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Medical driver selection and alcohol

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ABSTRACT

Due to the rapid development of motorisation in the past few decades, the epidemic of traffic injuries has become a serious problem. Numerous studies indicate that the human factor, often in connection with alcohol consumption, plays a major role in traffic accidents. Studies also show that people addicted to alcohol often drive under the influence and are not deterred by the possibility of punishment, e.g. a revocation of their driving licence.

Our study examined people who caused traffic accidents under the influence of alcohol in Slovenia, the consequences of their actions, police and judicial measures and medical selection.

In the last decade, the share of people causing traffic accidents under the influence of alcohol in Slovenia has been on the rise. Higher blood alcohol levels are found in people causing fatal traffic accidents, most of them are cyclists, pedestrians and tractor drivers, aged between 25 and 34; the accidents are most common on village roads, on weekends. The discrepancy between numbers of intoxicated drivers with suspended driving licences (approximately 8500/year) and between numbers of successfully terminated judicial procedures is particularly worrisome. When these drivers get their licences back, the medical selection process is inadequate.

Our results emphasise the problem of medical selection for reinstatement of penalized drivers. The inadequate approach currently in force allows too many dangerous drivers, most still addicted to alcohol, to return to traffic without medical selection. The only solution to this problem is an immediate change in legislation that would require rigorous medical selection for all reinstatements of drivers who drove under the influence of alcohol. This would decrease the numbers of intoxicated drivers in traffic and at least partly decrease the numbers of alcohol addicts in society.

1. Introduction

Traffic accidents are the most common cause of mortality and the second most common cause of hospitalisation due to unintentionally caused injuries in Slovenia. Epidemiological studies clearly show that the most common risk factors for traffic accidents and the seriousness of injuries sustained are the personal characteristics and behaviour of the driver. Among them, driving under the influence of alcohol is the most significant [1–3].

A study of drivers, responsible for traffic accidents (TA) in Slovenia, found those driving under the influence of alcohol to be 3.8 times more likely to sustain injuries or die in a traffic accident than drivers with no alcohol in their system. They were more likely to have caused a traffic accident due to speeding and less likely to have used the safety belt than drivers not under the influence [4].

Excessive consumption of alcoholic beverages can result in numerous physical and mental defects. These may either be the result of acute alcohol poisoning or may be counted among a broad spectrum of progressive defects. Specific health disorders usually combine with behavioural problems of the alcohol addict [5]. Intoxication in traffic has been the subject of numerous studies that have tried to predict the driving behaviour of drivers who consume alcoholic beverages [6].

Alcohol impedes all the functions necessary for safe driving. Firstly, it undermines normal judgment; secondly, it alters the driver's mood, increasing their (self-) confidence and uncritical aggression. Even after consuming limited quantities of alcohol, an individual feels stronger. However, despite the subjective feeling of power, alcohol consumption actually decreases the efficiency and especially the capacity for good judgment, which results in overestimation of driving capabilities and vehicle capabilities, and consequently in disregard of driving conditions and other traffic participants [7]. Such drivers provoke dangerous situations: they drive too slowly or too fast, their control of driving direction is impaired, they neglect using turn indicators, they stop at the green light and drive through red lights etc.

The effects of alcohol on the central nervous system decrease attention and impair judgment, radically reducing the ability to quickly assess the situation and react accordingly. Reaction time to visual, acoustic and motor stimuli increases, the field of vision

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narrows, accommodation of the eye and the rapidness of horizontal nystagmus are impaired as well, resulting in worsened perception. Due to the above symptoms an object may disappear from the field of vision or appear as a double image.

Moderate intoxication allows learned activities such as driving to still be performed more or less adequately, giving rise to a deceptive belief that the alcohol imbibed has no effect on driving capabilities. In most cases, driving under the influence of alcohol ends happily thanks to the driver not facing anything unusual while driving. Such cases make the drivers believe that they are completely in control even while under the influence of alcohol. However, even a moderately intoxicated driver is not wholly able to act accordingly in new and unpredictable situations. It has also been determined that drivers are unable to assess their level of intoxication. They might only feel the transition from sobriety to intoxication but not the increase of the latter. Alcohol consumption results in significantly riskier behaviour in traffic.

According to Slovenian laws, while participating in road traffic and when they are starting to drive, the following driver categories may have no alcohol in their blood [8]:

- drivers of motor vehicles of C, E and D categories,
- drivers of vehicles transporting hazardous materials,
- drivers whose primary occupation involves driving a motor vehicle, while at work,
- driving instructors while instructing their driving students,
- driving students during their practical training and
- beginner drivers.

