

Alcoholic Drinkers and Road Safety in the Republic of Slovenia

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ABSTRACT

In this study we were therefore interested in the percentage of road traffic offences (RTO) and road traffic accidents (RTA) involving inebriated drivers one year before and one year after the passing of the new Law on Road Traffic Safety (LRTS) as well as measures (referrals, punishments and final decisions on the revoking of driver's licences due to drunk driving).

One year before the passing of the new LRTS, there were 40,702 RTA-s in the Republic of Slovenia (12.2% caused by drunk drivers). The average alcohol concentration in exhaled air for those analysed was 1.19 g/kg. One year after the passing of this law there were 36,479 RTA-s (8.6% caused by drunk drivers). The average alcohol concentration in exhaled air for those analysed was 1,32 g/kg (the differences were statistically significant). In 13.8% cases the reason for performing a measurement of the alcohol concentration in exhaled air was an RTA with an average alcohol concentration in exhaled air of 1.22 g/kg and in 86.2% of cases an RTO with an average alcohol concentration in exhaled air of 1.25 g/kg (the differences were statistically significant). We found it interesting that the number of events involving lower concentrations decreased, but the percentage involving higher alcohol concentrations even increased.

The results of this study indicate without a doubt that the law was not successful enough with its repressive and preventative measures in the field of drunk drivers. Experts on alcohol believe that punishment cannot make alcoholics and other drivers abandon their behavioural patterns and stop driving under the influence of alcohol. This can be achieved only by treatment, and the present practice (police – misdemeanour counts – repeat general medical check-up) has been ineffective as prevention among alcoholic drivers. We therefore believe that supplements to the LRTS should be adopted urgently, that would contribute, through better medical selection, to a reduction in the number of drunk drivers behind the wheel, both those who are alcohol dependent (and should be referred to treatment).

Introduction

Road traffic accidents (RTAs) are the most frequent cause of death and the second most frequent cause of hospitalisation due to accidental injuries in Slovenia. Epidemiological studies show clearly that the most frequent risk factors for traffic accidents and the severity of injuries are the characteristics of drivers, primarily their behaviour. Driving under the influence is one of the most important risk factors for the occurrence of traffic accidents, and numerous studies also indicate an extraordinary influence on the severity of injuries sustained in traffic accidents^{1–3}.

A study of drivers who have caused traffic accidents in Slovenia showed that the risk of their being injured or dying in a traffic accident was 3.8 times higher for drunk drivers than for those who were not under the influence of alcohol. Inappropriate speed was more often the cause of traffic accidents in drunk drivers than in others. Neglecting the use of safety belts, and traffic accidents occurring at night or on weekends were also more likely to happen with drunk drivers than those who were not drunk.³

A preventative strategy for reducing the number of severe injuries should be directed primarily towards changing the risky behaviour, which leads to high-risk situations. By reducing the frequency of driving under the influence of alcohol we would probably also reduce the number of traffic accidents due to excessive speed and improve the use of safety belts^{3–5}.

Therefore, alcohol first impairs normal mental judgement, changes the mood, and increases self-confidence and uncritical aggressiveness. A person feels stronger after the ingestion of even small amounts of alcohol. In spite of a subjective feeling of greater strength (one is convinced that he/she is driving better than they actually are), efficiency, and es-

pecially the ability to act rationally, decreases after alcohol ingestion.

