

ROAD ACCIDENTS – ANALYSIS, EVOLUTION CAUSES AND PREVENTION MEASURES

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Abstract

Year by year, car accidents have marked an upward trend in Romania, due to the enlargement of the national car park and the increase in the number of driving licenses holders, in the context in which the infrastructure of the existing road network has not been adapted to the requirements imposed by circulation realities. These conditions, associated with driving errors or the willful violation of traffic rules, represent the support of traffic accidents. In Romania, the incidence associated with traffic accidents with victims is of 136.28‰. The total number of traffic accidents in the period 2007-2011, at the level of Bihor county, represents 6.75% from the total number of traffic accidents in Romania, the new cases of seriously injured persons in car accidents is of 2.14% and the number of deaths resulting from road accidents represents a share of 2.57%. The main causes generating accidents are speed, not giving the right of way and the pedestrians' lack of discipline. Therefore drivers and pedestrians alike should adopt measures to prevent traffic accidents.

Key words: traffic accidents, casualties, deaths, causes, prevention

INTRODUCTION

At global level, about 1.3 million people die in road accidents and more than 50 million are injured every year (European Road Statistics 2008, WHO 2009). In Romania, 3000 persons die annually in car accidents. Among mortality causes road accidents rank second, after myocardial infarction (Elvik R, T. Vaa, 2004). The main cause of death among persons aged 5 to 29 years is represented by car accidents and nearly half of those who die in such tragedies are pedestrians, cyclists or motorcyclists (Stevenson M. et al. 2008). This papers aims to identify the number of deaths and illnesses associated with car accidents, as well as the causes of car accidents, with the view of putting into practice preventive methods and initiate education for health among the population at risk.

MATERIAL AND METHOD

In the retrospective and descriptive observational study, conducted in Bihor county in the period 2007-2011, population type information has been collected, namely the annual number of deaths and illnesses associated with car accidents.

The sources of primary data have been the results recorded in current consultations, performed in outpatient clinics or in hospitals, as well as periodic reports and statistical bulletins.

The measurement, description and analysis of deaths and illnesses associated with car accidents have been used as study methods.

RESULTS AND DISSCUSIONS

According to a comprehensive report presented by the World Health Organization, 90% of road fatalities occur in developing countries, and four fifths of those killed in such circumstances are people who were not in cars (WHO 2002).

The most complete data concerning the standardized rate of road accidents with casualties in Europe are provided by world health organization (WHO, 2009); in 2008 Romania reported an incidence through road accidents with casualties of 136.28‰, among the first in this respect being Bosnia and Herzegovina – 1042.17‰, Austria – 469.89‰, Slovenia 449.4‰, and on the last places: Bulgaria – 105.53‰, Republic of Moldova – 80.36‰ and Albania – 37.96‰ (fig. 1.)

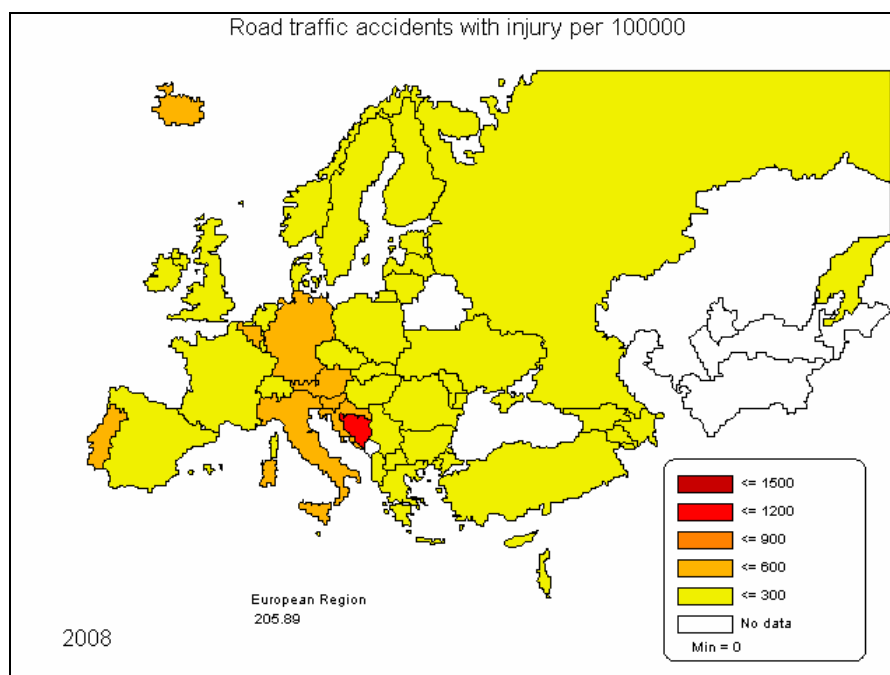


Fig. 1. Road accidents with casualties per 100000 people, in Europe, in 2008 (Source WHO/Europe, European HFA Database, March 2012)