Other categories of drivers may have a blood alcohol content of 0.5 g of alcohol per 1 kg of blood, provided that they are not exhibiting signs of altered behaviour that could result in unreliable driving.

2. Medical selection

In Slovenia, assessment of driving fitness takes place at two levels. At the first level, the driving capabilities of candidates for a driving licence are evaluated by a specialist of occupational, traffic and sports medicine. On the other hand, candidate drivers and drivers of tractors are always evaluated by a general practitioner as well. Based on a thorough examination, medical records and other opinions, the specialist of occupational medicine then evaluates the candidate or driver of the given category as either fit to drive or fit with limitations. About 40,000 driver candidates are examined at the first level annually. We estimate that about two thirds of those examined are determined to be fit to drive, while only about 1% are found unfit among candidates and regular drivers and up to 4% among elder drivers. Others are determined as fit to drive, but with certain limitations, most commonly due to visual perception disorders (about 80%), followed by those determined by a psychologist (about 8%) and a neuropsychiatrist (about 5%).

The candidate who has been assessed as unfit (or fit with limitations) to drive at the first level, but disagrees with the assessment, may file a complaint within 15 days and request a repeat examination by a Second Level Special Medical Commission. The reporting member who introduces the candidate or driver to other commission members conducts a detailed medical examination of the candidate as well as of all medical and other records (driving record, police and employment files), then forwards him to appropriate specialists. When the reporting member has obtained specialists' opinion, he gives a recommendation based on the results of all examinations and opinions performed and received, and presents it to the commission. The commission makes decisions unanimously—usually based only on discussion of the results and the recommendation of the reporting member, or in special cases also with the presence of the patient. The commission's decision is final.

Due to frequent recidivism we are particularly alert, whether the examined individuals might be addicted to alcohol (and perhaps other psychoactive substances); in such cases, we usually give a negative opinion and request controlled abstinence—involvement of the individual in an addiction treatment programme with requested confirmation of such by the therapist. If the results at the control examination are negative (but coupled with a positive opinion by the therapist) we decide on a temporary 6-month positive opinion and then based on further results on extending it.

3. Materials and methods

In our study we used data from the General Police Directorate of the Ministry of the Interior of the Republic of Slovenia on police activities and traffic accidents in the current year, records from the Ministry of Justice on imposed revocations of driving licences, and data from the Special 2nd Level Commission for Road Traffic of the Clinical Institute of Occupational, Traffic and Sports Medicine on the number of evaluations due to alcohol addiction or abuse.

4. Results

In 2007, the police conducted or ordered:

- 386,437 blood alcohol content tests—of which 28,070 (7.26%) were positive;
- 2526 medical examinations (alcohol)—of which 898 (35.55%) were positive;
- 617 ethylometer tests—of which 50 (8.1%) were positive among those involved in traffic accidents;
- 5929 offenders had in excess of 1.5 g of alcohol/kg of blood;
- 2427 of those who had caused an accident had more than 1.1 g of alcohol/kg of blood;

In the past three years, the share of offenders with blood alcohol content over 1.5 g/kg has been on the increase. Specifically, it was 4914 in 2005, 5480 in 2006, and 5929 in 2007.

The number of drivers who had caused a traffic accident and had blood alcohol content above 1.1 g/kg has increased in the past three years as well; it was 2316 in 2005, 2493 in 2006, and just a bit lower, 2427 in 2007.

The number of drivers who had their licences revoked by the minor offence judge due to accumulating 18 penalty points or driving under the influence of alcohol was 2781 in 2005 (of which 655 or 23.55% were beginner drivers), 3133 in 2006 (of which 959 or 25.68% were beginner drivers), and 4169 in 2007 (of which 1835 or 44.01% were beginner drivers).

About 200 candidate drivers or motor vehicle drivers are examined at the second level every year. The Special 2nd Level Medical Commission for Road Traffic of the CIOTSM evaluated 176 motor vehicle drivers of various categories in 2005, 165 in 2006, and 145 in 2007. The share of those evaluated due to various psychiatric (psychological) or neurologic diagnoses has been on the increase and has now reached over 75%. Most of the second level evaluations were due to epilepsy, followed by alcohol addiction/abuse. The share of the latter was 17.04% in 2005, 16.3% in 2006, and 17.8% in 2007.

Fig. 1 presents the number of intoxicated drivers who had caused a traffic accident, sorted by specific accident causes and in comparison to all traffic accidents caused by intoxicated drivers. Note the high percentage of speeding and driving on the wrong side of the road as primary causes of accidents caused by intoxicated drivers.

The percentage of intoxicated drivers who had caused a traffic accident that resulted in death has followed the general increase