

Road Traffic Accidents Epidemiology: Evaluations on a 15 Years Surveillance Program from an Emergency Care Unit (ECU) in Northern Italy

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INTRODUCTION

Road accidents cause 20-50 millions injuries every year and 2.35 millions deaths, representing the eighth cause of death in the general population and the first in people between 5 and 29 years of age [1]. Human and health care costs of the phenomenon have a significant impact on the population and the institutions, with about 280 billions of euros spent in Europe each year [2]. Legal regulations, educational interventions and new safety technologies have the potential of lowering the number and severity of road accidents [3]

AIMS

To evaluate the prevalence, characteristics and severity of road accidents and their changes through the 16 years of observation and to estimate the impact of recent lifestyle and legislation changes on road accident epidemiology.

METHODS

We retrospectively evaluated data from the DATIS/SINI-ACA registry considering all ECU admissions to one of the main hospitals in Genoa due to road accidents from January 1st, 2008 to December 31th, 2023. The observation period was divided into subgroups considering legal regulation changes for further studies. We used the data software STATA 14.2 SE® for data analysis. We described the events using absolute and percentage frequencies. Chi-squared test (χ^2) had been used to evaluate differences between categorical

variables, p-values <0.05 were considered as statistically significant.

RESULTS

During the 16 years of the study (2008-2023) we documented a total of 33.708 road accidents, with an overall lowering trend and a dramatic deflection in 2020 along with the COVID pandemic. Our local data followed a similar trend of national registries but with a greater percentage decline during the years. The majority of the accidents involved motorbikes (16.779) followed by cars (6.379), public transportation services (2.467), pedestrians (1.620), bicycles (1542), microcars (685), and heavy vehicles (225). Nearly half of the victims (49,78%) were motorcyclists and the drivers were the most frequently involved (55,08%); in total 19.104 (56,67%) of injured people were males and 14.604 (44,33%) females, most commonly in the 20-29 years (7041 patients, 20,89%) and e 40-49 years (6550 patients,19,43%) age-range. Triage codes had been classified as "urgent" in 20,71% of the events; female victims were more likely to show lower priority injuries compared with males. Accidents with bicycles, microcars and pedestrians had a greater chance of receiving higher priority triage codes. Pandemic effects on people's habits and both national and local policies about sustainable mobility caused interesting changes in road accidents epidemiology for what concerns the kind of involved vehicles and the severity of the events.

CONCLUSIONS

Road safety is a crucial issue in public health. Collecting and interpreting data on road accidents is an important tool for evaluating and implementing preventive strategies such as changes in legal regulations. In the next future we are planning to analyze data on drugs and alcohol-related events aiming to quantify the effect of the recently approved changes in traffic laws.

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