At European level, during the last 30 years, the number of road accidents has presented small differences from one year to another, the trend being descendant, with values of 233.12‰ in 1980, going down to 195.59‰ in 2009. However, in Romania an upward trend has been recorded, with relatively constant values (23.96‰) in the period 1980-1988, but with a doubling of road accidents with victims (about 41‰) after 1998 until 2004, and from 2005 on (91.5‰), the reported values are 2-3 times higher than in previous years, as in 2008 a number of 136.28‰ road accidents with casualties were reported (fig. 2).

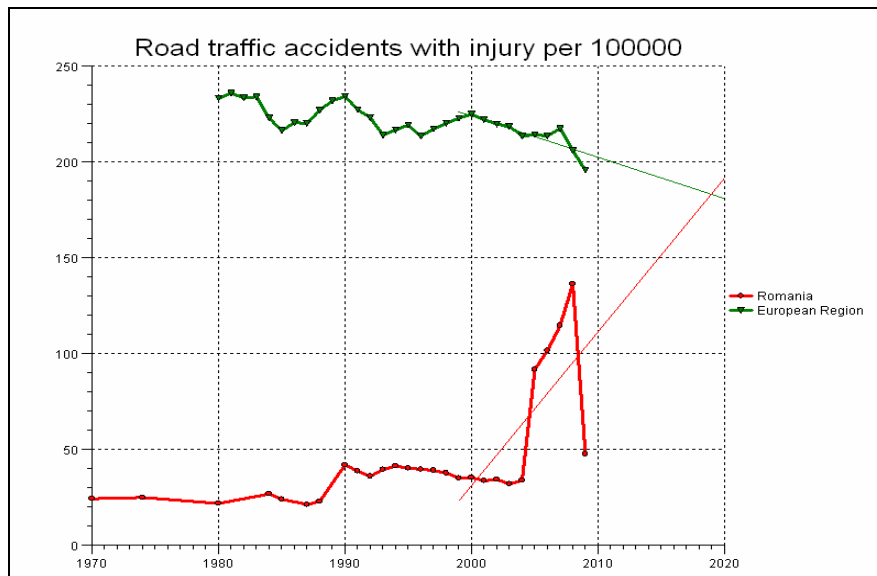


Fig. 2. The evolution of road accidents with casualties per 100000 inhabitants, Romania, compared to the European region
(Source WHO/Europe, European HFA Database, March 2012)

The main causes of road accidents in Romania (2008), according to data provided by the statistics of Romanian traffic police, are (www.politiarutiera.ro):

- Speed not adapted to visibility conditions and road situation – 324 accidents (30.8% of the total number of accidents produced by drivers),
- Starting movement, changing direction, handling – 154 (14.6%),
- Exceeding the established speed limit – 148 (14.1%),
- Crisscrossing pedestrians passages – 138 (13.1%),
- Not giving the right of way in intersections – 98 (9.3%),
- Driving under the influence of alcohol – 79 (7.5%)
- Driving on traffic lanes 64 (6.1%)

A comparative study regarding the total number of road accidents in Romania and in Bihor county, in the period 2007-2011, indicates that road accidents in Bihor county represent 6.05% in 2007, 6.24% in 2008, 7.23% in 2009, 6.23% in 2010 and 6.96% in 2011 of the total number of car accidents registered in Romania (fig. 3).

