Behaviors and opinions of Swedish drivers before and after the 0.02% legal BAC limit of 1990.

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Background

The first of July 1990 a new law was passed in Sweden with a change of the legal BAC limit from 0.05% to 0.02%. The purpose of the present study was to investigate the effect of the introduction of the new law on drivers' self-reports concerning drunken driving experience. A first survey was made in 1987, three years before the new law. In 1991, one year after the introduction of the new law, a second survey was made. A few new items were added to the 1991 questionnaire, such as knowledge about the new law; otherwise the questions asked were the same as in the 1987 survey. In the present paper, data from two surveys of drivers' self reports about drunken driving, before and after the new law, will be compared.

The 1987 Survey

In the survey of 1987 a questionnaire was posted to a random sample of 4100 Swedish car owners. The response rate was 60% (N=2491). The questions of the survey concerned drivers' past behavior and their expectations concerning drunken driving in the future. The subjects were also asked about attitudes, social norms, expectations and evaluations concerning drunken driving, knowledge of the new law, and effects of alcohol on behavior, and also about personal drinking habits.

Drivers who declared that they were teetotals (318 subjects) were excluded from the data analysis. With respect to self-reports of drinking and driving there were three groups of drivers: first, those who did not report any experience of drinking and driving during the last three years (69%), second, those who had been drinking, believing that the BAC was below the legal limit (23%) and third, those who had been driving although they believed that the BAC was above the limit (8%).

According to the results of the 1987 survey, Swedish drivers had very strong attitudes against drinking and driving, and very few reported driving after consumption of alcohol. However, drivers who reported drinking and driving above the BAC limit (young, male drivers) had less extreme attitudes against drinking and driving. They perceived less social pressure against drinking and driving and they evaluated sanctions as less aversive than other drivers. They were more often intoxicated and they thought that their future
drinking and driving was likely. A LISREL analysis of the survey data from 1987 (Åberg, In press) revealed that a structural model including attitudes, evaluation of punishment, social norms and drinking habits could explain most (77%) of the variance of a behavioral variable composed of self-reported past behaviour and intentions for future behavior. The model (see Figure 1) is a revised version of the theory of reasoned action proposed by Ajzen and Fishbein (1980).

Figure 1. Structural relationship of variables affecting drinking and driving behavior.

The 1991 survey

In the fall of 1991, about one year after the new law had been passed, the survey was repeated on a new random sample of 2100 subjects; response rate 60% (N=1262). In the sample from 1991 (131 teetotals excluded) three groups of drivers could be identified on basis of their self-reported behavior during the last three year period: first, drivers without experience of drunken driving (65%), second, driving after drinking one glass of wine (27%), and third, driving after consumption of three glasses or more (8%). The categories are based on results from the 1987 survey where drivers thought it was
possible to drink one glass of wine without violating the .05 BAC limit, but to drink three glasses or more was too much.

In general, in 1991 the drivers had good knowledge of the new law. They knew about the new BAC limit, and that less alcohol could be consumed before driving and they believed that the new law would be an effective measure against drunken driving.

Comparison of results before and after the new law

The three subsamples in 1991 data closely resembled those of 1987. No significant differences between the two sets of subsamples were found as regards relative size and distributions of sex, age and driving experience. As in 1987 the drivers with experience of driving after consumption of three glasses of wine or more in the 1991 survey exposed a pattern of attitudes, social norms and evaluations of sanctions that was more permissive towards drinking and driving than that of drivers who did not allow themselves to drink more than one glass of wine. The latter were more permissive than drivers without the drinking and driving experience.

Self reports about drunken driving did not indicate any change of behavior after the implementation of the new law. The mean number of incidents with drunken driving (over the BAC limit or after three glasses of wine during a three year period) was .22 per driver in 1987 and .30 per driver in 1991. Concerning violations of the new law the number of trips with a BAC over the .02% limit during one year was .26 per driver in 1991. The number of times the drivers had cancelled a trip because of a BAC believed to be over the limit increased from .46 incidents per driver and year in 1987 to 1.59 incidents per driver and year in 1991 (the difference is significant, p<.001). The latter result indicates an increment in the number of occasions when the drivers have to make a decision to drive or not to drive after alcohol consumption.

When asked to estimate their future violations of the BAC limit, 7.8% of the drivers from 1987 and 11.7% from 1991 answered that such violations were likely. 20.0% of the drivers from 1987 and 32.7% from 1991 estimated future driving after drinking but with a BAC under the limit to be likely. Both differences are significant (p<.001).

Among the variables that affect drunken driving behavior, according to the model presented in Figure 1, there were no significant differences in the way the drivers responded to the questions about sanctions, social norms or drinking behaviour. The only significant change between the two surveys was found in the attitude variable. The generally strong attitudes against drunken driving with a BAC over the legal limit were found to be significantly (p<.01) less extreme after the new law was implemented. Those with previous experience of drunken driving changed their attitudes more than other drivers.
There was no change in the drivers' alcohol consumption habits between 1987 and 1991. Although the drivers knew that one effect of the new law is that fewer drinks are needed before the BAC limit is exceeded, the amount of alcohol they allowed themselves to drink before driving did not change. However, even in 1987 the drivers seldom drank more than one glass of wine if they knew they were going to drive.

In the Ajzen and Fishbein (1980) model, evaluations and expectations are assumed to determine attitudes. In the present data there are no differences between 1987 and 1991 concerning either evaluations of sanctions or evaluations of consequences of accidents. However, perceived probability of sanctions and probability of accidents decreased significantly (p<.001) after the implementation of the new law. The perceived probability of detection was lowest for drivers with previous experience of drunken driving.

Discussion

The change in BAC limit from .05% to .02% in Sweden 1990 has obviously not affected the drivers' drinking and driving behaviour, according to their own reports. After the new law drivers have been driving after three glasses of wine to the same extent as drivers previously were driving with a BAC over .05%. One effect of the lowered limit is therefore higher level of law violations, which the drivers believe will persist in the future. Thus, according to drivers' self reports the 0.02% BAC limit has not caused any change in drunken driving behaviour in Sweden.

The increased level of law violations coincides with less extreme negative attitudes toward driving with a BAC above the limit and with perceptions of decreased probabilities of being punished for drinking and driving and of being involved in an alcohol related accident. Drivers who are consumers of alcohol will sooner or later be in situations where they have to decide whether to drive or not to drive after too much drinking. Åberg (in press), found that perceived risk of detection and perceived risk of accident were rated to be the most important factors in situations when the drivers had decided not to drive. In situations when the drivers had decided to drive the most important reason was the need for transport. According to the results of the present study, violations of the new law and attitudes against such violations are associated with lower subjective risks of detection and of accidents than were violations of the old law.

The Swedish drivers have not changed their drinking and driving as a consequence of the new law but their law-abidingness have decreased. Also, the violations of the law are considered to be less serious and a little less unacceptable than before. The number of temptative situations have increased with the new law and the change of the drivers' attitudes towards more permissiveness make it easier for the drivers to decide to drive after drinking.
The results of the present comparison emanate from a group of drivers with relatively moderate drinking habits. There is no reason to believe, however, that more heavy drinkers should improve their drinking and driving behavior as an effect of the new law.

References
