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INJURIES IN MODERN SNOWBOARDING

INTRODUCTION

For the last twenty years the popularity of snowboarding, a relatively new sport and form of physical recreation, has increased significantly. Undoubtedly, this is related to a the great variety of snowboard forms, enormous popularity of board sports in general and, first of all, the wide range of motor, emotional and aesthetic sensations experienced by snowboarders.

Snowboard is classified as one of the so-called extreme sports, i.e. sports which by definition, carry an increased risk of injuries. Therefore, it seems necessary to carry out research which will monitor and regulate the issue of injuries in order to collect data on numerous and continually changing risks of injury, which occur in connection with the continuous development of snowboarding. The recognition of such risks will constitute a valuable material for sport specialists involved in the methodological and educational process, and will show the direction of development of prevention measures against snowboard injuries.

METHODS

The data obtained from the investigation performed by means of a diagnostic survey method with the use of a questionnaire constituted the research material. 100 snowboarders, including 38 women and 62 men, from the Wielkopolskie Province in Poland were asked to complete the questionnaire. The study took part in the first quarter of 2005.

The data for the study were collected from accident cards from the 2004/2005 season of the GOPR (Mountain Voluntary Rescue Service Group) in Wałbrzych and Kłodzko. The cards included data on 62 snowboard accidents.

The collected data were statistically processed in order to study the occurrence of typical severe injuries in snowboard. According to Fibak [3], "a typical sports injury is such an injury which results directly from a technique of a given sport or environment in which the given sport is practiced." The same author also defines the term of severe injury, which, he interprets as "each accident in which an injury is experienced as a single event. An athlete is able to recall when the injury happened and during which exercise."

RESULTS

Results of the questionnaire survey.

Figure 1 shows that 62% of the respondents sustained an injury while practising snowboard. Only 38% of the respondents have never experienced any injury during snowboarding.

Figure 2 shows different types of injuries experienced by the respondents. Bruises constitute the highest percentage of injuries during snowboarding, i.e. 38% of the total number of injuries. 24% of the respondents have experienced fractures, 18% dislocations and 11% concussions. 9% of the respondents admitted to have had other injuries, including nose bleeding and cuts.

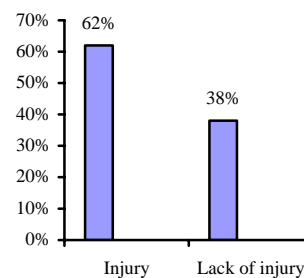


Figure 1. Percentage of injury occurrence

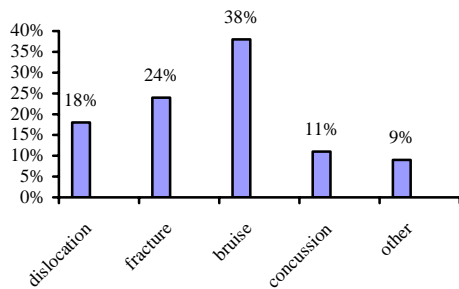


Figure 2. Types of injuries

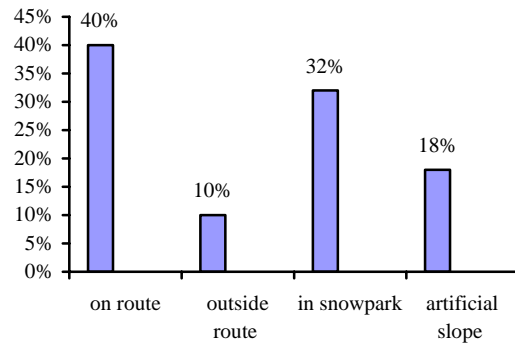


Figure 4. Place where injuries happen – questionnaire survey

Figure 3 shows that excess speed is the most common reason for injuries, which constitutes 37% of all reasons for snowboard injuries, followed by insufficient skills (28%). A relatively high number of accidents are caused by presence of other people (18%). Bad weather conditions (8%), poor route preparation (6%) or faulty equipment (3%) have a smaller influence on snowboard injuries.

Figure 4 shows that as many as 40% of the respondents have had an injury while practicing snowboard on a slope, and only 10% outside the snowboarding route. 32% of the respondents experienced injuries during snowboarding in a snow park. As many as 18% of all injuries took place during snowboarding on an artificial slope.

Most snowboard accidents happen on the snowboarding route (79%). 10% of accidents take place in the mountainous area. A small percentage of injuries take place in snow parks (5%), outside the route (3%) and near ski-lifts (2%).

