various aerobatics.

One of the freestyle disciplines is big air. Snowboarders need a big jump to practise it. This style entails contusions; therefore it is important to learn about the causes for the injuries in order to prevent them. The aim of the thesis was the assessment of the causes for the injuries of freestyle snowboarders.

Materials and Methods

The research was conducted among sportsmen belonging to snowboard clubs and associations as well as snowparks in Cieszyn, Szczyrk, Ustron and Wisla.

211 people (169 men and 42 women) participated in the research. They were from 16 to 21 years old, and they have been practising snowboard for 2 – 12 years. (3.49 years on average).

The research was based on a specially prepared questionnaire consisting in 32 questions. The questions concerned personal data, technical data, the reasons for injuries (technical mistakes, faulty equipment, other peoples' mistakes, tiredness, other), the mechanisms of injuries (fall, collision: with another person on the slope, with natural/ artificial objects on the slope, other) as well as atmospheric and snow conditions. Respondents could choose more than one answer from a list of options.

The research was conducted in winter season 2006/2007 among 211 people, 109 were injured during snowboarding in freestyle competitions. Only 19 % of respondents said they wore a helmet and 38 % used protectors.

Results

The reasons of injury

The questionnaire was completed by all respondents. The most frequent reasons for injuries were technical mistakes (n=89; 81%), tiredness (n=15; 14%), icy slope (n= 14; 13%), other peoples' mistakes (n=4, 4%) and faulty equipment (n=1; 1%). The research didn't show the influence of atmospheric conditions (rainfalls, snowfalls, fog) on the occurrence of injuries. Nevertheless they were influenced by snow condition. The assessment of snow condition involved the kind of snow (soft snow, fake snow, wet frozen ice) and it was claimed that the frost on the slope caused injuries in case of 13% of all respondents.

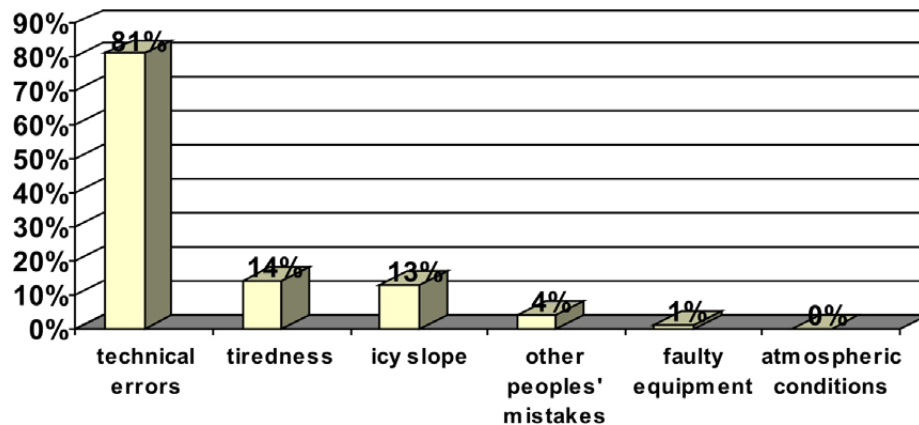


Fig. 1. The reasons of injury

The results indicate that contusions of the snowboarders practising freestyle are due to technical mistakes (losing control, catching the edge, recklessness, taking risks), both in case of people with long and short experience (4). The respondents claimed to have made mistakes more often when learning new stunts, than when perfecting the already known ones. Injuries caused by tiredness occurred usually in the evenings. Determined causes for injuries are illustrated in figure 1.

The mechanism of injury

The research showed that the most frequent injury mechanism was the fall during landing after the jump (n=92; 77%). Rarely, the cause for injuries was the collision with another person on the slope (n=4; 3%) or with natural or artificial objects on the slope (tree, pillar, snow cannon) (n=11; 9%) (4).

During snowboarding in snowparks, the most frequent falling mechanism was one that occurred on rails and boxes (n=13; 11%) during which snowboarders were most frequently injured on the head (fig. 2).

Discussion

The results presented in the dissertation confirm the results published by Hagel (5), who claims that the main cause for snowboarders' injuries are technical errors and the major injury mechanism is a fall. The research carried out by Bjornstig and Hagel prove that the main reason for injuries is the loss of balance during the performance of stunts. In freestyle competitions like big air and halfpipe the risk of contusion is greater than in other competitions (like slalom) or recreational forms of this sport discipline (2).

Torjussen and Bahr conducted similar research among professional snowboarders. They stated that injuries occurring during halfpipe and big air competitions result from falls, which constituted 93% and 100% (2).

Despite the results presented by Young, which show that 4-8% of the respondents were injured during using ski lifts, our research presents no such results (1).

In order to lessen the number of technical errors, and what follows – the number of injuries – a proper preparation for the snowboarding season is necessary. Exercising and jumping on a trampoline will help to

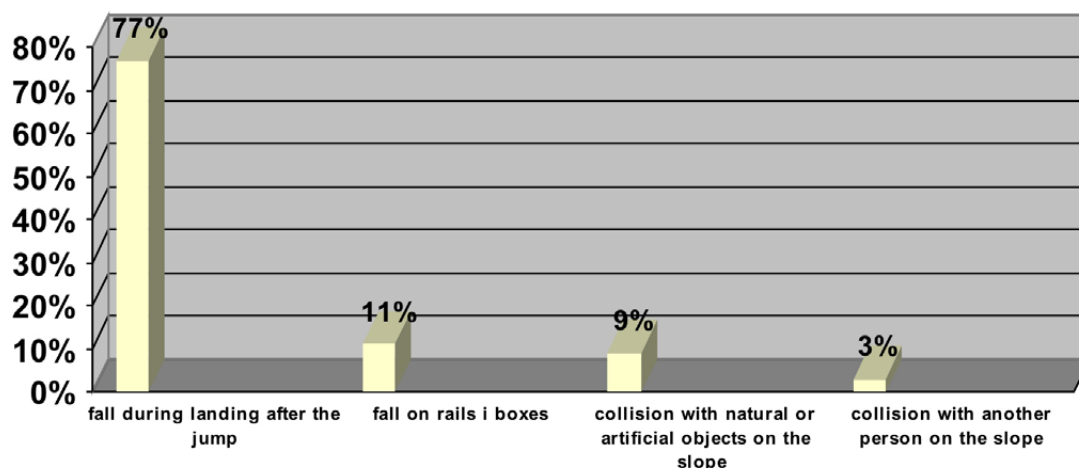


Fig. 2. The mechanism of injury

prepare for jumps and stunts. Special training will enable to improve motor abilities, movement coordination and balance (6).

Conclusions

On the basis of the conducted research the following conclusions can be drawn:

- 1) Snowboarders taking part in freestyle competitions suffer from injuries because of technical errors (loss of control, catching the edge, carelessness, taking risks).
- 2) Atmospheric conditions have no influence on the occurrence of injuries, whereas the frost on the slopes does.
- 3) The most frequent injury mechanism is a fall (77%).
- 4) Collisions constituted 12 % of all injury mechanisms. Most frequently, the sportsmen collided with natural or artificial objects (tree, pillar, snow cannon).

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Address for correspondence:

Monika Zygmuntowicz

ul. Kopernika 32

31-501 Krakow

Tel. 012 4303209

Fax 012 4303217

e-mail : mzygmuntowicz@o2.pl

Author's contribution

A – Study Design

B – Data Collection

C – Statistical Analysis

D – Data Interpretation

E – Manuscript Preparation

F – Literature Search

G – Funds Collection