

Effects of lowering the legal BAC-limit in Austria

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Abstract

In January 1998 the legal BAC-limit in Austria was lowered from .08% to .05%. Injuries due to drunk driving decreased during the first year by approximately 10%. During the first months the decrease was more significant than later in the year. However, a moderate increase in injuries due to drunk driving had to be stated in the year following. Already in 1992 the BAC-limit for the specific group of novice drivers had been lowered from .08% to .01%. An accident analysis after five years of observation indicated a reduction of drunk driving injuries in the group of novice drivers by 30.9% in contrast to a reduction of only 5.9% in the group of experienced drivers.

The accident reduction may be explained not only as a consequence of the legal alterations but also as a consequence of intensive support in the media, persistent police enforcement and the introduction of mandatory psychological driver improvement courses for drunk drivers. A recent evaluation study proves an almost 50% lower recidivism rate of drunk drivers who participated in a psychological driver improvement course compared to a control group without a course.

Introduction

The first legal alcohol-limit on Austrian roads was introduced in 1960. Following this new traffic law a driving license was suspended if the driver had drunk enough alcohol to show a BAC-level of .08% or more. Before this new law was introduced drunk drivers were punished for DUI only in case of accidents. A public and political discussion concerning lowering the BAC-limit from .08% to .05% already began in the seventies. In a parliamentary voting in 1994 a small majority voted against a lower limit. 83 delegates voted against and 81 delegates voted for a new .05% BAC-limit. In July 1997 on first and on second parliamentary reading a majority voted for a new .05% BAC-limit. But coming up for the third reading, due to party-political differences, 5 delegates changed their voting and the new law was rejected once again by a weak majority. It was the first time in Austria that a new law was rejected only on the third reading in parliament. Consequently the media reported about this "scandal" and initiated public campaigns against the .08% BAC-limit and against drunk driving at all. The Austrian Road Safety Board supported this efforts. Opinion polls were conducted indicating that a massive majority of the population was in favor of a reduction of

the .08% BAC-limit. This results together with latest scientific studies on impairment of low alcohol doses were published (Bartl & Kaba, 1998).

Only a few month later, in November 1997, a drunk driver caused a spectacular accident and killed three pupils who were passengers of a small school-bus. Within a few weeks intensive public campaigns for lowering the BAC-limit lead to a further parliamentary voting in December 1997. Now a clear majority voted for the new .05% BAC-limit which took effect on 6th January 1998. The weakness of the new law is that drivers with BAC-levels higher than .05% but lower than .079% only get punished. Their license is not suspended unless the BAC-level is .08% or higher. On the other hand sanctions for drunk driving now are more serious (extended period of withdrawal of license, higher amount of fine increasing with BAC-level, compulsory participation in a psychological driver improvement program for drivers with BAC-levels of .12% or higher and compulsory medical and psychological driver selection test for drivers with BAC-levels of .16% or higher).

For novice drivers already on 1st January 1992 the driving license on probation for novice drivers, regardless of age, was introduced in Austria: During a period of two years novice drivers have to observe a .01-BAC-limit. Offences against the .01% BAC-limit as well as causing an injury or fatality and offences against specific traffic rules, such as extremely exceeding the speed limit, overtaking where not permitted, etc., lead to an obligatory participation in a psychological driver improvement program. A specific accident analysis after the introduction of the driving license on probation was carried out. Also the psychological driver improvement programs for drunk drivers were evaluated.

Methodology

The impact of the new BAC-limit in Austria was analyzed by comparing accident data of the official accident statistics. The analysis for the driving license on probation was carried out five years after introduction to investigate long term effects. Changes of accident figures of novice drivers were compared to accident figures of experienced drivers between 1992 and 1996. Furthermore a before-after comparison was carried out and the number of accidents were related to the number of new licenses issued in order to include changes in exposure. For the new .05% BAC-limit for experienced drivers only short term effects between 1998 and 1999 could be calculated. Additionally the number of alcohol test by the police and the changing number of drivers with .08% BAC or higher were compared. The evaluation of the psychological driver improvement programs were carried out in a before-after design with control groups.