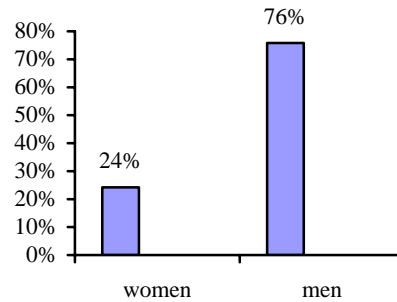


Figure 5. Sex of those who sustained injuries – GOPR data

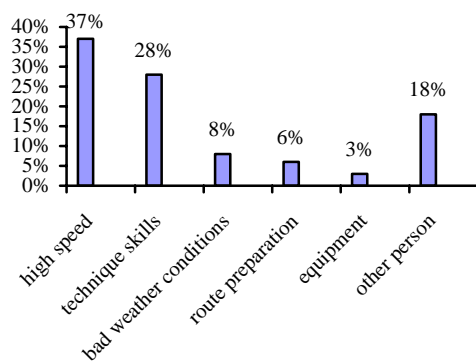


Figure 3. Reasons for injuries – questionnaire survey

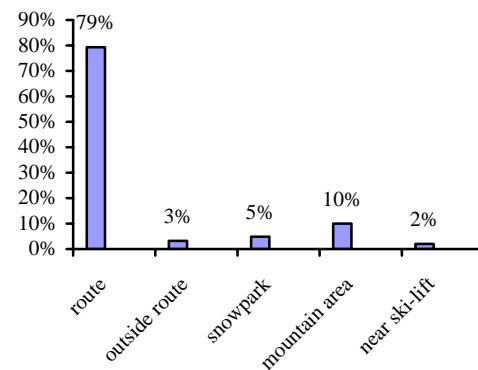


Figure 6. Place where injuries happen – GOPR data

The collected data (Figure 5) show that men experienced 76% of all accidents. Female snowboarders were involved only in 24% of accidents.

Fractures (39%), dislocations (23%) and bruises (16%) constitute the greatest percentage of the sustained injuries. Sprains (13%), wounds (6%) and strains (2%) occur considerably less frequently. Most injuries are wrist injuries (25%) and forearm injuries (21%). Knee injuries (16%) and head injuries (14%) constitute a smaller, yet still considerable, percentage.

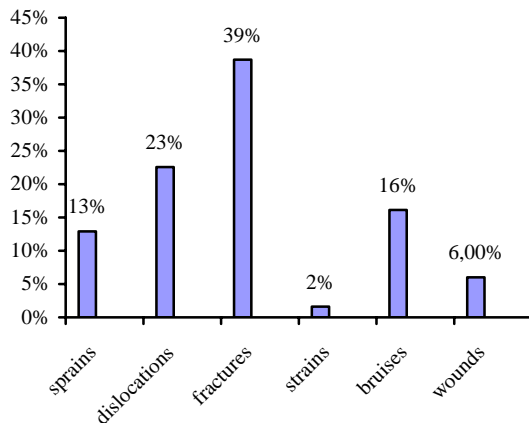


Figure 7. Type of injuries – GOPR data

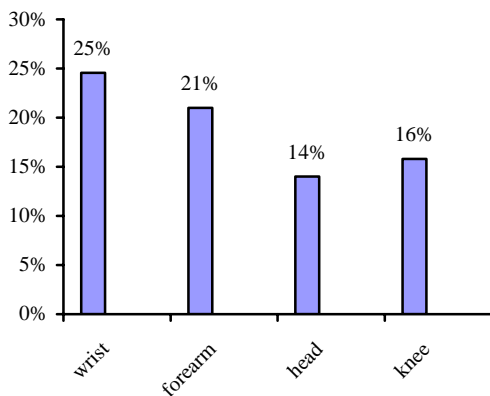


Figure 8. Body parts injuries – GOPR data

The analysis of the obtained data also proves that most of the accidents take place in fine weather conditions (71%). Only 29% of the accidents happened during weather breaks. 53% of the injuries recorded by the GOPR happened in the afternoon, and 44% in the morning. The smallest number of injuries was recorded in the evening (3%).

DISCUSSION

On the basis of the results of the conducted survey, it should be stated that snowboard belongs to sports in which a considerable number of injuries happen. Such injuries as bruises, fractures and dislocations take place most frequently. The differences between the types of injuries listed in the questionnaire and the data from the GOPR accident cards may result from the fact that professional help was called only in the case of serious injuries, which made it impossible or very hard for the victims to move on their own. Such parts of the snowboarder's body as wrists, forearms, knees, and the head are most prone to injuries. Accidents happen most frequently in the afternoon on sunny days, which is thought to be caused by considerable fatigue increasing during the day and a hindering impact of a popular lunchtime break on the body. Among the reasons for injuries, speedy snowboarding and insufficient skills are the most significant. The above-mentioned diagnosis proves that it is necessary to achieve and continuously improve snowboard technique, and it indicates a constant need to understand the risk associated with bravado, which may pose a serious threat to all users of slopes when combined with the lack of technique. This conclusion seems to be reflected in various studies on prevention of skiing injuries [1, 7] which, despite considerable differences between causes and nature of injuries in skiing and snowboarding, point to the same problem. These elements of prevention against injuries consist in appropriate organization, technique and methodology of teaching [1], individual preparation for the season, assessment of one's own skills and maintaining self-discipline [7]. The route preparation, weather conditions, and equipment are of less importance for the extent of risk of injury during snowboarding. The obtained results of the equipment influence on the occurrence of injuries indicate that the snowboard equipment is well-constructed and ensures a high level of safety rather than increasing the risk of injury. At the same time, the research results show that a lot of injuries take place on the artificial surface. The highest number of accidents take place on a skiing route. It is surprising that the percentage of injuries occurring in snow parks is lower than expected. This may testify to a considerable awareness of risks among those who use the snow parks and to application of relevant measures to minimize the risk of injury, which constitute another issue requiring further research.

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