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Short communication

Self-reported driving behaviour and attitudes towards driving under the influence of cannabis among three different user groups in England

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Abstract

The study characterized self-reported driving behaviour, attitudes towards driving and assumptions about the effects of cannabis on driving, among two different volunteer groups: 63 regular cannabis users (RCUs; cannabis use>monthly) and 46 undergraduate student users, all from the West Midlands. More detailed information was provided by structured interviews with an additional sample of 23 regular users from southern England. Within each group, many respondents had driven whilst under the influence of cannabis (regular users, 82%; students, 40%; interviewees, 100%). Majorities among the regular users and interviewees continued to do so at least monthly. Most users believed that cannabis impaired driving only slightly. More stops by the police for drug-driving than for drink-driving were reported, but these rarely resulted in conviction and were not deterrent. Hence, cannabis users are very willing to drive after using the drug (often combined with alcohol), and even while intoxicated. They consider its effects on driving to be minimal; indeed, many consider it to promote better driving. Attitudes towards drink-driving were much more negative. Finally, most interviewees said that roadside drug testing would be the only efficacious deterrent to drug-driving.

Keywords: Cannabis; Marijuana; Alcohol; Driving; Risk; Attitudes

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1. Introduction

Epidemiological and experimental data support the notion that cannabis use is detrimental to car-handling skills. For example, there are many reports that, after alcohol, cannabis is the most frequently detected psychoactive drug in casualties of road traffic accidents (e.g., Cimbura, Lucas, Bennett, & Donelson, 1986; Mason & McBay, 1984; Mercer & Jeffrey, 1995), and in drivers arrested for erratic driving (e.g., Gjerde & Kinn, 1991). Furthermore, laboratory-based driving simulator tests have supported the view that cannabis impairs behaviours relevant to driving (e.g., Rafaelson et al., 1973; Robbe, 1994). However, there is still a dearth of information concerning actual driving habits under the influence of cannabis, and the factors that influence the decision to drive (or act as a deterrent). Robbe (1994) reported that cannabis users are aware that their driving is impaired by the drug, but are still willing to drive after using it. In a recent survey in Scotland (Neale, McKeganey, Hay, & Oliver, 2001), drug users reported driving more frequently after using cannabis than after any other illicit drug, but they perceived their driving to be less dangerous following cannabis use. The present two-part study first surveyed the attitudes and behaviour of a sample of regular cannabis users (RCUs) from the West Midlands towards driving after using cannabis. Driving habits after drinking alcohol, and attitudes towards drink-driving, were assessed for comparative purposes. A sample of university students was also surveyed, since cannabis use is widespread amongst university students (e.g., Webb, Ashton, Kelly, & Kamali, 1996), and they represent a group from which long-term, regular users are likely to emerge. The second phase of the study used structured interviews of a separate sample of regular cannabis users to provide a more detailed characterization of the self-reported physical and psychological effects of cannabis and alcohol on driving performance.

2. Methods

A questionnaire addressing drug use and driving habits was screened using three daily cannabis-using volunteers, and revised. A "snowball" method of recruitment was adopted, whereby self-declared regular cannabis users (RCUs; cannabis use>monthly) distributed questionnaires to other RCUs known to them, and they in turn passed on questionnaires to others. Eighty questionnaires were distributed within the West Midlands (Birmingham, Coventry, Wolverhampton), of which 68 (85%) were returned via the original distributors. No payments were made. The five least frequent users were excluded to derive a sample of 63 RCUs. In addition, second-year undergraduate science students from two different West Midland universities were approached before or after lectures to complete the questionnaire and return it anonymously via a drop-off point. In total, 65 out of 150 questionnaires were returned (43.4%). Forty-six of the student respondents (70.8%) had smoked cannabis, so analyses were based on these 46 respondents. One unit of alcohol was defined as equivalent to one small glass of wine, one standard measure of a spirit, or a half-pint of beer.

For the structured interview study, questions addressed patterns of drug- and drink-driving behaviour; attitudes towards driving under the influence of cannabis and alcohol; and road

accident involvement and driving convictions. Interviews (lasting approximately 45 min) took place with 23 male regular cannabis users recruited from Berkshire as volunteers for a driving simulator study. Recruitment was independent of the previous sample. The study recruited cannabis users who were also drivers: not specifically people who drove under the influence of cannabis. All provided informed consent. Groups were not directly compared statistically because of likely differences in their backgrounds and drug experiences.

3. Results

3.1. Questionnaire responses

3.1.1. Participant characteristics, patterns of drug use and driving behaviour

As might be expected, the RCUs were generally older than the students, and they used cannabis more frequently (Table 1). Other illicit drug use was lower among the students, but for both groups, the rank ordering of prevalence was similar (use of amphetamines>MDMA>LSD>cocaine). Levels of alcohol consumption were also similar between groups (Table 1). Nearly all of the RCUs (96.8%) were drivers, and a high proportion of these (91.8%) would drive at least weekly. Fewer students drove (87%), and only 40% would drive weekly. A higher proportion of RCUs (82.0%) than students (40.0%) reported ever driving under the influence of cannabis (although the proportion of the students is still surprisingly high), and the RCUs also drove more frequently after consuming cannabis (Table 2). In addition, a greater proportion of RCUs reported ever driving after drinking more than 4 units of alcohol (23%) than did students (7.5%); 6.6% of the RCUs (compared to only one student) did so on a weekly basis. About half of those who reported driving after smoking cannabis took the drug in combination with alcohol (RCUs 43.3%, students 50.0%).