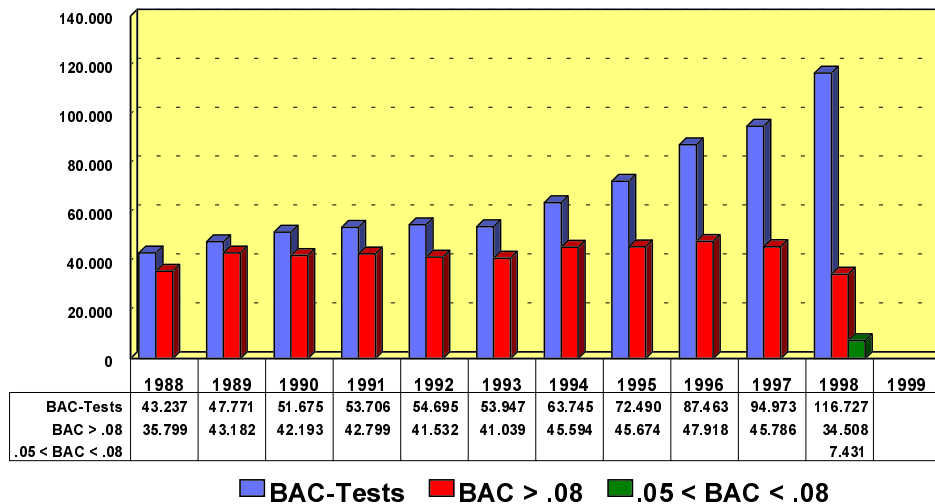
Results

Data for the first year after introduction of the .05% BAC-limit concerning the number of alcohol test with breathalyzers by the police and number of drives detected with a BAC of .08 and more are available. Data for 1999 are not yet available and will be subject of a long term evaluation.

During the first year 1998 after the introduction of the lowered BAC-limit of .05% on 6th January 1998 the number of alcohol tests increased by 24.6% compared to the year before. The number of drivers with .08% BAC or higher decrease at the same time by 22.9%. With respect to the annual changes during the years before this result is significant. From 1993 to 1994 the number of alcohol tests increased by 18.2% but the number drivers with a BAC of .08% and more increased also by 11.1%. From 1994 to 1995 13.7% more alcohol test were conducted by the police and the number of drunk drivers stayed about the same. In the next year 20% more alcohol test were conducted and the number of drunk drivers increased by 4.9%. Finally from 1996 to 1997 8.6% more alcohol test were carried out and the number of drivers with .08% BAC or higher decreased by 4.4%.

In 1998 41,939 drunk drivers were detected. 34,508 (82.28%) were drivers with a BAC of .08% or higher. 7,431 (17.72%) drivers were punished for driving with a BAC higher than .05% but lower than .079% BAC. Figures for drunk drivers with a BAC between .05% and .079% are only available for 1998 since they have not been registered the years before: Details are highlighted in the graph below:

Police Control of Blood Alcohol Concentration (BAC) in Austria



BMI, Abt. II/19

Data until October 1999 are now available for analysis of drunk driving accidents with personal injuries and fatalities. Consequently the 22 month period from January 1998 (introduction of .05% BAC-limit) until October 1999 can be compared with the corresponding period before the introduction. This is the period from January 1996 until October 1997 where the .08% BAC-limit was in force.

The total number of drunk driving accidents decreased by 7,56% from 4,592 to 4,245. At the same time the total number of accidents without alcohol increased by 2,65% and has therefore be taken into consideration. The comparison of the percentage of drunk driving accidents related to total number of accidents indicates a decrease of 9,37% from 6.3485% to 5.75367%. Figures are listed in the chart below:

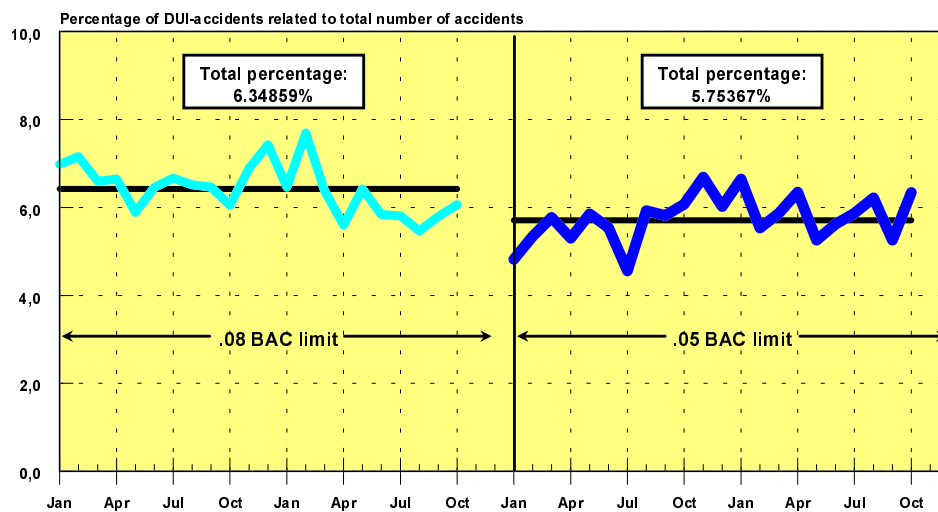
Accidents with personal injuries in Austria:

	Jan. 1996 – Oct. 1997 (22 months) .08 %BAC-limit in force	Jan. 1998 – Oct. 1999 (22 months) .05% BAC-limit in force	per cent change
drunk driving accidents	4,592	4,245	-7.56
total no. of accidents	72,331	73,779	+2.00
total no. without drunk driving accidents	67,739	69,534	+2.65
percentage of drunk driving accidents related to total no. of accidents	6.34859%	5.75367%	-9.37

source of data: Austrian Central Statistical Office (ÖSTAT)

During the first months the decrease was more significant than later. This aspect is shown in the diagram below:

Percentage of drunk driving accidents with personal injuries related to total number of accidents in Austria 1996-1999



ÖSTAT

Clear evidence was gained concerning the .01 BAC-limit for novice drivers which was introduced with the driving license on probation in January 1992. Five years after the introduction the total of passenger car drivers involved in accidents with personal injuries was analyzed (Bartl et al., 1997, 1998): Drunk driving injuries and fatalities decreased between 1992 and 1996 by 30.9% within the group of novice drivers, whereas the accident reduction of all the other drunk drivers was only 5.9%.

In the year of the introduction of the driving license on probation (1992) 19.2% new licenses less were issued compared to the year before. This was a significant reduction in comparison to the annual deviations of one to four percent the years before and after. This declining number of drivers has a significant impact on the exposure and therefore has to be considered. Taking into account the declining number of new licenses issued the observed accident decrease is 16.8%. Figures are listed below:

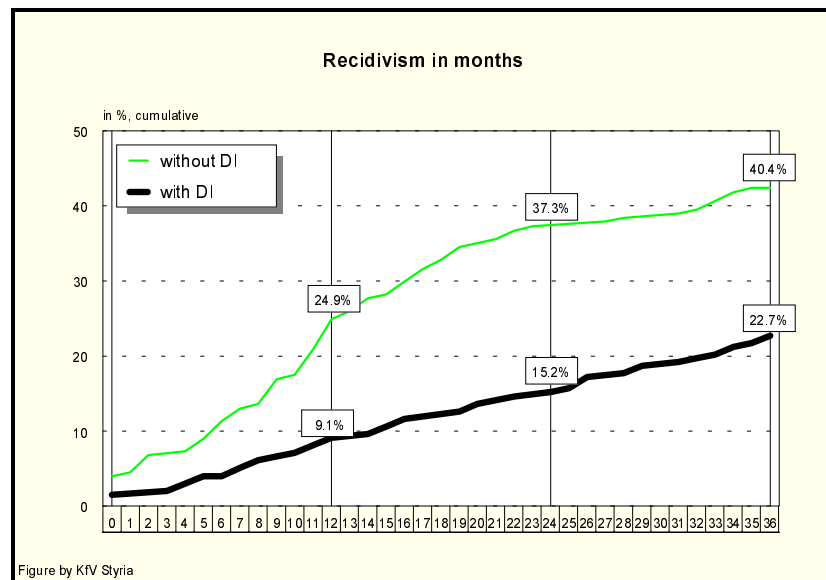
Number of *drunk* car drivers involved in injuries and fatalities