With its effects on the central nervous system, alcohol decreases attention and the ability to judge situations. The ability to assess a situation and react quickly is particularly sharply reduced. Reaction time to visual, acoustic and motor stimuli is prolonged. The visual field is narrowed, ocular accommodation is impaired and the speed of horizontal nystagmus is reduced, which decreases perceptive ability. Due to all of the above, objects may fall out of the visual field or double images may be seen⁶. The harmful effects of alcohol on the body vary from barely detectable impairment to total disability. In mild initial inebriation, individuals are able without much effort to master activities they know well and would otherwise perform automatically. At a moderate degree of inebriation, well learned activities, e.g. driving, are still performed satisfactorily, which may cause a false sense that the alcohol is not affecting their driving ability. In the majority of cases, driving under the influence of alcohol ends well, but only because the drunk driver did not encounter any unusual events during the drive. Such experiences will lead a person to believe that they are quite capable of driving well even when inebriated. However, even moderately drunk drivers are not entirely capable of reacting appropriately in new and unpredictable situations. It has been established that drivers are incapable of assessing their own degree of inebriation. They may be able to judge the transition from sobriety to inebriation, but not their increasing degree of inebriation. Alcohol causes noticeably more risky behaviour in traffic (according to the statistics of the Ministry of the Interior of the Republic of Slovenia, 18% of road traffic accidents whose primary cause was alcohol also involved the presence of excessive speed, and in 51% of those in which alcohol was

recorded as the secondary cause of accident, excessive speed was the primary cause). At higher speeds, (50–100 km/h) the reaction delay is 1/10 second, which means a distance of 1.5 to 3 metres. Under the influence of alcohol, drivers are less critical, become bolder and overestimate their own abilities or underestimate the situation. The feeling of responsibility decreases, as does the ability to predict possible consequences.

In traffic, such behavioural changes mean that drivers will tempt fate: stopping for no reason in a traffic lane, maintaining an insufficiently safe distance from another vehicle, braking at an excessive radius, driving in a direction opposite to the one he/she has indicated, driving along the central line or the lane dividing lines, having near accidents with other vehicles or objects, driving too slowly or too fast (rapid changes in acceleration or deceleration), having trouble maintaining direction or changing the direction of driving, forgetting to use indicators, stopping at green traffic lights and driving through red, etc. Any of these signs indicates that something is wrong with the driver, while the presence of two or more such signs increases the probability of this.

More than by (chronic) alcoholism, driving ability is affected by acute alcohol intoxication. Alcoholics, apart from the acute inebriation, which is their main behavioural disorder, also exhibit psychological, physical, social and mental deterioration^{7,8}.

Drivers in road traffic can be classified with respect to sobriety and addiction to alcohol into nonalcoholics and alcoholics – and both can be sober or drunk⁹.

There is another category of people and also drivers, though, who are called excessive drinkers of alcoholic beverages. These are the ones in whom drinking of alcoholic beverages has begun to cause

harm (harmful alcohol consumption), but they cannot (yet) be classified among alcohol addicts. In traffic they are occasionally exposed under the influence of alcohol, and in medicine they exhibit various health problems. We believe that excessive drinkers who drive under the influence of alcohol, especially repeat offenders, should not be considered capable of driving for as long as there are indicators of excessive drinking of alcoholic beverages^{10,11}.

Numerous studies have confirmed that drivers who are alcoholics will as a rule drive inebriated and punishments (preventative measures of temporary withholding or revoking of driver's licences) will not deter them from doing so. If alcohol-dependent drivers were removed from traffic, the number of people driving under the influence of alcohol would be considerably reduced. It is especially worth noting that the mere elimination of alcohol-dependent drivers from traffic cannot solve the problem or increase traffic safety, or reduce the problems related to the drinking of alcoholic beverages in general. Alcohol-dependent drivers should be referred for treatment in time.

There is plenty of evidence of the risks of driving under the influence of alcohol. Zador, for example, found that if risk at an alcohol concentration in the blood of 0.0–0.4 g/kg is 1, then it would be as much as 10 at 0.5–1.0 g/kg, 50 at up to 1.4 g/kg, and would increase sharply to 384.9 at over 1.5 g/kg (31). This risk is highest in the youngest drivers, i.e. in the age group from 16 to 20 years, in which even at complete sobriety the risk is almost 6 times (male drivers) or 4 times (female drivers) higher than in the age group over 25. If the risk in drivers aged 25 or more is taken to be 1, then the risk in drivers aged 16 to 20 at an alcohol concentration of 1.4 g/kg is 12 times higher, and in drivers from the age group of 21 to 24 years it is 4 times higher. In female drivers driv-

ing under the influence of alcohol, this risk is even greater (even at an alcohol concentration of 0.9 g/kg, it is 21.5 times higher than in male drivers aged 25 or more), with the exception of very low concentrations (up to 0.4 g/kg of alcohol), for which the risk is equal in both sexes¹².