When asked whether or not they would smoke cannabis at a party that they had planned to drive home from, the most frequent response among the RCUs (36.1% vs. 10% students) was

Table 1
Characteristics of the two groups of participants in the questionnaire study: Regular users of cannabis (selected for use>monthly) and student users of cannabis

	Regular users (n=63)	Students (n=46)
Age (years; mean±S.D.)	28.8±6.6	21.5±3.7
Sex (males:females)	36:27	26:20
Daily cannabis users (%)	39.7	17.1
Cannabis use 1–6 days per week (%)	41.2	40.0
Cannabis use less than weekly (%)	19.1	42.8
Alcohol drinkers (%)	95.2	95.7
Units of alcohol consumed/week (mean±S.D.)	18.4±13.5	16.9±10.6
Alcohol use 1–6 days per week (%)	90.0	93.1
Use other illicit drugs (%)	82.5	45.7

Table 2
Percentages of the two groups of participants in the questionnaire study who drive after using cannabis, sorted by regularity (drivers only)

Frequency of driving after cannabis	Regular users, n=61 (%)	Students, n=40 (%)
Weekly	42.6	12.5
Approximately monthly	18.0	10.0
Rarely	21.3	17.5
Never	18.0	60.0

that they would get "high" then drive home; among students, the most frequent response (22.5%) was that they would not take cannabis. Perhaps surprisingly, when asked if they tried to counteract the effects of cannabis and/or alcohol before driving, a higher proportion of RCUs (27.6%) compared with students (12.9%) reported that they would, e.g., by drinking coffee, and/or eating.

3.1.2. Opinions about drug- and drink-driving impairment

Of the 50 RCUs who reported driving after consuming cannabis, only 12% believed their driving to be very much impaired; 58% believed their driving was only slightly impaired, 6% not at all impaired, and 24% actually thought their driving was improved. Of the 16 students who also drove whilst under the influence of cannabis, only 2 believed their driving was very much impaired, 11 only slightly impaired, 2 not at all impaired, and 1 believed his driving to be improved. Of the 14 RCUs who reported regularly driving after more than 4 units of alcohol, 5 stated that their driving was very much impaired, but 9 believed it to be only slightly impaired. All 3 students who drove under similar circumstances believed their driving to be only slightly impaired.

3.2. Structured interviews

3.2.1. Participant characteristics and drug-use histories

The mean age of participants was 26.0 years (range 20–36 years), and they started smoking cannabis between 14 and 21 years of age (mean age 16.1 years). All used cannabis at least weekly (12 were daily users), and all were regular drinkers of alcohol: mean consumption was 9.3 units during weekdays (range 0–36 units) and 20.6 units at the weekend (range 3–48 units).

3.2.2. Driving practices under the influence of cannabis/alcohol, and impairment beliefs

All of the participants had driven whilst under the influence of cannabis, and all but one continued to do so. Ten (43.5%) reported smoking cannabis at the same time as driving. Overall, 36.4% drove daily after consuming cannabis, 36.4% weekly, 18.2% monthly and 9.1% less often. Thirteen participants (56.5%) reported that they would drive after smoking cannabis in any circumstances. Ten (43.5%) said they would not smoke less cannabis socially if they planned to drive home later; in fact, 56.5% said they would drive after social smoking even if they felt very "high". Most participants (19) considered cannabis to impair their

driving, although all but one thought their driving was only slightly impaired as opposed to very much impaired. Three believed that cannabis did not impair their driving at all, and 1 believed his driving was improved. Attitudes divided two ways: 64% were "not really bothered", or "thought it was not a problem", whereas the remainder said they that they "really shouldn't do it", but that it was not as bad as drink-driving. Fifteen (65.2%) had been involved in a road accident, but only 2 thought cannabis may have contributed.

Fifteen participants (65.2%) reported driving whilst under the influence of alcohol, but in all but one case they would not drive if they drank more than 4 units. All participants believed that alcohol impaired their driving: 19 (82.6%) believed driving was very much impaired, and made statements such as: "You should never do it" and "it's a stupid thing to do". When asked how strongly they felt about this, on a scale of 1 to 5, the average response was 4.4 (S.D.=1.1). There was a significant difference between strengths of attitudes towards driving when "high" on cannabis (mean=2.4; S.D.=1.5) and driving after drinking alcohol above the legal limit [$t(22)=6.17$, $p<0.01$]. Eleven participants (47.8%) reported driving after combining cannabis and alcohol: 5 on at least a weekly basis. Of these 11, only 2 said that they would combine the two drugs and drive in any situation. Participants preferred smoking cannabis before visiting a bar, because they would then drink less alcohol than they would otherwise, and felt that they could drive home.

