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Drinking patterns, risk taking and road accidents of young drivers: Results of a Swiss case-control study

Summary

A case-control study was conducted to test hypotheses about involvement in alcohol-related road accidents. Cases were defined as all male drivers between 18 and 25 years of age who were involved in a police-registered alcohol-related road accident in the Swiss cantons of Vaud and Ticino or the city of Zurich in 1990 and who had a BAC level of 0.8‰ and more (N = 306). Accident-free controls were drawn from registers of all persons with a driver's licence, matched for sex, age, and place of residence (N = 612). The main research instrument was a questionnaire distributed to cases and controls. Since response rates were relatively low in both groups (ca. 35%), specific analyses were undertaken to exclude the possibility of a selection bias. Results demonstrated that drinking pattern and risk behaviour were important contributing factors to the accidents. Especially, male persons with a permanent heavy-drinking style, males with a risky-driving style plus a regular or periodically heavy-drinking style, and persons who enjoy taking risks and drink to cope, increase their risk of being involved in an alcohol-related traffic accident more than sixfold. A tendency to engage generally in risky behaviour did not increase the risk of involvement in an alcohol accident.

Switzerland, like many other Western countries with mass motorization, is confronted with an overproportional involvement of young people in traffic accidents (OECD 1985)[1]. The annual Federal accident statistics constantly report a net overrepresentation of 20–24 year-old adults in all passenger-car accidents and in alcohol-related road accident with corporal damage[2]. The consequences of road accidents in this age-group are dramatic. Besides the human suffering and the personal and social costs connected with these accidents, road "accidents" remain by far the most prevalent cause of mortality in this age group[3]. These facts and a growing public concern about road accidents among young adults in Switzerland led to the design of a research project to examine from a social-epidemiological perspective the specific types of alcohol-related road accidents among 18–25 year-old drivers. The project was funded by the Swiss National Science Foundation and began in 1989. It has recently been completed with the publication of a final report[4].

The literature on accidents among young drivers is vast and growing rapidly (for recent reviews see[5,6]). As in the general field of research on "alcohol and accidents", there seem to be two typical approaches to the problem of young drunken drivers: a general approach from the accident- and safety-research perspective, which treats the "alcohol factor" as one element in a wider frame of the accident process; and a more specific alcohol-research approach, which treats alcohol-related accidents as "an acute, indirect consequence of alcohol consumption caused by behaviour modification"[7].

The first approach takes the over-representation of young people in accidents, compared with those from higher age groups, as being more a function of differential risk exposure (more week-end and night-time driving), lack of driving experience, and a greater readiness to engage in "risky driving behaviour" (like "speeding", or "driver conflicts"; [8]). The second approach favours epidemiological studies of the relationship between blood alcohol content (BAC), diminished driver capacity and

accident involvement[9]. For a Canadian sample of 15–20 year-old drivers who had consumed alcohol, Mayhew et al.[10] calculated an increased relative risk of 9 of being involved in an alcohol-related accident, compared with their non-drinking peers, and a doubling of the accident risk compared with that of young drivers over 20 years of age. The "alcohol factor" in the form of the measured blood-alcohol content values often becomes the main risk factor considered in discussing young person's alcohol-related accidents, at the expense of a multidimensional understanding of the "interrelationships among age, alcohol and other age-related factors, such as skill development and personal and social characteristics of youth who drive after drinking"[9].

The few studies that have been designed to examine alcohol and drunk drivers in their social and cultural environment[11], and with special reference to young drivers[12–15], tell us much about the age-specific characteristics of young drivers' alcohol accidents. It becomes obvious that for young people, drunk driving is by no means an isolated aspect of behaviour but very much an integral part of juvenile lifestyles, and risk-taking behaviour. There are clear "opportunity structures" in the young person's life when two otherwise routine forms of behaviour combine hazardously into a "drunk driving situation". The implications of these findings for the development of youth-specific drunk-driving prevention programmes have become increasingly obvious, as the recent edition of a special number of *"Health Education Quarterly"*[16] proves.