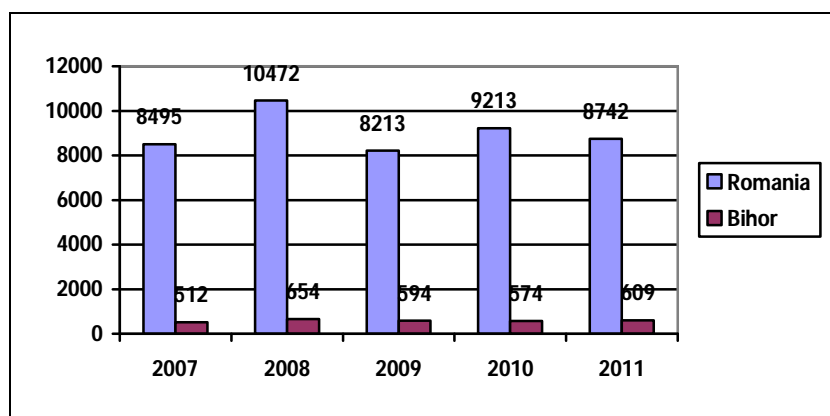


Fig. 3. The total number of road accidents in Romania and in Bihor county in the period 2007-2011

In the period 2007-2011, the share of people seriously injured in road accidents in Romania represents 0.5% of the total number of illnesses, and the new cases of seriously injured people in road accidents in Bihor County, from the total of seriously injured persons in road accidents in Romania represent 2.14% (table 1).

Table 1

The number of new cases of persons seriously injured in road accidents in Bihor county and in Romania, in the period 2007-2011

Year	2007	2008	2009	2010	2011
Total new cases of illnesses in Romania	14286645	14603827	15406810	15643281	15735142
Total number of people seriously injured in road accidents in Romania	7078	9260	8477	9096	8252
New cases of persons seriously wounded in road accidents in Romania at % from the total number of illnesses	0,049%	0,063%	0,055%	0,058%	0,052%
Total number of people seriously injured in road accidents in Bihor county	167	170	174	192	197

The number of deaths resulting from road accidents registered in Bihor county accounts for 2.64% in 2007 and 2.48% in 2011, of all deaths registered in Romania (fig. 4).

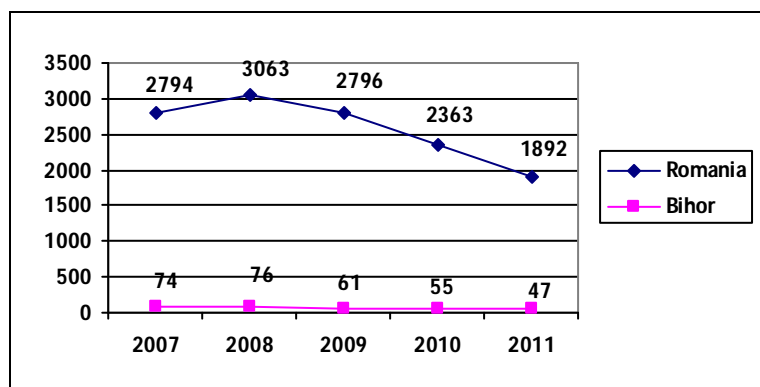


Fig. 4- The number of deaths resulting from road accidents in Romania and in Bihor county in the period 2007-2011

The main causes generating accidents at the level of Bihor county in 2009 were speed, not giving the right of way (especially in Oradea municipality), pedestrians' lack of discipline, carelessness at shifting the road lane and illegal overtaking (fig. 5).

