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INJURY AND MORTALITY IN CAR ACCIDENTS

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Relevance

Every 30 seconds, one person on Earth is killed and 10 are seriously injured in car accidents. According to the scientific and analytical data studied, about 1.35 million people die prematurely in the world every year as a result of car accidents, and more than 50 million people are injured. In addition to injury, disability, and death, car accidents also cause significant economic losses, ranging from \$65 billion to \$100 billion annually. Notably, 93% of motor vehicle crash deaths occur among low- and middle-income households, and nearly 60% of motor vehicle crashes worldwide occur in economically disadvantaged countries [1,5,6]. According to the analysis, mortality from car accidents is higher than from malaria, HIV and tuberculosis. In 2016, more than 440,000 young people aged 5 to 29 died on the world's roads. According to the data, 40% of automobiles are found in high-income countries, where car accident deaths account for 7% of total road traffic deaths. Africa has the highest death rate at 26.6 per 100,000 population, followed by Southeast Asia at 20.7. Death rates were lowest in Europe, with 9.3 deaths per 100,000 people and 3.1 deaths in the United Kingdom. About three-quarters (73%) of deaths in car accidents worldwide occur in men under 25 years of age, which is almost 3 times higher than in women.

It is noteworthy that with an increase in vehicle speed by 1%, the risk of death in an accident increases by 3-4% [2,9]. 40% of automobiles are found in high-income countries, where motor vehicle deaths account for 7% of total road traffic deaths. Africa has the highest death rate at 26.6 per 100,000 population, followed by Southeast Asia at 20.7. Death rates were lowest in Europe, with 9.3 deaths per 100,000 people and 3.1 deaths in the United Kingdom. About three-quarters (73%) of deaths in car accidents worldwide occur in men under 25 years of age, which is almost 3 times higher than in women. It is noteworthy that with an increase in vehicle speed by 1%, the risk of death in an accident increases by 3-4% [2,9]. 40% of automobiles are found in high-income countries, where motor vehicle deaths account for 7% of total road traffic deaths. Africa has the highest death rate at 26.6 per 100,000 population, followed by Southeast Asia at 20.7. Death rates were lowest in Europe, with 9.3 deaths per 100,000 people and 3.1 deaths in the United Kingdom. About three-quarters (73%) of deaths in car accidents worldwide occur in men under 25 years of age, which is almost 3 times higher than in women. It is noteworthy that with an increase in vehicle speed by 1%,

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According to the scientific conclusion of A.V. Sakharov (2011), in Russia there are 131 car accidents per 100,000 inhabitants. Among road traffic accidents, the most common are collisions with motor vehicles (43.3%) and collisions with pedestrians (28%), with the majority of accidents caused by non-compliance with traffic rules (86.5%). The mortality rate was 26 per 100,000 population, with 76.3% of them being men aged 20 to 40 years. The disability rate was 4.5 per 100,000 population in 2008, with a slight decline among adults, but nearly doubled among children to 2.1 per 100,000 children. The second and third groups of disabled people made up the majority of disabled people. Most of the victims were in the trauma department. 55.4% of patients were male, 56.5% of them were aged 20-40 years [8,17,19]. In Russia, 60-80 people die every day as a result of car accidents [4]. In 2011, 10,611 road accidents were registered in Uzbekistan, in which 2,161 deaths and 112,228 injuries were recorded. It is noteworthy that 3,896,000 traffic violations were registered in Uzbekistan, of which 1,588,000 were serious [11]. It was noted that the most dangerous days for traffic accidents are the fifth and sixth days of the week, with special attention paid to Sundays and Mondays. According to the authors, for 10 months of 2016, 58,885

road accidents were registered, in which 6,932 people died and 90,314 people were injured.

This is followed by collisions with pedestrians, with a total of 41,370 accidents, 4,667 deaths and 38,981 injuries occurring over the past period [3,10,11]. Every year, more than 30,000 people die and 200,000 are injured on Russian roads. According to statistics, every tenth case of a car accident occurs in children, while more than 1,500 children die, and 20,000 minors are injured and most of them become disabled for life [4,18,20].

Research in recent years has identified the following health-related risk factors for road safety: untreated diabetes, history of myocardial infarction, use of glasses when driving, myopia, insomnia (risk of falling asleep), frequent fatigue, anxiety, feelings of depression and use of antidepressants, previous stroke [5].

WHO predicts that the number of deaths from road accidents will increase by 65% between 2000 and 2020, mainly (80%) in developing countries [9]. But already today, medical and economic damage from car accidents amounts to 1 to 3% of gross domestic product in various countries (total damage is approximately \$518 billion per year) [6].