Another strand of research relevant here comes from the social-psychology field in studies of risk-taking behaviour in adolescents and young adults, in general[17,18] and in its relation to injury[19], especially to road accidents[6]. Recent work in this field is no longer bound by simplistic normative "risky behaviour assumptions" but inquires into the "risk perceptions" and the "risk benefits" of the young risk-taking person. As pos-

Day of week:	Monday	6.9 %
	Tuesday	6.9 %
	Wednesday	8.2 %
	Thursday	8.8 %
	Friday	15.7 %
	Saturday	28.1 %
	Sunday	28.5 %
Time of day:	between 10 p.m. and 6 a.m.	76.8 %
Weekend/night-time	Friday 4 p.m. – Monday 6 a.m.	67.8 %
Type of accident	single/self accident	75.2 %
	collision between vehicles	23.2 %
	other	1.7 %
Single/self accident during weekend/night-time		62.4 %
Sociodemographic characteristics of young drivers	male 96.1 %	
	female 3.9 %	
	age (evenly distributed)	peak 22–23 years
	nationality: Swiss	70.6 %
	Italian	8.5 %
	French	5.9 %
	all others	15.0 %
Number of passengers in the car:	driver only	62.4 %
	1 passenger	28.1 %
	2 passengers	6.5 %
	3 or more passengers	3.0 %
Blood alcohol content	0.5–0.79	2.1 %
	0.8–0.99	11.4 %
	1.00–1.49	34.9 %
	1.5–1.99	32.1 %
	2.0>	19.5 %
Other risk factors mentioned in police reports	use of illegal drugs	2.0 %
	use of prescriptive medicine	2.9 %
	fatigue	7.5 %
	excess speed	32.0 %
	seat-belt not fastened	24.7 %
	driving without valid driver's licence	9.5 %
	previous penalties for law violations	6.0 %

Table 1. *"Portrait" of 306 alcohol-related accidents of young drivers 18–25 years old (%).*

sible reasons for risk-taking Jonah lists "outlet for stress, aggression, expression of independence, means of increasing arousal, impressing others, means to another end"[8].
The work by R. Jessor and his collagues is of special importance here, especially his hypotheses that "risky driving behaviour emerges as an aspect of a larger adolescent lifestyle and as embedded in the same personality, perceived environment and behavioural variables as other adolescent problem behaviour such as delinquency, problem drinking, and illicit drug use"[20]. Jessor speculated on what the "risk benefits" of drunk driving for young persons might be: "to take control over their lives by acting independently, to express opposition to adult authority and conventional society, to cope with anxiety, frustration, fear to failure at school, to gain acceptance into a peer group, to show that one is cool or to demonstrate to others that one has matured and can now engage in adult behaviour (e.g. driving after drinking)". Other authors have also stressed the coping aspect of drunk-driving behaviour[21–23].
In our choice of method, we followed the warning of Simpson et al.[24]: "... research must first demonstrate, above the level of simple face validity, that such factors are differentially present in those who crash, compared to those who do not, and ultimately to be of utility for the development of contermeasures, ...". These considerations made use choose the research design of a social-epidemiological case-control study.

Portrait of young driver's alcohol-related road accidents in three areas of Switzerland

Table 1 summarizes the relevant information about the accidents examined and the persons involved; the data are based on 306 police reports of all alcohol-related accidents in the investigated areas.