Denny states that the probability of causing a road traffic accident in a driver with 1.5 g/kg of alcohol in the blood is 25 times higher than in a sober driver (in those who are very susceptible to alcohol – for any reason – such a risk increase has been found even at a concentration of 1 g/kg of alcohol in the blood¹³.

Medical selection of candidates for drivers and drivers of motor vehicles in the Republic of Slovenia

In discussions and studies, selection has been accepted as appropriate for those activities and professions which are associated with a high degree of social responsibility and those professions in which a lack of certain abilities may have major consequences both for the employee performing the job and for other people or the entire society. Driving of motor vehicles is one such profession, because a driver's inappropriateness for the performance of certain work tasks puts his or her life and the life of other participants in traffic at risk, and the material damage resulting from road traffic accidents (RTAs) is also very large^{1,2,14}.

The assessment of driving ability in Slovenia is performed at two levels. At the first level, driver candidates and drivers of first and second category motor vehicles are assessed by occupational medicine specialists, or, only in exceptional cases, by general practitioners. At the second level, there is a committee of experts including, in addition to an occupational, sports and traffic medicine specialist also a psychologist and an appropriate specialist for the diseases, defects

and injuries which are the subject of the specialist assessment.

On the basis of the entire examination and test results or the opinions of other specialists, the occupational medicine specialist gives an opinion of whether the driver candidate or driver is capable of driving a motor vehicle of the given category, whether they are capable with certain limitations: temporal (e.g. for one year only), or other limitations (e.g. only with glasses or contact lenses, only with an adapted vehicle, etc.), or whether they are permanently incapable of driving vehicles of certain or all categories.

Legal requirements in medical selection in the Republic of Slovenia

Article 116 of the Law on Road Traffic Safety (LRTS)¹⁵ requires drivers not to drive or even begin to drive motor vehicles in road traffic, if they are under the influence of alcohol, i.e. if they have more alcohol in their body than allowed by law (for amateur drivers this limit is 0.5 g/kg in the blood, and for professional drivers it is 0.0 g/kg in the blood) or if, even at a lower blood alcohol concentration, they display behaviour which may result in the unreliability of their actions in road traffic.

Pursuant to the law, the sanction of revoking of driver's licences is imposed on those motor vehicle drivers who have over 1.5 g of alcohol per kg of blood, irrespective of the previously achieved number of penalty points (Article 117).

The sanction of revoking driver's licences is also imposed on those motor vehicle drivers who cause road traffic accidents and have over 1.1 g of alcohol per kg of blood, irrespective of the previously achieved number of penalty points (Article 119).

Medical check-ups are performed to establish whether a candidate driver pos-

sesses the necessary physical and mental abilities to drive motor vehicles (Article 161). Since the driver's licence has been revoked, »new candidates« must undergo the medical examination again, in order to establish (Article 161) whether they possess the necessary physical and mental abilities to drive a motor vehicle, while for example in the case of temporary withholding (Article 130) or medical examination of elderly drivers (Article 168), such examinations are usually not required. In the case of a suspicion that due to disease or other health reasons, alcohol consumption etc. a driver is no longer capable of driving safely, a follow-up examination is required (Article 161).