The results of special studies traditionally reveal low health indicators of drivers. Back in the 80s. An analysis of 22 epidemiological studies of the health status of bus drivers was conducted for three groups of diseases: 1) cardiovascular diseases (CVD), including arterial hypertension (AH); 2) diseases of the gastrointestinal tract (GIT), including peptic ulcers and intestinal pathologies; 3) diseases of the musculoskeletal system, including pain syndromes of the cervical and lumbosacral levels.

It was found that bus drivers, compared with workers of other professional groups, had higher rates of mortality, morbidity and temporary disability for the above groups of diseases [10].

In recent years, it has been established that exposure to occupational risk factors in truck drivers (long working hours, shift work and sleep deprivation, exposure to noise and vibration, sedentary lifestyle and unhealthy diet, exposure to diesel exhaust gases and other stressors) led to the development of a number of disorders, among which CVD occupied a significant place [11]. Cardiovascular pathology very often limits the ability of drivers to drive vehicles, as it potentially increases the risk of accidents. It was found that in the group of sick drivers with CVD, the number of accidents doubled [12].

A survey of intercity bus drivers (70% were under 45 years of age) revealed a high incidence of CVD risk factors, such as obesity, hypertension, hyperlipidemia, hyperglycemia against the background of low physical activity, sedentary lifestyle, high-calorie and unbalanced diet [13].

Risk factors for CVD traditionally include the high level of stress that characterizes the work of drivers. The stress index correlated with a high level of atherogenic risk [14]. The shift work nature of drivers was also a risk factor for chronic diseases, including CVD. There is evidence that the prevalence of CVD in the group of professional drivers depended on a history of car accidents [15].

An attempt was made to investigate the relationship between body mass index, fatigue and safety violations in a group of professional heavy truck drivers. Probability calculations found that obese individuals were 1.22–1.69 times more likely to report increased fatigue than nonobese individuals. It was also found that obese individuals had a 1.37 times higher risk of critical safety violations and were 1.99 times more likely to feel fatigued in critical situations [16].

The purpose of the study

Study and assessment of the dynamics of road traffic accidents (RTA), injuries and deaths in the Khorezm region and the impact of cardiovascular diseases on them for the period 2017-2021.

Materials and methods

1343 cases of road accidents recorded in the reports of the road patrol service of the Khorezm region for 2017-2021 were studied. In 2017, -263 in 2017, -258 in 2018, -245 in 2019, 242 in 2020 and 335 in 2021 traffic accidents were registered on the region's roads. When statistically processing the data obtained, social-hygienic and sanitary-statistical methods were widely used.

Results and discussions

Research shows that for 2017-2021, when comparing the average percentage of road accidents in Khorezm region, the highest percentage of 25% was observed in 2021 (335), and the lowest percentage was observed in 2020, 18% (242) (1- table). Percentage difference compared to five-year average (20%)

Table No. 1

Level of road accidents in Khorezm region for 2017-2021.

Years	Degree of traffic accidents	Relative difference over the 5-year period (268.6)	Percentage of years (%)	Difference compared to the five-year average (20%)
2017	263	-5.6	19.6%	-0.4%
2018	258	-10.6	19.2%	-0.8%
2019	245	-23.6	18.2%	-1.8%
2020	242	-26.6	18.0%	-2.0%
2021	335	+66.4	25.0%	+5.0%
5 year total	1343		100%	

It should be noted that in 2019, the number and percentage of road traffic accidents were almost the same as in 2020, 245 and -23.6%, 242 and -26.6%, respectively. An analysis of such indicators in 2017 and 2018 was -5.6 and -10.6 in terms of meeting level and 19.6% and 19.2% in percentage terms, respectively. If we take the percentage of road traffic accidents to be an average of 20% per year over five years, then in 2017 and 2018 the difference in this indicator was -0.4% and -0.8%, respectively, and in 2019 and 2020, respectively -1 It was found to be 0.8% and -2.0%.

Table No. 2

Number of people whose lives are in danger as a result of each road traffic accident in Khorezm region (in absolute values)

Years	2017	2018	2019	2020	2021	5 year total
Number of road traffic accidents	263	258	245	242	335	1343
Total number of victims	304	284	275	270	354	1487
The ratio of each traffic accident	1.16	1.10	1.12	1.12	1.06	1.11
Number of injured	210	197	196	192	272	1067
The ratio of each traffic accident	0.8	0.76	0.8	0.79	0.81	0.79
Number of injured	94	87	79	78	82	420
The ratio of each traffic accident	0.36	0.34	0.32	0.32	0.24	0.31

Based on the data obtained, we compared the analysis of those whose lives were in danger for the years 2017-2021. Table No. 2 presents the results of the analysis for the total period of 2017-2021 in the Khorezm region, that is, for 5 years under our supervision. Of the 1,343 road traffic accidents that occurred on international, state, local, domestic and suburban streets in the Khorezm region, the lives of 1,487 people were in danger as a result of road traffic accidents. Analysis of this indicator by year shows that in 2017, the number of people whose lives were in danger as a result of 263 road accidents on the streets of an international, state, local, domestic and suburban nature in the Khorezm region amounted to 304 people.