Underlying hypotheses of the case-control study

The hypotheses tested were as follows:
Young drivers who drink small amounts of alcoholic beverages (less than 40 g pure alcohol/day), regularly or occasionally, do not increase their risk of involvement in an alcohol-related road accident, but drivers who drink more than 40 g/day increase their chance of involvement in such an accident, and this increase is more prominent if they drink such quantities regularly. *(Hypothesis I: quantity and frequency of drinking)*
Young drivers who live in a sociocultural environment where the norms as regards alcohol consumption are permissive (with higher average consumption, more integration of alcohol consumption into daily life, and higher acceptance of being drunk) combine drinking and driving more often and thus increase their risk of involvement in an alcohol-related road accident. *(Hypothesis II: sociocultural integration of drinking)*
Young drivers who have acute or chronic problems with alcohol or addiction increase their risk of involvement in an alcohol-related road accident. *(Hypothesis III: problem drinking)*
Young drivers who display a general tendency to risky behaviour increase their risk of involvement in an alcohol-related road accident. *(Hypothesis IV: generally risky lifestyle)*
Young drivers who display a generally risky driving-style increase their risk of being involved in an alcohol-related road accident. *(Hypothesis V: risky driving)*
This increase is even more pronounced when these drivers also have heavy-drinking patterns. *(Hypothesis VI: combination of heavy drinking and risky driving)*
Young drivers who drink *and* drive to cope with psychosocial stress or problems increase their risk of being involved in an alcohol-related road accident. *(Hypothesis VII: combination of "risk benefits" from coping drinking-and-driving)*

Methods

Sampling and control for selection bias

In this case-control study, every male car driver between 18 and 25 years of age who had been involved in a police-registered alcohol-related road accident in the Swiss cantons of Vaud and Ticino or in the city of Zurich in 1990 was defined as a *case*. Due to a very small number of female drivers involved in the investigated alcohol-related accidents, the case control study was restricted to male drivers. Alcohol-relatedness of accidents was determined by a BAC of more than 0.8‰ (BAC-values were available for 97.1% of all records). For each case two *controls* without an accident in that year were taken from the populaton at risk, matched for sex, age, and place of residence. It was assumed that controlling for these factors would implicitly control for other possible confounders such as education and income. This assumption can be and was tested empirically (see below).
Technically, controls were selected on the basis of lists of all persons in the registers of drivers with a valid driving licence in Vaud, Ticino and Zurich. To measure the influencing factors postulated in the hypotheses a questionnaire was administered to cases and controls. This questionnaire is available on request to the authors (in three languages: French, German, Italian).

Figure 1 gives an overview of the sampling procedure.

Since overall response rates were comparatively low (ca. 35% for cases as well as for controls), precautions had to be taken to exclude the chance of (self-)selection bias. Such a bias would mean that the results of the study would be limited to persons who answered to the questionnaire and that these persons might differ systematically from the rest of the sample. Thus results would no longer be representative for young drivers and their involvement in alcohol-related road accidents in general.

Since all official accident records were available in the project we were able to test the hypothesis that responders to the questionnaire differed systematically from the rest of the sample. Four variables were considered in this respect: age, sex, nationality and BAC at time of the accident. Results show no significant differences in age or sex (Chi^2 distribution tests). The mean blood alcohol content did also not differ significantly between responders and non-responders (means of 149 millilitres and 160 millilitres alcohol level or 1.5 or 1.6 per thousandth; t-test for sample means = 1.7; not significant). As expected, relatively more Swiss drivers responded than drivers of foreign origin ($Chi^2 = 5.4$; $df = 1$; $p < 0.05$). This was mostly due to the fact that drivers of other nationalities were more difficult to locate.

Since the majority of the hypotheses tested are related to alcohol in one way or another, the lack of difference in blood alcohol content can be considered as a strong indicator that responders and non-responders among the alcohol-accident drivers do not differ in important and relevant respects, and thus that the results of the main study can be generalized.

