Drunken Driving: A Risk Factor for Premature Death

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ABSTRACT

Drunken driving (BAC ≥ 0.05%) is often associated with a variety of problems of the offender, such as alcohol, socioeconomical, medical, criminal etc. difficulties. Therefore, it seems probable that drunken drivers are in a greater mortal danger than the average population. This hypothesis was investigated in this study by applying a dual approach. In the first part mortality of the drivers who had been convicted for drunken driving (1972-1992), and who had died during a certain period after that (1.5-13.5 years) was investigated in five submaterials. The total of the deceased was 266 males and 7 females. In the second part prevalence of drunken driving and mortality of the 15-74-years-old male population deceased in Finland in December 1992 was investigated. The total of this material was 1195. The official national cause-of-death statistics were applied as reference materials.

The results show a significant relationship between excess mortality, premature, non-natural deaths often associated with alcohol problems and previous conviction for drunken driving. This suggests that conviction for drunken driving is a significant marker of an adverse prognosis for survival.

INTRODUCTION

Driving a motor vehicle while intoxicated, especially when occurring repeteadly, seems to be an indication of serious personal problems. This behavioural disorder may be due to general negligence or some psychopathological, psychiatric or some other reason like problem drinking. Drunken drivers take great risks while driving a motor vehicle in road traffic. It is possible that these people take great risks in their life otherwise, too. Therefore, mortality of these people may differ from the general trend which was the hypothesis for this study.

MATERIAL

Two materials were applied. The Helsinki material comprised all the cases which had been arrested in Helsinki in 1990 (population 500.000) and convicted for drunken driving. The other material comprised all the respective cases in the whole country in 1990 (population 5 millions) whose surname’s intial begun with the letter J. In both materials all the cases
deceased by the end of the year 1992 were sorted out from various national registers (driver’s licence, vital statistic, police record). The cause and the manner of death of the deceased were obtained from death certificates and medicolegal autopsy protocols. A medicolegal autopsy had been performed in 85% of the cases in Helsinki and in 73% in the whole country. In most autopsy cases blood alcohol determination (80% in Helsinki and 63% in the whole country) and in many cases screening for drugs and narcotics (63% and 38%) were performed. Mortality of drunken drivers is presented per 100,000 drunken drivers a year during the 2.5 years follow-up period. The official cause-of-death statistics of Helsinki and Finland in 1990 and 1991 were used as the reference materials.

RESULTS

In Helsinki in 1990 there were 2299 male and 179 female drunken drivers of which 71 males had died by the end of 1992. The respective numbers for the whole country were 786 male and 76 female drunken drivers of which 26 males and 1 female had died. The mean annual mortality of males during the 2.5 years follow-up period was 1.2% in Helsinki and 1.3% in the whole country. Because of the presence of only one female, no further analysis for the females was performed.

The risk of premature death tended to be highest for the young and middle-aged age groups as summarized in Figure 1. At the age of 15-24 and 25-44 years excess mortality among drunken drivers was 4.0 and 3.6 times higher in Helsinki and 3.6 and 6.4 times higher in the whole country when compared to the reference materials. For the oldest age group analysed the respective rates were 1.8 and 1.5 times higher than in the reference populations.

Figure 1
Mean Annual Mortality of Male Drunken Drivers (DDs) and Reference Populations (Ref) by Age

![Figure 1](image_url)
The risk of premature death tended to be caused both by non-natural and natural causes (Figure 2). Excess mortality from non-natural causes at different ages varied from 2.2 to 5.3 times in Helsinki and from 2.9 to 9.3 times in the whole country. Excess mortality from natural causes was smaller and varied at different ages from 1.3 to 1.7 times in Helsinki where there were no natural deaths among the 15-24-years-old drunken drivers. In the whole country excess mortality from natural causes was 6.0, 2.0 and 5.3 times higher respectively at the age of 15-24, 25-44 and 45-64 years in comparison to the general mortality.

The largest contributor to natural deaths were alcoholism-related diseases both in Helsinki (39 %) and in the whole country (25 %). The second largest group in Helsinki were ischaemic heart diseases (30 %). About 52 % of the deceased drunken drivers in Helsinki could be estimated to be alcoholics or heavy alcohol consumers on the basis of the documents available.

The largest number of deaths occurred in the accidental and suicidal death category as seen in Figure 3. Excess mortality at various ages varied from 3.9 to 6.6 times in accidental deaths in Helsinki and from 3.1 to 11.1 times in the whole country. The leading group in accidental deaths were poisonings (37 % in Helsinki, 55 % in the whole country). Alcohol or alcohol and psychotropic drugs were the most common agents. The other common causes of accidental deaths were injuries from falling and submersion. Also mortality from homicides was much higher (3.6 times in Helsinki and 9.5 times in the whole country in the age group of the 20-64-years-old ones) among drunken drivers than in the reference populations.
For suicides the excess mortality rates were 5.1 and 5.4 times higher in Helsinki at the age of 15-24 and 25-44 years, whereas the respective rates in the whole country were slightly smaller (3.1 and 4.4 times) than in the general population. No suicides were registered among the 45-64-years-old drunken drivers. Suicides from poisonings were quite common (28 % in Helsinki and 25 % in the whole country) and the other most common causes of suicides were hanging and shooting.

DISCUSSION

We have been able to find only one recent study on mortality in a sample of convicted drunken drivers by Mann et al. (1993). Their sample consisted of all individuals convicted of a second drinking driving offence in two Ontario cities between late 1973 and 1978. The follow-up period was to the end of 1986. Mann et al. (1993) placed restrictions on interpretation of their results, such as the relatively small sample size, loss of the individuals to follow-up and bias in the selection of individuals referred by courts to the rehabilitation program. In our study it was possible to find all the deceased individuals and their death certificates and autopsy protocols in national registers and in this regard our materials are complete. Despite the relatively small size of our material and the quite short follow-up time several conclusions can be drawn from our findings. Foremost is the finding that crude mortality and cause-specific mortality from accidents, suicides and homicides were much higher among drunken drivers than in the general population. Also crude mortality from natural causes was clearly higher among drunken drivers. In general, these findings are in agreement with that of Mann et al. (1993).
However, in our material excess mortality from non-natural causes (accidents, suicides, homicides) in many age groups was much larger than in the Canadian material.

No marked differences were found in mortality patterns of drunken drivers between Helsinki and the whole country which suggests the universal nature of this phenomenon in Finland. Excess mortality of drunken drivers in Finland seems to limit only to males and not to females as discussed by Mann et al. (1993) in their material.

It is well known that heavy consumption of alcohol increases markedly the risk for premature death (Richman & Warren 1985, Poikolainen 1991, Perola et al. 1994). It has been estimated that in comparison to the general population the risk of premature death can be 2-7 times higher among alcoholics who have been in the treatment because of their alcohol problem. Our previous studies indicate that at least 1/3 and probably more than a half of Finnish drunken drivers are problem drinkers (Pikkarainen et al. 1985). In addition, about 2/3 of the Finnish drunken drivers are recidivists (Pikkarainen et al. 1995). In the present Helsinki material the number of the cases estimated to be problem drinkers was 51% in the group of non-natural deaths and 57% in the group of natural deaths. It seems therefore, that excess mortality of drunken drivers is strongly associated with mortality due to problem drinking and alcoholism.

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REFERENCES


