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Short Report

Alcohol-related Problems and Drink Driving: A Questionnaire Survey of Male Drivers¹⁾

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A questionnaire survey was conducted on male drink driving offenders and a comparison group in order to investigate the relation between alcoholrelated problems and drink driving behavior in view of basic evidence provided on developing optimal treatment programs. Self-reports on driving, drinking and drink driving behavior were compared between and within both groups. The results showed a significant yet limited association between drinking and drink driving behavior. Future studies should focus on psychological constructs together with alcohol problems.

key words: drink driving, alcohol-related problems, recidivism

Problems

It is established in western countries that alcoholrelated problems are among the most powerful predictors of drink-drive (DD) recidivism (Yu, 2000). The predictive power of Blood Alcohol Concentration (BAC) for identifying the seriousness of alcohol-related problems is also widely recognized. The legal limit of Breath Alcohol Concentration (BrAC) while driving in Japan at 0.15 mg/l is stricter than in many other countries, and few studies have broached the issue of low BAC-level. The purpose of the study, as the first phase of an attempt to understand DD behavior, is to investigate the relation between drinking and DD behavior, not only by comparing DD offenders and a comparison group but also by comparing differences within the groups.

Method

Design. A questionnaire survey was conducted from January to May 2007 on male DD offenders whose driving license was suspended (N=159) and a male comparison group (N=196). The selection criterion for comparison was having a valid driving license and living in the same or a nearby prefecture as the DD offenders.

Questionnaire. Included in the questionnaire was information on demographics, driving (i.e., driving dis-

tances, frequency, subjective reliance on private car use), drinking (i.e., daily alcohol consumption, drinking frequency), alcohol dependency screening questionnaires CAGE (Ewing, 1984) and KAST (Saito & Ikegami, 1978), and DD experiences (e.g., BrAC at detection by the police, DD frequency in the last year on a semi-ordinal scale). The comparison group was asked whether they experienced DD in the last year. Subjective reliance on private car use was measured by presenting 11 different situations on 5-point scales.

Recruitment. DD offenders were solicited at the driving license centers in Ibaraki and Kanagawa upon their entry to offender re-education courses. We offered them lunch and a coupon worth \$1000 (achieving a response rate of 72%), and conducted the survey during lunch breaks. The comparison group was first recruited from men who had renewed their licenses at the driving license center in Ibaraki (n=24, response rate of 19%). We later recruited male drivers by placing als offering a reward of \$4000 in so-called *freepapers*. Both groups were assured of confidentiality and total anonymity.

Results

Descriptive statistics. DD offenders reportedly drink more per day (M=72 g of alcohol, SD=64) and more often than the comparison group (M=37 g, SD=40). According to KAST and CAGE, 38% and 27% of DD offenders were respectively categorized as being possibly alcohol dependent. DD offenders reportedly drive longer distances (M = 18,483 km/year, SD = 25,766) and more often than the comparison group (M=9,042 km)year, SD = 10,698). Such differences between the groups remained even after being controlled for the prefectures where they reside as a covariate (F(1,350))=16, p < .000). DD offenders also reported stronger subjective reliance on private car use than the comparison group (t(325) = 4.6, p < .000). BrAC was reported by 102 DD offenders (M = 0.26 mg/l, SD = 0.15, Min. = 0.13, Max.=1.00). Thirty-seven percent of DD offenders stated their DD frequency in the last year was "only once," while 31% stated "6 times or more." Ten percent of the comparison group admitted their DD experience in the last year.

BrAC and relevant variables among DD offenders. Table 1 shows the Pearson correlation coefficient between BrAC and relevant variables for DD offenders. A significant correlation was found between subjective reliance on private car use and drinking variables. Based on this result, regression analysis to predict BrAC was conducted using five independent variables (with four variables found to be significantly correlated with BrAC as shown in Table 1, plus DD frequency in the last year). Upon applying the backward elimination method, the KAST score and DD frequency

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BrAC (mg/l)	Driving distances 0.00 (p =.988)	Driving frequency 0.00 (p=.969)	Subjective reliance on car 0.22 (p=.047)	
	Daily alcohol consumption	Drinking frequency	KAST score	CAGE number of Yes
BrAC (mg/l)	0.23 (<i>p</i> =.026)	0.26 (p=.031)	0.33 (<i>p</i> =.001)	0.18 (<i>p</i> =.073)

 Table 1
 Correlation between BrAC, driving- and drinking-related variables among DD offenders (n = 102)

Note. Due to missing data, the size of data is smaller than the original sample size of DD offenders.

Table 2Partial correlation between past DD frequencies and driving- and drinking-related variables
among DD offenders controlling for age (n=72)

	Driving	Driving	Subjective reliance	•
	distances	frequency	on car	
Frequency of DD in the	0.14	0.29	0.15	
last year	(p=.232)	(p = .014)	(p=.225)	
	Daily alcohol	Drinking	KAST	CAGE number
	consumption	frequency	score	of Yes
Frequency of DD in the	0.18	0.25	0.19	0.18
last year	(p=.136)	(p = .035)	(p = .107)	(p = .141)

Note. Due to missing data, the size of data is smaller than the original sample size of DD offenders.

remained in the final model (*F* (2, 72)=14.51, p < .000, $R^2 = 0.29$, Adjusted $R^2 = 0.27$).

DD frequency and relevant variables among DD offenders. Since a significant correlation was found between age and DD frequency (r=-.17), a partial correlation was calculated between DD frequency and relevant variables while controlling for the effect of age. As shown in Table 2, a significant partial correlation was found only between frequency of driving and drinking.

DD experience and relevant variables among the comparison group. Logistic regression analysis was conducted to predict the DD experience among the comparison group in the last year by using variables shown in Tables 1 and 2. Upon applying the backward elimination method, two significant variables (subjective reliance on private car use and KAST score) remained in the final model. Hosmer-Lemeshow's model fit showed a good fit (χ^2 (8)=8.71, p=0.367).

Discussion

DD offenders drink and drive more than the comparison group, and their excessive drinking may lead to alcohol-related problems. Of the analyzed variables, KAST scores are apparently associated with BrAClevel for DD offenders and the past DD experience for the comparison group. The results, however, also indicate that drinking behavior only partially explains DD behavior. Future studies should simultaneously investigate such psychological constructs as beliefs, attitudes and drinking behavior. The limitations of this study mainly arise from its use of self-reports: some participants were perhaps influenced by social desirability associated with alcohol use and DD behavior. This possibly led to an under-reporting of past DD experiences. Furthermore, the comparison group included men who have experienced DD. Screening questionnaires such as KAST and CAGE provide useful information, but should be followed by medical diagnosis in order to ascertain the seriousness of alcohol problems.

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