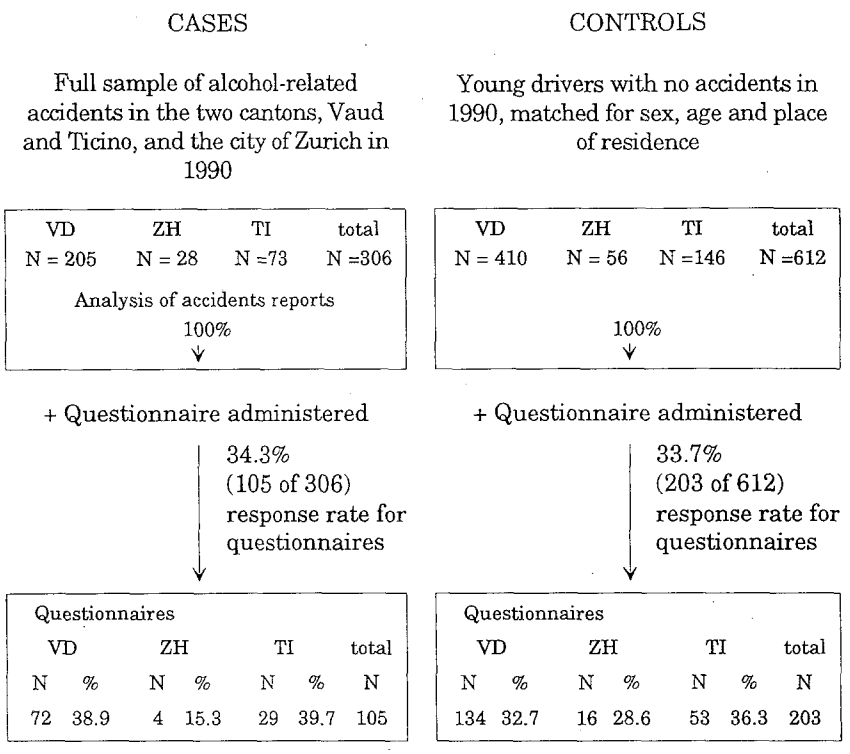

Figure 1. *Sampling scheme of the case-control study of alcohol-related road accidents of young adults (18–25 years old)*

Ascertainment of comparability between cases and controls

Before testing the hypotheses we tried to ascertain statistically whether cases and controls differed in any respects, *other than* the postulated factors, that could influence involvement in accidents. Such an analysis is necessary to ensure that one basic assumption of case-control studies is not violated, namely that cases and controls come from the same population[25]. An empirical analysis of cases and controls responding to the questionnaire showed that this requirement was only partly reached. While matching resulted in no differences in sex, age, nationality, or more than 20 different indicators of driving exposure, the responding cases and controls showed significant differences in education, which, on the average, was higher for controls than for cases. Therefore, all subsequent analyses of the relative risks of particular drinking-, driving-, or life-styles were adjusted for this variable.

General procedure of hypothesis testing

The general procedure of hypothesis testing was as follows:

– A question or, more often, several questions were included in the questionnaire to measure the postulated influencing factors.

– In the case of only one question as a measure of an influencing factor, the relative risks were approximated by odds ratios derived from logistic regression analyses including the variable and adjusted for education (dependent variable: involvement in road accidents yes/no)[26,27].

– In the case of more than one question as a measure of an influencing factor, usually classical test theory was used to establish scales. This means that factor analysis was

used to examine which of the questions were loaded on a common factor or construct. Subsequently, all questions with high loadings on a factor were combined into a scale and unidimensionality was checked by using Cronbach's analysis[28]. If Cronbach's alpha was judged sufficiently high, a scale was established. Since the value of Cronbach's alpha depends to a large degree on the number of items in the test[29] no single threshold for acceptance can be used. For our purposes we decided to set 0.8 as limit for scales with more than 10 items, 0.6 as limit for scales with more than 5 items and 0.5 as limit for scales with less than 5 items. These limits are in accordance with the rules of thumb given in the literature on test theory.

– After scales had thus been established, they were dichotomized or trichotomized according to the underlying hypothesis. Finally, logistic regressions were carried out to estimate relative risks for categories, again adjusted for education[26,27].

Results

Details of scale construction and prevalences of the respective behaviour are displayed in the two tables showing drinking patterns (Table 2) and risk-taking behaviour (Table 3).

Tables 4 and 5 show the relative risks attached to the postulated influencing factors, thus allowing tests of the hypotheses.