Materials and methods

Using the statistical data of the Ministry of the Interior and the Republic Senate for Minor Offences, we wished to assess the influence of the new Law on Road Traffic Safety (LRTS) on the participation of inebriated drivers in road traffic in Slovenia. We were therefore interested in the percentage of road traffic offences (RTO) and road traffic accidents (RTA) involving inebriated drivers one year before and one year after the passing of this law (1 May 1998) as well as measures (referrals, punishments and final decisions on the revoking of driver's licences due to drunk driving). The data were processed using established statistical methods using the SPSS program, and the statistical significance of the differences is presented with variance analysis.

Measurements of alcohol concentration in exhaled air (calculated to g of alcohol per kg of blood) were performed in the case of a RTA and/or RTO using the Dräger 7110 alcohol test. (The physiological basis for using exhaled air to measure the level of alcohol in the blood is the exchange of gases between the blood and exhaled air in the alveoli. In a steady

state, the concentration of alcohol vapour in exhaled air depends on the alcohol concentration in the blood and the vapour pressure of alcohol at a given body temperature).

Results

According to the data of Slovene police, there were 40,702 RTAs in the Republic of Slovenia (4,990 or 12.2% caused by drunk drivers) one year before the passing of the new LRTS; one year after the passing of this law, there were 36,479 RTAs (3,131 or 8.6% caused by drunk drivers). In the period after the passing of the new LRTS, there were 14,574 cases (12,976 RTOs and 1,598 RTAs) of driver's licences being revoked due to drunk driving (with levels higher than 1.5 g/kg), 1,202 due to drunk driving with an RTA (levels higher than 1.1 g/kg) and 16,663 due to refusal to undergo an alcohol test (15,136 cases with RTOs and 1,527 cases with RTAs).

According to data of the RS Ministry of the Interior, every year, inebriated participants in traffic cause on average about: 32% of all traffic accidents involving fatalities, 26% of all traffic accidents involving severe bodily injuries, 17% of all traffic accidents involving minor bodily injuries, and 8% of all traffic accidents involving material damage.

According to other police estimates, approximately 2% of all motor vehicle drivers are under the influence of alcohol every day. It could be concluded from this (in a very simplified manner) that 2% of drivers cause 20 to 30% of the most severe traffic accidents.

Among drunken persons who cause traffic accidents in Slovenia, there are six times more men than women.

In the period after the passing of the LRTS, the Republic Senate for Minor Offences received as many as 135,000 pro-

posals from the police to impose sanctions due to actions in traffic, of which as many as 106,000 were high-priority (proposals for temporary withholding or revoking of driver's licences due to excessive inebriation or reaching the penalty points limit). In 1998 (after 1 May) 1,091 safety measures were thus imposed of revoking of driver's licences, and in the entire year 1999, there were as many as 8,426 such decisions (of which 6,500 have already become binding).

These are only a few figures to illustrate the problem of drunk drivers participating in road traffic. Therefore an attempt was made to analyse in greater detail the influence of the provisions of the new LRTS on the incidence (extent and levels) of inebriation behind the wheel.

A year before the passing of the new LRTS, Slovene policemen performed 47,899 (56.2%) alcohol level measurements in exhaled air (alcohol tests). The average alcohol concentration in exhaled air for those analysed was 1.19 g/kg. One year after the passing of the law, 37,274 tests (43.8% or 77.81% with respect to the year before) were performed and the average alcohol concentration in exhaled air was as high as 1.32 g/kg. The differences in the average alcohol concentration in exhaled air were statistically significant ($p < .01$).

In 11,745 cases (13.8%), the reason for performing a measurement of the alcohol concentration in exhaled air (alcohol test) was an RTA with an average alcohol concentration in exhaled air of 1.22 g/kg and in 73,428 (86.2%) of cases an RTO with an average alcohol concentration in exhaled air of 1.25 g/kg. The differences in the average alcohol concentration in exhaled air were statistically significant ($p < .01$).

Before the new law was passed, there were 7,393 such analyses in RTAs, with

an average alcohol concentration in exhaled air of 1.16 g/kg, while after the passing there were 4,352, with an average alcohol concentration in exhaled air of 1.33 g/kg. The differences in the average alcohol concentration in exhaled air were statistically significant ($p < .01$).