	1991 [absolute]	1996 [absolute]	per cent change
novice drivers [absolute]	404	279	-30.9
novice car drivers [related to new licences issued]	0.184%	0.153%	-16.8
all other car drivers [absolute]	1,574	1,481	-5.9

The decrease of accidents of novice drivers was continuous and before 1992 the accident figures increased smoothly.

In addition to drunk driving accidents this study also analyzed changes in total accident figures: Accident involvement (injuries and fatalities) of novice drivers decreased by 32.2% respectively by 18.7% taking into account the declining number of new licenses issued. The decrease of accidents of experienced drivers was 8.9% in the period of time observed.

A recent evaluation of psychological driver improvement programs for drunk drivers carried out in one of the states of Austria by Schützenhöfer & Krainz (1999) provides an example for the impact of a compulsory driver rehabilitation programme. These courses are an essential part of the legislation. To be exact: since 20th August 1997 every DUI offender with a BAC of 1.2% or higher has to participate in such a course. The years before compulsory participation was depending on an individual psychological and medical diagnosis. Since 1992 every holder of a driving licence on probation has to participate in a course regardless of BAC. In this study recidivism rates of drunk drivers with and without participation in a psychological driver improvement course were analysed and compared: In the first 12 months after the re-issue of the driving licence, 24.9% of untreated offenders (control group), but only 9.1% of participants in courses were detected by the police for drunk driving. After 24 months 37.3% of the control group but only 15.2% of course participants committed repeated offences. After 36 months a recidivism rate of 40.4% was found for the control group but only 22.7% for the DI-participants. These results are highlighted in the following diagram:



Recidivism rates of drunk drivers with and without DI-course participation (by Schützenhöfer & Krainz, 1999)

This most recent study confirms results of an earlier study which also proved an almost 50% lower recidivism rate of course participants compared to a randomly selected control group without a course (Michalke et al., 1987).

Discussion

The analysis of 22 months after introduction of the .05% BAC-limit indicates a significant reduction of drunk driving accidents. Thus, a short term impact is evident. But it could not be answered whether this reduction is a result of the new law, the intensive public campaigns or the increased police enforcement. In any case it can be concluded that lowering the legal BAC-limit from .08% to .05% in combination with intensive police enforcement and reporting in the media leads to a positive short term effect. Long term studies will follow.

All official data of drunk driving accidents after the introduction of the .05% BAC-limit now additionally include accident involvement with a higher than .05% and lower than .079% BAC. As

reported above 17.72% of all drunk drivers detected by the police in 1998 had a higher than .05% but lower than .079% BAC. A local accident analysis in one state of Austria indicates that 6.3% of all drunk driving accidents in 1998 were accident involvement of drivers with more than .05% but less than .079% BAC (Schützenhöfer et al., 1999). Consequently the reduction of drunk driving accidents reported in this analysis has to be considered as underestimated because it does not take into account this factor.

The .01%-BAC limit for holders of a driving licence on probation introduced in Austria has also proven a success. A long term analysis indicated a significant reduction of drunk driving accidents during the first five years compared with experienced drivers and taking into account exposure (number of new licenses issued.)

The two evaluations of driver improvement programs described in this article are not representative for all of Austria. But in those regions where they were carried out a significant lower recidivism rate of course participants compared with a control group without participation is evident.

Taking into account all aspects analysed and discussed in this article a lower BAC-limit in combination with enforcement, support by media and rehabilitation programs for offenders can be recommended.

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