

**Epidemiologic of Winter Sports Injuries in the Tube Riding Track of Kohrang City, Shahrekord, Iran**

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**Abstract:** Winter sports are fun and exciting and at the same time may be quite risky. Injuries and damages increase if environment, tools and equipments are not standard or athletes are not sufficiently skilled. Tube riding is one of winter sports. Because of a tube rider does not have any control over tube speed, route guidance and does not brake and stop, As a result of injuries in tube riding is very high. This study aims that the epidemiologic investigation of injuries caused by tube riding in the track of Kohrang city in 2009. In this retrospective census study data collected by using the mission records and available documents in the emergency station (115) of Kohrang city, in winter 2009. Total performed missions of the station from June 22, 2009 (no earlier statistics were available in that station) to March 20, 2010 included 216 missions, 183 missions were nonrelated to the tube riding track and 33 cases included those who had been injured in the tube riding track. The injuries caused by tube riding had occurred on Thursdays and Fridays of November, December and January months (on non-vacations days the track is closed). The injuries had all been injured at the tube riding track and the skiing track had no injured person during that year. Of the total 33 people who had been injured at the tube riding track, 15 were women and 18 were men within the age range of 8 to 52 years old. 6 head traumas, one femoral fracture, one facial trauma and nose fracture, 1 chest and sternum trauma, 8 hand traumas, 5 multiple traumas, and 3 lower organs traumas had been recorded. Considering the large number of injured people and the fact that 15% of the missions of that station had been performed only within 24 days of the year (Thursdays and Fridays of November, December and January months), it seems necessary to make managements to reduce the injuries caused by tube riding. Moreover, it is recommended that the information of injured people and those who refer to the clinic is recorded completely and exactly.

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**1. Introduction**

**Tube Riding:** One of the most popular winter sports in our country Iran is a tube riding. Tube riding is a winter sports or better winter recreation that people using inflated car tubes as a device like a sledge for sliding down on gradient snow.

Abedi et al (2009) named tube riding winter sport as a non-standard sport, and stated that the amount and severity of injuries resulting from this non standard winter sport is a very high. As well as have expressed that the non standard tubes as a sport tool is the main causes of injuries in tubes riding winter sports. Since the athlete does not have any control over the tube (in terms of speed control and guidance of the tube in the along the track), the extent and severity of injuries is very high than any other winter sports (skiing, snowboarding, sleigh rides,

etc). In addition to the nonstandard tube as an sports vehicle, the other factors causing injuries in nonstandard tube riding sports can be included: the lack of standard and special track for tube riding, Encounter tube riders with natural obstacles (trees, shrubs, rocks, ups and downs the surface of track and...), artificial barriers (lights, fences, tables, etc), the overturning tube rider on the ramp of track, encounter tube rider with other tube riders on the surface of track because a lot of tube riders at the same time crowded on the track, encounter tube rider with the viewers that standing around the track, encounter tube riding with people who are climbing from track, On the other hand, because the players ride the tube as groups and collectively, if the event of accident injured several people at the same time (Abedi et al; 2009).

Sport and recreational activities are one of the important parts of a healthy lifestyle (Marshall and Guskiewicz 2003; Shephard, 2003). Sport activities have changed into one of the most important parts of modern life. Most people want much more times to spend for fun and entertainment and an increasing trend can be seen in the number of people who join the clubs and stadiums (Majewski et al., 2006). However, physical and mental benefits and advantages of that may be reduced as the result of the injuries caused by such activities (Marshall and Guskiewicz, 2003; Shephard, 2003). Skiing is the desirable sport of about 200 million people throughout the world (Hunter, 1999) and snowboard is a winter sport whose popularity has been significantly increased within the recent two decades (Muller et al., 2000). Based on the report of National Sports Institute, each year nearly 10 million people do Alpine skiing and more than two and half million people do snowboarding (Rash, 2002). Skiing, snowboarding, sleigh riding and other winter sports are very interesting while at the same time being dangerous (Rash 2002). Physical and mental advantages of a sport may be reduced as the result of injuries caused by that (Marshall and Guskiewicz, 2003; Shephard, 2003). Fortunately, most of the injuries caused as the result of winter sports are small and light though participation in such sports may result in important effects (Ganter et al., 2003). Sports are mostly accompanied with a high proportion of injuries, e.g., snowboarding, skating and climbing which are increasingly becoming popular and common (Majewski et al., 2006). Since sports are mostly accompanied with a high proportion of injuries and are increasingly becoming popular and common (Steinbrück, 1999) and since the level of injuries increases simultaneous to the increase of popularity of sports (Majewski et al., 2006) and since the treatment of sport injuries are most often deathlike, irremediable and cost and time consuming, preventive strategies are therefore highly important. Successful prevention and control of injuries requires accurate information of problem extensiveness for pre and post interventions. Identification of causes, risk factors and identification of accurate mechanism of injury should be performed before beginning any program to prevent sport injuries. Moreover, measurement of injury should include an accurate and standard definition of injury and its severity, a systematic method to collect information as well as identification of the population exposed at risk and the relevant time (Parkari, 2001). Considering the mentioned subjects, high level of injuries caused by winter sports in Kohrang Zone and lack of any investigation and research in this field, the researcher

decided to investigate the experiences of those who had been injured in winter sports in the said zone.