For RTOs, there were 40,506 such analyses before the passing of the law, and the average alcohol concentration in exhaled air was 1.20 g/kg, while after its passing there were 32,922 and the average alcohol concentration in exhaled air was 1.32 g/kg. The differences in the average alcohol concentration in exhaled air were statistically significant ($p < .01$).

59,206 (69.5%) events as reasons for alcohol analysis in exhaled air occurred in settlements, with an average alcohol concentration in exhaled air of 1.25 g/kg, while 25,967 (30.5%) occurred outside settled areas, and the average alcohol concentration in exhaled air was 1.24 g/kg. The differences in the average alcohol concentration in exhaled air were also statistically significant ($p < .01$).

Male drivers caused 81,348 (95.6%) events as reasons for alcohol analysis in exhaled air, with an average alcohol concentration in exhaled air of 1.26 g/kg, and female drivers caused 3,672 (4.4%), with an average alcohol concentration in exhaled air of 1.07 g/kg. Again, the differences in the average alcohol concentration in exhaled air were statistically significant ($p < .01$).

The greatest percentage of all analyses for both years together was performed in October (9.7%), followed by December and March, while the lowest percentage was performed in June (7.0%), followed by July and May.

The average age of the analysed drivers in the period before the passing of the new law was 32.65 years, while one year after its passing it was 33.43 years.

The highest average alcohol concentrations in exhaled air were found in the age group of 36 to 65 and the lowest ones in the youngest and the oldest age groups. After the passing of the new LRTS, the average alcohol concentrations in exhaled air increased statistically significantly in all age groups (with the exception of the youngest one) and reached the highest levels in the 36 to 65 age groups. Otherwise, the increase was the greatest in the group of participants in traffic aged over 65.

The highest average alcohol concentrations in exhaled air were found among cyclists (average value 1.61 g/kg). These were followed by tractor drivers, pedestrians, motorcycle drivers, passengers, moped drivers, personal vehicle drivers (with an average value of 1.24 g/kg) and others. After the passing of the new LRTS, the average alcohol concentrations in exhaled air increased in all these groups, with the exception of passengers and pedestrians. The greatest increase was found among tractor drivers and cyclists (0.18 g/kg), while for personal vehicle drivers it was 0.12 g/kg. The largest number of such analyses was performed in personal vehicle drivers, and they had the highest alcohol concentrations in exhaled air (5.1 g/kg).

In the period of one year after the passing of the new LRTS, the number of alcohol measurements in exhaled air was smaller than a year before. The average alcohol concentration in exhaled air was considerably higher. We found it interesting that the number of events involving lower concentrations decreased, but the percentage involving higher alcohol concentrations even increased. The differences between the sexes concerning the number of events and the average alcohol concentration in exhaled air are considerable (the values for men being higher). Above all, at higher alcohol concentrations in exhaled air there was a higher percentage of men.

In RTOs as reasons for alcohol measurements in exhaled air (86%), the average alcohol concentration in exhaled air was 1.25 g/kg, and in RTAs it was only 1.22 g/kg. Among offenders, there was an especially high percentage of those with average alcohol concentrations in exhaled air around 1 g/kg (0.75–1.25 g/kg), and then the percentage decreases steeply towards higher concentrations. In those who caused RTAs, however, the peak is shifted towards much higher concentrations (around 1.5 g/kg, or from 1.25 to 2 g/kg).

Almost 70% of events necessitating alcohol measurements in exhaled air occurred in settlements, where the average alcohol concentrations in exhaled air were higher. Men caused over 95% of all events, and their measured average alcohol concentrations in exhaled air were considerably higher than those found in women. The largest number of analyses was performed in participants in road traffic from the age group of 18 to 35 (60%), and the highest average alcohol concentrations in exhaled air were measured in the age group of 36 to 65 years (1.38 g/kg, i.e. 109% of almost the average value for all those tested). The largest number of analyses was performed in personal vehicle drivers, and the highest average alcohol concentrations in exhaled air were measured in cyclists, tractor drivers and pedestrians.