All the hypotheses but one are well supported by the data. Thus, moderate drinkers do not increase their risk of involvement in an alcohol-related car accident over that of non-drinkers, whereas periodically heavy drinkers already have a risk three times higher, and for permanently heavy drinkers the risk is increased more than six-fold (Table 4). Sociocultural integration of drinking seems to play an important role in providing opportunities to acquire heavy-drinking styles, leading to an increased accident risk. By itself, a high level of social drinking leads to an increase in the relative risk of involvement in an alcohol-related car accident by about fourfold. This risk is even higher than the risk for self-perceived problem drinking (Table 4). It should be noted that our sample contained no one who would be classified as being addicted to alcohol. Therefore the indicators for problem drinking are rather "soft" (see also Table 2).

Concerning risk, the hypotheses are also supported by the results, except for hypothesis IV (see above), which states that involvement in alcohol-related road accidents is more likely for persons who generally display more risky behaviour. Leading a risky life in general does not automatically lead to involvement in car crashes with alcohol involvement in contrast to specific risk-taking while driving (Table 5). Thus one cannot say that the general personality characteristic, "risk-taking" seen in some young drivers contributes to alcohol-related road accidents.

The most striking increase in risk of accidents seems to be for drivers who drink-and-drive to cope with stress (Table 5). This risk is increased about seven-fold, and is the highest of all reported in the study. Apparently, the mixture of the psychological conditions described in hypothesis VII leads to a specific vulnerabil-ity to being involved in alcohol-related car crashes.

Discussion

Prior to discussing substantive results and their implications methodological questions should be addressed. Crucial to all case-control studies is the selection process for cases and controls. For the cases, we relied on a full population of drivers of a defined age involved in an alcohol-related road accident in certain geographic areas in 1990, as defined by the police. Of course, this procedure may be flawed by possible selection biases[30], but it has to be kept in mind that all definitions of alcohol-relatedness in official traffic statistics are established in this way. Thus, our cases might be more appropriately defined as being involved in an "officially declared alcohol-related accident", and the relative risks should be interpreted likewise. However, evidence exists that the overlap between official and "real" alcohol-related accidents is quite high for persons between ages 18 and 25, since this group – considered to be a risk group – will quite often be tested for BAC when in doubt. Moreover, the more severe the consequences of an accident are, the higher is the risk of detection and thus of the accident coming within the official definition of alcohol-relatedness.

Two further methodological problems concern the questions of whether cases and controls stem from the same population, and whether the low response rate led to selection bias. Both questions were adressed empirically (see above). Since most of the variables mentioned in the relevant literature were controlled in an effort to secure the comparability of cases and controls, we are quite confident concerning this point. Concerning possible selection bias due to low response rates the conclusions cannot be as positive. Although we were able to compare some key characteristics of responders with non-responders on the bias of the records with affirmative results, this procedure is limited and cannot be expanded to controls. Thus, there remains the possibility of some systematic errors in the appraisal of risk factors. However, even if they exist, they should partly have worked against our hypotheses, since especially people with problematic

Variable name	Source and method	Criteria	Prevalence cases	controls	total
Drinking patterns (Hypothesis I)			$chi^2 = 20.2$ df = 3 $p < 0.001$		
non-drinking	quantity-frequency measure of alcohol consumption for last week (QFQ)	abstainer or did not drink any alcoholic beverage during the last week	18.1 %	34.0 %	28.6 %
moderate drinking	QFQ	never more then 3–4 glasses a day (= 30–40 g pure alcohol/day)	24.8 %	34.0 %	30.8 %
periodically heavy drinking	QFQ	at least once, at most three times a week more than 3–4 glasses per day (= min. 40–50 g pure alcohol/day)	50.5 %	30.0 %	37.0 %
permanently heavy drinking	QFQ	at least four times a week more than 3–4 glasses per day	6.7 %	2.0 %	3.6 %
Social drinking (Hypothesis II)	Factor analytically derived scale with 16 items, e.g.: regular pub going, engaging in drinking rounds, having many drinking friends		$chi^2 = 25.7$ df = 2 $p < 0.001$		
none		persons indicating no drinking or no social drinking	19.1 %	39.4 %	32.4 %
low/medium		less than 10 positive responses on the 16 items	30.5 %	37.4 %	35.1 %
heavy		more than 10 positive responses on the 16 items	50.5 %	23.2 %	32.5 %
	Cronbach's alpha : 0.80				
Self-perceived problem drinking (Hypothesis III)	Factor analytically derived scale with four items:		$chi^2 = 13.5$ df = 2 $p < 0.005$		
no drinkers problems	– drinking to *cope* with during last week	abstainer or did not drink	20.0 %	34.5 %	29.5 %
drinkers/no perceived problem	– *regrets* about behaviour after having drunk	less than 3 positive responses on the 4 items	55.2 %	54.7 %	54.9 %
drinking perceived as problem	– *bad conscience* after drinking – *relief drinking*	at least 3 positive responses on the 4 items	24.8 %	10.8 %	15.6 %
	Cronbach's alpha : 0.56				