## 2. Material and Methods

In this retrospective census study data collected by using the available documents in the emergency station (115) of Kohrang city, in the manner that by referring to the said station, all the missions performed following the accidents relevant to tube riding in winter 2009 that had been recorded in the mission forms were investigated. The people who had been injured in the track were either transferred by the emergency station ambulance or personally referred to the clinic of Kohrang city or were transferred by personal vehicles. There is no statistics of those who were injured in the tube riding track and referred to the clinic (due to non-separation of injured people based on the causes of accidents) or those who were transferred by personal vehicles.

## 3. Results

Total performed missions of the station from June 22, 2009 (no earlier statistics were available in that station) to March 20, 2010 included 216 missions out of which 64 cases included accidents, 78 were related to cases such as cardiac, respiratory, etc., 41 cases were related to the missions between the stations (transfers from Kohrang clinic to the Farsan city hospital) and 33 cases included those who had been injured in the tube riding track. The injuries caused by tube riding had occurred on Thursdays and Fridays of November, December and January months, just 3 months of year (on non-vacation days the track is closed). Of the total 33 people who had been injured at the tube riding track, 15 were women and 18 were men within the age range of 8 to 52 years old. 6 head traumas (18%), 6 waistline traumas (18%), one femoral fracture (3%), one facial trauma and nose fracture (3%), one chest and sternum trauma (3%), 4 hand cut offs (12%), 4 hand traumas (12%), 5 multiple traumas (15%), and 3 lower organs traumas (9%) have been recorded. Of the total above statistics, two injured people did not accept to be transferred by ambulance and were instead transferred by personal vehicles. 22 injured people were transferred to the clinic of Kohrang city and 8 were transferred to the hospital.

## 4. Discussions

Paul et al. (2009) has stated that chest trauma is the second cause of injury in skiing and snowboarding after head trauma and includes ribs, pneumothorax and hemothorax fractures. Unfortunately, no protective equipment has so far recommended for prevention from chest trauma. In a past-view study entitled "Investigating the Risk of

Factors, Model and Level of Injuries Caused by Skiing and Snowboarding in the Alps" conducted within 1996-2006, Paul et al. showed that a total number 196 people had been injured within the said 10 years (56.6% skiers and 43.5% snowboarders) out of which 43 people needed to be hospitalized in ICU and 5 people died (4 cerebral strokes and 1 cardiac arrest). Most of the injuries were caused by falling on the ground and hitting against natural objects. The most common injuries included head trauma followed by chest trauma, spinal cord trauma and lower organs trauma as the result of which 79 injured people needed surgical operations. Langran (2002) in a retrospective study entitled "Model of Injuries in Ski boarding in 2002" conducted within 1999-2002 in the Caringorm zone of Scotland, Langran showed that a daily number of 21,140 people came to that zone for ski boarding within 252 days of the year and that 84 types of injuries in 80 people had been recorded within 2 years. The primary reasons of injuries of these people included 65 cases of falling on the ground, 3 cases of deviation to the left, 8 cases of clash and accident and 4 cases of injury due to jumping. Factors of injuries included personal errors (68 cases), equipment deficiency (one case), clashing with other ski boards (one case), clashing with manmade obstacles (one case), clashing with natural obstacles (two cases) and unknown reasons (4 cases). Type of injuries included fractures (30 cases), wound and laceration (7 cases), ligament stretch (39 cases), bruising and soreness (5 cases), cerebral contusion and consciousness loss (two cases) and dislocation (one case). Of the total 80 injured people, 2 of them had used helmets but 78 had not. Preventive strategies therefore, are of great importance (Parkari, 2001). Considering that sports are mostly followed by a high ratio of injuries and that they are increasingly becoming popular among people (Steinbrück, 1999., Pazargadi et al., 2012; Khachian et al., 2012) and that injuries also increase simultaneous to the increased popularity of sports (Langran et al., 2006) and considering that treatment of sports injuries are mostly deathlike, irremediable, costly and time consuming, preventive strategies are therefore are highly important. One of these preventive strategies is the use of protective equipment such as helmet and back protectors. However, no protective equipment is used in tube riding and the level of injuries caused to head and waistline include 18%. In a retrospective study entitled "Investigating the Risk of Factors, Model and Level of Injuries Caused by Skiing and Snowboarding in the Alps" conducted within 1996-2006, Paul et al. showed that despite the fact that head trauma was the most common injury; only a limited number of people (13%) had used helmets.

Several studies have indicated the advantages of using helmets in preventing the injuries caused by head trauma (Levy et al., 2007). Another study conducted by Sulheim et al. has shown that use of a helmet reduces the risk of cerebral injury in both skiing and snowboarding groups up to 60% (Sulheim et al., 2006). In a study entitled investigating the advantages of back protectors in winter sports in relation to equipment safety conducted in 2010, Michael et al. showed that using and wearing back protectors prevent from spinal canal injuries. Most injuries have occurred in relation to falling on the ground and clashing with natural objects (Paul et al., 2009). Moreover, one of the causes of injury in this study included clashing of tube riders with natural objects (shrubs, large and small stones, etc.), other tube riders and other people. Giti et al. (2001) noted beginner tube riders and use of non-standard equipment as other causes of injury. This is while tube itself is a dangerous and non-standard equipment and tube riders do not have any control on it.

#### **Conclusion**

Considering high number of injured people and the fact that 15% of the missions of that station had been performed only within 24 days of the year (Thursdays and Fridays of November, December and January months), making arrangements to reduce the level of injuries caused by tube riding seems to be necessary. Moreover, it is recommended that the information of injured people and those who refer to the clinic and emergency station is recorded completely and exactly.

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