Discussion

The results of this study indicate without a doubt that the law was not successful with its repressive and preventative measures in the field of drunk drivers. One year after its passing, the average alcohol concentrations measured were even considerably higher than before. Its influence was noticeable only in moderate drinkers, i.e. those who will drink perhaps one glass too many and then sit be-

hind the wheel, while the percentage of those with high alcohol concentrations increased (considerably), so they were obviously not affected by the law. It has been known for a long time that elimination of such drivers from the traffic would have no effects either. There are no sharp boundaries between preventative and repressive measures and their effects overlap. Many measures and activities have a both repressive and preventative character. The mere existence of sanctions may increase discipline in traffic. Their range, however, is relatively small and in many drivers (including those who are alcohol-dependent) they have a small preventative effect (recidivism). On the other hand, how successful can our legal sanctions be, when participants in traffic cannot be disciplined even by the threat of much more severe consequences, i.e. injuries or loss of life in road traffic accidents. Experts on alcohol believe that punishment cannot make alcoholics and other drivers abandon their behavioural patterns and stop driving under the influence of alcohol. This can be achieved only by treatment, and the present practice (police – misdemeanour courts – repeat general medical check-ups) has been ineffective as prevention among alcoholic drivers.

After the prescribed six-month period without a driver's licence (during which they naturally still drove, but without it), these former drivers (now driver candidates) appear at the doors of our clinics as driver candidates for desired categories. Since they are no longer obliged to go to a local physician, they will find one who will not cause any trouble. Then, if possible, they will »forget« to tell them the real purpose of their visit (even our medical files, when available, usually do not contain data about a person's alcohol dependency or tendency to become alcohol-dependent), and the physician will perform a medical check-up as in any

other driver candidate. In the majority of cases, such drivers are allowed to return to road traffic without a problem. Such work methods have caused a complete failure of the preventative orientation of the LRTS and are pointless. Therefore, another method was proposed, but so far no answer has been received. Such driver candidates (former drivers) should be referred to an authorised and additionally trained specialist physician with a court decision stating the cause of their referral. Such physicians would have the necessary knowledge and opportunities to perform the entire diagnostic procedure according to the medical doctrine and establish as objectively as possible whether the person is alcohol-dependent (and should be referred to treatment), or so irresponsible that in spite of unproven dependency will drink frequently and endanger himself and others (and should therefore not be allowed to participate in road traffic), or otherwise orderly, but was driving under the influence of alcohol due to certain temporary reasons (and is therefore capable of safe participation in road traffic).

Only through such medical selection of driver candidates (former driver) would the prescribed measure of reassessing their driving ability achieve its purpose and contribute to greater safety in road traffic, appropriate dealing with alcohol-dependent persons and changing the alcohol policy in general. A specialist physician who would be additionally trained for this task would have more practical knowledge and experience in this field. At the same time, records of such driver candidates in one or several places in the country could significantly contribute to the study of recidivism and the success of preventative campaigns in road traffic, which are aimed at increasing the safety culture in general and improving the interpersonal relationships between participants in road traffic.

It would also be reasonable to stipulate that all candidate drivers are to attend a course on the effects of psychoactive substances on drivers. All drivers in whom nonpermissible alcohol levels have been established (over 1.1 g/kg or 1.5 g/kg) or who have reached the critical limit of penalty points due to lower alcohol levels should, in addition to a medical check-up, also attend a course and be tested to establish their knowledge of the effects of psychoactive substances on safety during driving of motor vehicles.