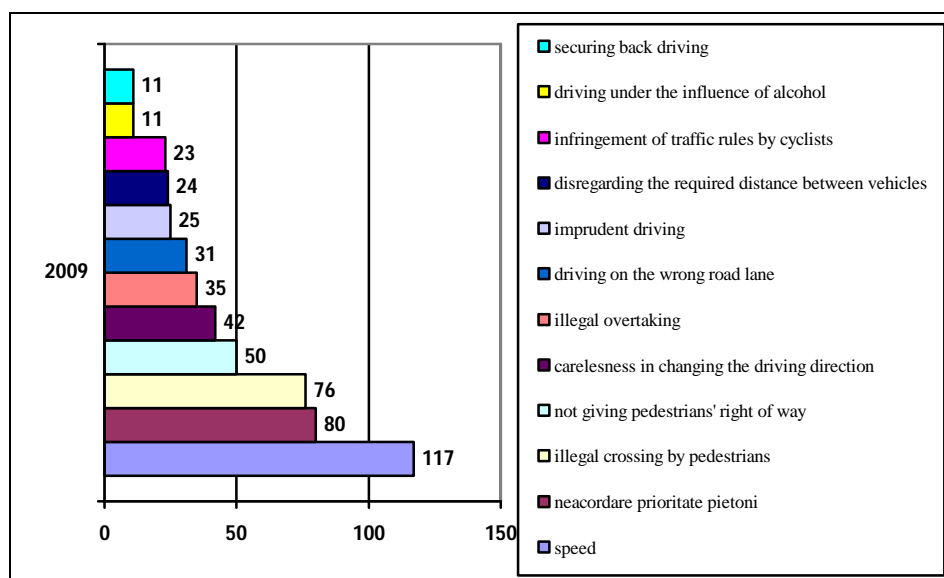


Fig. 5. Causes of road accidents in Bihor county in 2009

In order to counteract the main causes generating accidents, 100958 sanctions were imposed in 2011 by the policemen from Bihor county traffic police (fig. 6).

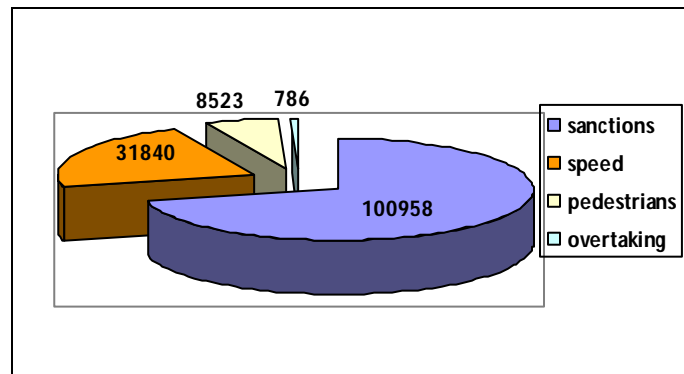


Fig. 6- Sanctions aimed at combating the main causes generating accidents

It is necessary to adopt measures to prevent road accidents, this responsibility being associated both with policemen and doctors and specialists in public health, the latter being required to inform, educate and communicate with the members of the community, with an insistence upon the preventive behavior while driving (visibility conditions, weather conditions, the situation of the road, traffic conditions). For complete information, each participant to the road traffic should be aware of the main causes generating accidents (Bener A. 2005). Health problems, such as vision defects, cardiovascular diseases and insulin-dependent diabetes represent real risks.

The main accident causes should be established and, for each of these, reduction measures should be adopted. Among these one might mention (IRTAD 2008, 2009):

- Not adapting the speed to traffic conditions – measures: increasing the degree of drivers' awareness, during driving classes and through mass-media, as regards the danger of not adapting speed; increasing police presence on roads when traffic is overcrowded or when the weather is unfavorable;
- Inadequate training of drivers – measures: increasing the number of driving lessons in the driving school, where the focus should be not only on acquiring the skills of driving a car, but also those associated with the correct behavior in traffic; tightening the conditions of access to the driving exam (especially the psychological test), as well as the conditions of promoting it (increasing the number of tests before obtaining the driving license);
- Lack of attention while driving – measures: tightening penalties for the lack of attention, for example suspension of the driving license if using the mobile phone without hands free device while driving;

- Excessive speed – measures: tightening sanctions for violating speed limits, increasing the awareness of drivers as regards the danger represented by excessive speed, etc.

Traffic safety on public roads may be guaranteed only when the following conditions are observed simultaneously ([www.internationaltransportforum](http://www.internationaltransportforum.org), 2012): the strict observance, by drivers and pedestrians alike, of road traffic rules; ensuring good technical conditions for vehicles; the appropriate maintenance of roads; the appropriate information of drivers as regards road conditions and the required driving regimen, by installing road signs and, in some cases, by directing traffic.

CONCLUSIONS

In Romania, the incidence of road accident victims is of 136.28‰, an increase of this tendency being registered in the last years, the highest values occurring in Bosnia and Herzegovina – 1042.17‰, and the lowest ones in Albania – 37.96‰.

The total number of road accidents in the period 2007 – 2011, in Bihor county, represents 6.75% from the total number of road accidents in Romania, the new cases of people seriously wounded in car accidents representing 2.14%, and the number of deaths resulting from car accidents representing a share of 2.57%.

The main causes generating accidents are speed, not giving the right of way (especially in Oradea municipality), and pedestrians' lack of discipline.

It is necessary to adopt measures to prevent road accidents, both by drivers and by pedestrians, and involve specialists in different sectors: police, road administration, health, car production industry.

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