In total, in 2018, 258 road accidents occurred on the roads of the Khorezm region, and the number of people whose lives were in danger was 284 people, of which 197

people were injured as a result of road accidents, and the remaining 87 people died as a result of road accidents. transport accidents.

In total, in 2019, 245 road accidents occurred on the streets of the Khorezm region, and the number of people whose lives were in danger was 275 people, of which 196 people were injured as a result of road accidents, and the remaining 79 people died as a result of road accidents. transport accidents.

In 2020, the number of people whose lives were in danger as a result of 242 road traffic accidents on regional roads was 270 people, of which 192 people were injured as a result of road traffic accidents, and 78 people died as a result of road traffic accidents. Road accidents, and in 2021, 335 road accidents occurred on regional roads, the number of people whose lives were in danger was 354, of which 272 were injured in a road accident, and the remaining 82 died in a road accident.

Using the data provided, we analyzed how many lives were put at risk due to each road traffic accident in 2017-2021 in absolute values (Table 2). The results obtained show that out of 1,343 road accidents that occurred on international, state, local, internal and suburban streets of Khorezm region for the period 2017-2021, 1,487 people's lives were in danger as a result of road accidents, then there for 5 years under our supervision. This shows that on average 1.11 people were injured in each road accident. If we compare this indicator with the number of victims as a result of each road accident (1067 people) - 0.79 people, and if we compare with the number of people,

Analysis of this indicator by year shows that in 2017, the threat to the lives of 304 people arose as a result of 263 road accidents that occurred on international, state, local, internal and suburban streets of the Khorezm region, which is an average of 1 per road accident. It shows that 16 people were injured. If we compare this figure with the number of victims as a result of each road accident in the current year (210 people) - 0.8 people, and if we compare it with the number of people who have lost their sight (94 people) - 0.36 people. In 2018, 284 people were injured in 258 road accidents on the roads of the Khorezm region, which means that on average 1.10 people were injured as a result of each road accident. If we compare the result obtained with the number of victims as a result of each road accident this year (197 people) - 0.76 people and if we compare it with the number of people who have lost their sight (87 people) - 0.34 people. Also, in 2019, only 245 road accidents occurred on the roads of the Khorezm region, resulting in a threat to the lives of 275 people, which indicates that as a result of each road accident, on average, 1.12 people were injured. If we compare the result with the number of people injured as a result of each road accident this year (196 people) - 0.8 people and if we compare it with the number of people who have lost their sight (79 people) - 0.32 people. In total, 242 traffic accidents occurred on the roads of the Khorezm region in 2020, as a result of which the lives of 270 people were

threatened, which indicates that on average 1.12 people were injured as a result of each road traffic accident. If we compare this figure with the number of people injured as a result of each road accident this year (192 people) - 0.79 people and if we compare it with the number of people who have lost their sight (78 people) - 0.32 people, this turns out to be the case. And finally, in 2021, a total of 335 road accidents occurred on the roads of the Khorezm region, with 354 people receiving life-threatening injuries, indicating that on average 1.06 people were injured as a result of each road traffic accident person.

Conclusions:

1. In many countries of the world, including the Republic of Uzbekistan, especially in countries with middle and low income levels, the level of road accidents remains high, which in turn creates huge medical, social, organizational and economic problems for the healthcare system of any country.

2. The health of drivers is one of the main factors determining road safety, the provision of which is becoming increasingly important due to rapid motorization and a large number of road accidents with high mortality and injuries with subsequent disability, especially in developing countries.

3. Drivers with CVD are more susceptible to accidents with subsequent injuries and deaths than healthy drivers. At the same time, professional drivers are at risk for CVD (atherosclerosis, arterial hypertension, coronary heart disease, stroke) due to a complex of professional and behavioral risk factors.

4. A 5-year analysis of traffic accidents on international, state, local, internal and suburban streets of the Khorezm region has maintained a high level of traffic accidents on these streets.

5. Injuries and deaths from road traffic accidents reported in the region remain relatively high, primarily on state, local and city roads, especially in 2021.

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