Conclusions

In Slovenia, despite the intention of the new law to reduce the number of drunk drivers in road traffic by using a strict penalty points system and the threat of revoking driver's licences, or at least to reduce the percentage of those driving under the influence of such alcohol concentrations which cause an absolute inability to drive, this did not happen. The average alcohol concentration in the exhaled air of participants of RTOs and RTAs was actually found to have increased drastically after the passing of the new LRTS. Especially worrisome is the data that the percentage of drivers

with alcohol concentrations above 1.5 g/kg is significantly higher than it was before the new law was passed. It is precisely these drivers who cause the greatest percentage of RTAs (the highest percentage of people who cause RTAs are found to have alcohol levels in exhaled air between 1.25 and 2 g/kg).

We therefore believe that supplements to the LRTS should be adopted urgently. Supplements to the provisions of the above-mentioned articles should define and prescribe in detail the methods of implementing such preventative measures (in cases in which the repressive measures have proven to be unsuccessful) that would contribute, through better medical selection, to a reduction in the number of drunk drivers behind the wheel, both those who are alcohol dependent (and should be referred to treatment) and for all others in whom an in-depth medical examination would establish whether they are capable of safely participating in road traffic as drivers or not). By doing so, such measures would also increase the safety on Slovene roads and improve the overall alcohol policy and strategy of the Republic of Slovenia.

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UŽIVAOCI ALKOHOLNIH PIĆA I SIGURNOST NA CESTI U R. SLOVENIJI

S A Ž E T A K

U ovoj studiji praćen je postotak prometnih prekršaja i prometnih nezgoda koje su uzrukovali alkoholizirani vozači.

Vremenski su u studiju uključeni slučajevi godinu dana prije stupanja na snagu novog Zakona o sigurnosti cestovnog prometa, kao i jedna godina tijekom njegove primjene. Osim toga analizirane su pravne odluke u vezi vozačkih dozvola i drugih postupaka nad alkoholiziranim vozačima.

Godinu dana prije primjene novog Zakona o sigurnosti cestovnog prometa u Sloveniji je bilo 40,702 prometne nezgode. Od toga 12,2% uzrokovali su alkoholizirani vozači. Prosječna koncentracija alkohola u izdahnutom zraku bila je 1,19 g/kg. U godinu dana primjene novog Zakona zabilježeno je 36,479 prometnih nezgoda, od čega su 8,6% uzrukovali alkoholizirani vozači. Prosječna koncentracija alkohola u izdahnutom zraku iznosila je 1,32 g/kg. Izmjerene koncentracije alkohola tijekom tih dviju godina praćenja statistički se značajno razlikuju.

Za 13,8% vozača razlog mjerenja koncentracije alkohola bile su prometne nezgode. Prosječna koncentracija alkohola za tu skupinu iznosila je 1,22 g/kg. Za preostalih 86,2% vozača razlog mjerenja koncentracije alkohola bili su cestovno-prometni prekršaji. Prosječna koncentracija alkohola te skupine iznosila je 1,25 g/kg. Sumarno gledajući, smanjio se broj slučajeva s nižim, a povećao s višim koncentracijama alkohola.

Rezultati ove studije ukazuju da novi Zakon nije uspješno uredio preventivne mjere kojima bi se postiglo sniženje koncentracije alkohola prouzročitelja cestovno prometnih prekršaja ili nezgoda. Stručnjaci koji se bave problemom alkohola vjeruju, da kazna ne može prisiliti vozače na promjenu ponašanja glede alkohola. To se postiže samo liječenjem. Dosadašnje mjere (policijske prijave, broj prekršajno-kaznenih odluka, ponovljeni zdravstveni pregled) bile su neuspješne u smanjenju broja alkoholiziranih vozača. Stoga smatramo da bi Zakon o sigurnosti cestovnog prometa trebalo dopuniti uvođenjem rigoroznije zdravstvene selekcije pri dobivanju novih ili produljenju vremenski ograničenih vozačkih dozvola. Time bi se mogao smanjiti broj alkoholiziranih za volanom uključujući i ovisnike.