* definition of a glass: Standard drink unit = 10 g pure alcohol (cf. Schütz, 1983)

Table 2. *Drinking patterns and involvement in alcohol-related road accidents.*

Variable name	Source and method	Criteria	Prevalence (308) cases	controls	total
General risky lifestyle (Hypothesis IV)	Factor analytically derived scale with 7 items, eg: seeking risky adventures, being fascinated by risky sports, accepting risky business transactions		chi2=1.3 df=1 n.s.		
yes		at least 5 positive responses	17.1%	12.3%	14.0%
no	Cronbach's alpha: 0.66	all others	82.9%	87.7%	86.0%
High risk driver (Hypothesis V)	Factor analytically derived scale of 8 items on risky driving styles, e.g. participation at improvised car races, speeding even if one has time, alcohol consumption during driving		chi^2=10.2 df=2 p<0.005		
no		all others	81.9%	93.6%	89.6%
yes	Cronbach's alpha 0.69	at least 6 positive responses on the 8 items	18.1%	6.4%	10.4%
Risky driving + heavy drinking (Hypothesis VI)	Combining the scale of risky driving with the QFQ		chi^2=14.4 df=1 p<0.001		
no		all others	87.6%	98.0%	94.5%
yes		high-risk driving *and* heavy drinkers (periodically or regularly)	12.4%	2.0%	5.5%
Risk benefits from driving and drinking to cope (Hypothesis VII)	An index was constructed on the base of three items about risk benefits of driving – driving to cope with negative or positive life-events – driving to forget about anger, nervousness – driving as acting-out behaviour and the item on drinking to cope with problems		chi^2=24.6 df=1 p<0.001		
no		all others	77.1%	95.6%	89.3%
yes		persons with at least two positive responses on the 3 risk-benefit items *and* a positive response on the coping drinking item	22.9%	4.4%	10.7%

Table 3. *Risk-taking behaviour and involvement in alcohol-related road accidents.*

