

## ABSTRACT

Road accidents are related to the development of the automotive industry. In Poland, measures are taken to reduce injury and mortality. These activities have overlapped critical political, economic, social, and legal processes in the last few decades.

The study aimed to compare the death rate due to road accidents in Bialystok and its vicinity in three selected decades (1976-1985, 1991-2000, 2006-2015) in terms of political, economic, and legal changes. Also, the aim of a study was to identify risk factors for fatal road accidents.

The material consisted of 11491 reports from medico-legal post-mortem examinations carried out at the Forensic Medicine Division Medical University of Bialystok in 1976-1985, 1991-2000, and 2006-2015.

Cases of road fatalities belonging to the specific categories of road users were distinguished: car drivers, car passengers, pedestrians, motorcyclists, and cyclists. Then, the study group was characterized, taking into account the following criteria: sex, age, seasonality, place of the road accident, cause of death (anatomical location of fatal injuries), survival time of the victim after the accident, sobriety, nationality, and times. Data characterizing the study group have been compiled separately for each decade. Then, the obtained results were subjected to comparative statistical analysis using the Statistica 10.0 program using the chi-square test. The threshold of statistical significance was set at the level of 0.05 ( $p \leq 0.05$ ). In the analyzed decades, 2785 road fatalities were identified, of which 664 in 1976-1985, 1142 in 1991-2000, and 979 in 2006-2015.

The statistically significant results were found in the following criteria: type of road traffic participation, place of the event, survival time, cause of death, age, daily seasonality, seasonality of seasons, citizenship, and diversity.

For each of the decades, the percentages of victims were similar by gender (male dominant), by weekly seasonality, and by sobriety. At the same time, young people were the most significant number of victims.

The conducted research allowed to draw conclusions, the most important of which include the following:

- an increasing number of road fatalities in the last decade of the 20th century, and a decreasing number of road fatalities at the beginning of the 21st century was found;
- ethyl alcohol remains an invariable risk factor in road fatalities;

- the increase in the motorization of the Podlasie society did not increase the risk of fatal road accidents;
- the introduction to the Polish road law in 2004 of a vehicle speed limit of 50 km/h in built-up areas between 05:00 and 23:00 did not bring the expected results in the form of reducing the frequency of fatal road accidents during the day;
- the introduction in 2007 of the statutory obligation to use headlights in cars throughout the year in Poland did not reduce the mortality in spring and summer;
- modernization of roads after Poland's accession to the European Union and constant improvement of the design of vehicles did not reduce the mortality rate among car users;
- a decrease in the percentage of deaths among cyclists indicates that measures to separate cycling from motor vehicle traffic have improved safety;
- preventive measures applied to children resulted in the improvement of safety among them.