3.2.3. Self-reported effects of cannabis and alcohol on driving: A comparison

Marked differences between the effects of cannabis and alcohol were reported. Table 3 summarizes the reported similarities and differences between drugs by extracting those items

Table 3
Differences and similarities in self-reported effect of cannabis and alcohol on driving (n=23)

Differences		Similarities
Cannabis	Alcohol	Both drugs
Makes you paranoid and tense	Makes you drive more dangerously	Impair attention
Makes you drive more slowly	Makes you feel too tired to concentrate	Make you more easily distracted
Makes car headlights too dazzling	Makes you overconfident	Slow down your reactions
Makes you more cautious	Makes you more reckless	Affect your attention in general
Makes you more relaxed	Makes you drive faster	Alter your perception of speed
Makes you concentrate more	Impairs judgement at traffic lights	Make you prone to daydreaming
Slows you down so it's safer	Alters your perception of distance	Affect your judgement in general
Makes you drive more carefully	Makes you have less control of the car	
Makes driving more enjoyable	Impairs steering	
Stops you from speeding	Impairs vision	
Makes you pay more attention	Makes you forget where you're going	
Makes you more in tune with the driving task	Makes you take more risks	
Makes you take fewer risks		

For items listed under differences, the separation between the proportions of "yes" and "no" responses exceeded 50% of the sample.

for which the separation between "yes" and "no" responses was greater than 50% of the sample. Participants clearly believed cannabis to have fewer negative effects than alcohol on driving. When asked about the likelihood of road accident involvement after smoking cannabis (compared with being sober), 4 thought it more likely, 3 less likely, and 13 said it would make no difference (3 had no opinion). Clearly, these judgements are consistent with their attitudes described above.

3.2.4. The impact of drug-driving deterrents

Twenty participants thought that they were less likely to be stopped by police for drug-driving than for drink-driving. Fifteen (65.2%) reported that they would be deterred from driving after smoking cannabis if there was random roadside testing, but only 7 (30.4%) said that they would be deterred by "a good TV advertising campaign highlighting the dangers of driving after smoking cannabis".

3.3. Driving under the influence of cannabis and/or alcohol: Stops by police

More RCUs (47.0%) than students (22.5%) had been stopped for either drink- or drug-driving. The proportion of RCUs stopped while specifically under the influence of cannabis was surprisingly high (26.2%), although none had been charged (but 4 had been charged with drink-driving). A high proportion of the interviewees had also been stopped (73.9%). Again, none had been charged, and none had been deterred. By comparison, 1 of the 4 students stopped while driving under the influence of cannabis had been charged for drug-driving; none had been charged with drink-driving. From their experiences, more respondents were deterred from drink-driving than from drug-driving.

4. Discussion

Perhaps the most important questionnaire finding was that the prevalence of driving under the influence of cannabis is disturbingly high, not only among the RCUs who were drivers (82%), but also among less experienced student users (40%). The willingness of so many respondents to drive after cannabis is consistent with the finding that a majority of each sample considered their driving to be (at most) only slightly impaired by cannabis. Although the sample of regular users was largely self-selecting and regionally specific, the fact that the interviewees (all from Berkshire, recruited ostensibly for different purposes) *all* reported driving whilst intoxicated suggests that the results from the questionnaire study were not overestimates. The interviewees' greater readiness to drive after cannabis may reflect their group composition, being exclusively young males. In fact, a majority would drive even if they felt very "high", and approximately half of the sample would smoke cannabis while actually driving. Because the effects of cannabis are experienced almost immediately, they would then undoubtedly be intoxicated at the time of driving. These accounts are important because, as is often pointed out, no studies to date have ascertained whether cannabis users actually drive during the period of intoxication (Ward & Dye, 1999). Clearly, they do.

In the questionnaire study, most respondents believed that cannabis only slightly impaired their driving, and a few rated their driving as being either unaffected or improved. Although a greater proportion of RCUs than students had driven after consuming large amounts of alcohol (and alcohol in combination with cannabis), attitudes towards drink-driving were similar between groups: majorities believed that drinking more than 4 units of alcohol impaired driving performance. Comparing the effects of cannabis and alcohol on driving, Table 3 clearly shows that the two drugs are perceived to have many different effects, with cannabis rated as much more benign.

The consistently high incidence of stops by the police might suggest that cannabis produces effects on driving that are clearly detectable by trained observers. This would be consistent with experimental studies conducted that observe actual driving (e.g., Robbe, 1994). However, we cannot dismiss the possibility that RCUs are generally worse drivers than people who do not use cannabis regularly. In all cases, police stops had not deterred them, compared with stops whilst under the influence of alcohol. Most likely, this indifference to being stopped after consuming cannabis reflects the inadequacy of roadside drug testing. Indeed, just over half of the interviewees said that they would be deterred if there were effective roadside drug testing. However, they stressed that they would not be deterred by television campaigns highlighting the dangers of driving under the influence of cannabis, as they felt sure that they could compensate for its detrimental effects.

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