drinking patterns could be expected to be non-responders.
Finally, the sometimes wide confidence intervals should be adressed. A priori sample size calculations were hindered by the fact that the prevalence of the postulated risk behaviour in the population is not very well known. Thus, the prevalences of some kinds of behaviour (e.g. of permanently heavy drinking, with a prevalence of only 3.6% in our sample) were slightly underestimated, resulting in relatively small sample sizes. However, since all but one of the hypotheses could not be falsified the statistical power proved to be sufficiently high.
Although the results of this study are not particularly surprising, the comparison between cases and controls makes it more than clear that some basic life-style elements are indeed different for the young males involved in alcohol-related accidents, and put them at greater risk. Extremely mobile lifestyles and leisure activities, centered on a gregarious pear-oriented social life in pubs, bars, cafés and homes of friends, combined with drinking patterns of periodic or more permanent "heavy" alcohol consumption, provide the framework of a risky blend of two routine forms of behaviour, drinking and driving.
Measured by conventional categories of alcoholism, the drinking styles of the vast majority of these young males are not "alcoholic" in the sense of a dependence syndrome, but fall more under the vague label of "problem drinking". The motives given for drinking are clearly in the direction of a rather unspecified "recreational" or "coping" drinking. The distinction between a pattern of heavy social drinking (with the more or less intended effects of relaxation, social affiliation, facilitation of interaction, relief from the tension of perceived stress, etc.), and a pattern of problem drinking as a necessity for coping with life problems, is a matter of definition.
Into this opportunity structure of culturally integrated drinking and driving patterns of young people merges the specific dimension of risk-taking behaviour. The part of deliberate risk-taking which can be attributed to alcohol drinking is difficult to estimate. The young male drivers themselves were mostly convinced that their ability to drive had not been affected before the accident. Learning aside the possibility of denial and rationalization after the fact/crash, we can say that drinking explicitly in order to engage in adventurous driving as a rite of passage is very rare. Although there is a tendency for the alcohol-accident cases to admit to more risky driving styles, there was no indication that they had a more generally risk-taking way of life.
What seems to be of more importance than considering drinking and driving as a risky form of behaviour per se – an attitude which is not shared by most of the respondents – is to emphasise that certain "car using styles" expose the drivers to a high accident risk. What we have labelled as "coping driving", and what amounts to a special existential gain for the young male driver resulting from risky driving behaviour (e.g. tension relief, enhancing self-esteem and status among peers etc.) is a dangerous ingredient in the drinking-driving cocktail. Using alcohol for its drug properties and driving around in the "psychoactive drug" called "car" are very risky coping strategies for managing young lives.
We have to say a few words about the omnipresent "problem behaviour" theory for explaining young drivers' alcohol-related accidents. Problem behaviour as a symptom

Drinking patterns[1] (Hypothesis I)	Odds ratios[2]	95% Confidence intervals lower limit	upper limit
no drinking	1.00		
moderate drinking	1.07	0.52	2.21
periodically heavy drinking	3.07	1.58	5.98
permanently heavy drinking	6.09	1.35	27.49
Social drinking[1] (Hypothesis II)			
none	1.00		
low/medium	1.48	0.76	2.91
heavy	4.21	2.16	8.20
Self-perceived problem drinking[1] (Hypothesis III)			
no drinking	1.00		
drinking/no problem perceived	1.68	0.91	3.09
drinking perceived as problem	2.80	1.24	6.31

[1] For definitions of all behaviour s. Table 2
[2] Odds ratios were derived from logistic regression analyses adjusted for education (s. text for further explanations)

Table 4. *Relative risks of involvement in alcohol-related road accidents by drinking patterns.*

General risky life style[1] (Hypothesis IV)	Odds ratios[2]	95 % Confidence intervals lower limit	upper limit
no	1.00		
yes	1.40	0.70	2.80
High-risk driver (Hypothesis V)			
no	1.00		
yes	3.12	1.42	6.87
Combination or risky driving and heavy drinking (Hypothesis VI)			
no	1.00		
yes	6.14	1.89	19.92
"Risk benefits" from driving and drinking to cope (Hypothesis VII)			
no	1.00		
yes	6.86	2.83	16.63

[1] For definitions of all behaviour s. Table 3

[2] Odds ratios were derived from logistic regression analyses adjusted for education (s. text for further explanations)

Table 5. *Relative risks of involvemment in alcohol-related road accidents by selected risky driving and drinking patterns.*

of adolescent crisis, of the type of the "angry young man" in his car, is a minority form of behaviour in our sample. It is definitely not the driving criminal who is creating the alcohol-accident problem in Switzerland. That a subgroup of "problematic" youngsters exists, and that they have a higher alcohol-related accident risk, is beyond doubt, but putting them under more formal or informal social control would not solve the public health problem of young drivers' alcohol-related accidents.

Finally, it is clear that young drivers under the influence of alcohol do not operate completely out of control while sitting in a "black box of risky passions", but find themselves in a socioculturally defined opportunity structure and acting according to certain learned risky behavioural patterns. However, these social-epidemiological explanations do not account fully for the actual single crash.

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Zusammenfassung

Trinkmuster, Risikoverhalten und Strassenverkehrsunfälle junger Fahrzeuglenker. Ergebnisse aus einer schweizerischen Fall-Kontroll-Studie

Mit Hilfe einer Fall-Kontrollgruppen-Studie wurden Hypothesen über Einflussfaktoren bei alkoholbezogenen Strassenverkehrsunfällen junger männlicher Erwachsener getestet. Als Fälle wurden dabei alle Fahrzeuglenker zwischen 18 und 25 Jahre und mit einem Blutalkoholgehalt von 0.8‰ und mehr definiert, die im Jahre 1990 in einen polizeilich registrierten Strassenverkehrsunfall in den Kantonen Waadt und Tessin sowie in der Stadt Zürich verwickelt waren (N = 306). Als Kontrollpersonen wurden per Zufallsauswahl aus den Listen der Fahrausweisinhaber der Untersuchungsgebiete die doppelte Anzahl von unfallfreien Personen, gematcht nach Geschlecht, Alter und Wohnort, bestimmt (N = 612). Hauptsächliches Forschungsintrument war ein an Fall- und Kontrollgruppe gerichteter Fragebogen. Wegen einer relativ geringen Rücklaufquote bei beiden Gruppen (ca. 35 %) wurden spezielle Analysen durchgeführt, um die Möglichkeit eines Selektionsbias auszuschliessen. Die Ergebnisse lassen erkennen, dass die Trinkmuster alkoholischer Getränke und das verkehrsspezifische Risikoverhalten wichtige Einflussfaktoren auf das Alkoholunfallgeschehen sind. Junge männliche Fahrzeuglenker mit einem Trinkmuster permanent-starken Alkoholkonsums oder mit einem riskanten Fahrstil und regelmässig oder periodisch-starkem Alkoholgebrauch sowie junge Fahrer mit einem Verhaltensmuster des kombinierten Autofahrers und Alkoholtrinkens zur Bewältigung psychosozialer Spannungen weisen ein bis zu sechsfach erhöhtes Alkoholunfallrisiko auf.

Résumé

Manières de boire, comportements à risque et accidents de la circulation chez les jeunes conducteurs. Résultats d'une étude cas-contrôles réalisée en Suisse

Un certain nombre d'hypothèses concernant les facteurs d'influence sur les accidents de la circulation liés à l'alcool chez les jeunes conducteurs ont été masculin testées à l'aide d'une étude par cas-contrôles. Comme cas, nous avons retenu tous les jeunes (N = 306) entre 18 et 25 ans ayant un taux d'alcoolémie de 0.8‰ et plus, impliqués dans un accident de la circulation au cours de l'année 1990 dans les cantons de Vaud et du Tessin et la ville de Zurich. Le groupe de contrôle était constitué des jeunes conducteurs «sans accidents» (N = 612), tirés au sort parmi les listes des détenteurs de parmi de conduire dans les 3 régions mentionnées. Ils ont été sélectionnés en veillant aux mêmes critères d'âge, de sexe et de lieu de résidence que dans le groupe des cas. L'instrument principal de recherche était un questionnaire adressé aux jeunes des deux groupes. Le taux de résponses ayant été relativement faible pour les cas comme les personnes-contrôle (35%), il a fallu procéder à des test de distribution afin d'exclure d'éventuels biais de sélection. Les résultats de l'étude montrent que les types de consommation d'alcool et les comportements à risque au volant sont des facteurs importants du risque d'accident de la circulation des jeunes conducteurs masculins des catégories suivantes: «buveurs réguliers à consommation assez élevée», ou «buveurs à consommation périodiquement élevée et à comportement risqué au volant» ou «jeunes conducteurs combinant la conduite automobile et la consommation d'alcool comme défoulement face à des tensions psychosociales» présentent un risque relatif d'accident jusqu'à six fois plus élevé.

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