FATIGUE AND BEYOND: PATTERNS OF, AND MOTIVATIONS FOR, ILLICIT DRUG USE AMONG LONG HAUL TRUCK DRIVERS

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ABSTRACT

Objectives. The present study aimed to investigate the illicit drug use patterns of long distance truck drivers. This population are considered to be a special interest group in terms of drug driving research and policy due to high rates of use, involvement of drugs in truck accidents and the link between drug use and work related fatigue.

Method. Qualitative interview data was collected from 35 long haul truck drivers in South East Queensland and analysed through grounded theory techniques. Interviews were conducted at truck stops and loading facilities in both metropolitan and regional cites throughout Queensland.

Results. High rates of licit and illicit drug use (particularly amphetamines) were reported by the majority of the sample. However, unlike previous studies which focus on fatigue, this research found overlapping and changing motivations for drug use during individual lifetimes. Becker's model of a drug use 'career' was utilised to reveal that some drivers begin illicit drug use before they commence truck driving. As well as fatigue, powerful motives such as peer pressure, wanting to fit the trucking 'image', socialisation, relaxation and addiction were also reported as contributing factors to self-reported drug driving.

Conclusions. The results indicate that these additional social factors may need to be considered and incorporated with fatigue factors when developing effective drug prevention or cessation policies for truck drivers.

KEY WORDS

Amphetamines, Drug use career, Fatigue, Illicit drug use, Truck drivers.

INTRODUCTION

Truck Driving and Drug Use

In recent times, the road safety problem of driving after consuming illicit drugs has attracted increasing research attention (del Rio, Gomez, Sancho & Alvarez, 2002; Drummer et al., 2003). However, firm figures regarding the percentage of motorists who drive after using illicit drugs have yet to be determined. Research that has focused on general motorists fatally injured in crashes suggests that drugs are detected in body fluid samples of 8.8 to 26.7 percent of these drivers (del Rio et al., 2002; Drummer et al., 2003; Gjerde, Beylich & Morland, 1993; Seymour & Oliver, 1999; Swann, Boorman & Papafotiou, 2004). Conversely, drugs have been detected in between 2.7 to 41.3 percent of non-fatally injured drivers in traffic crashes (Athanaselis et al., 1999; Longo, Hunter, Lokan, White & White, 2000; Soderstrom, Dischinger, Kerns & Trifillis, 1995). Research has indicated that the most common illicit drugs detected tend to be cannabis, opiates and stimulants, although cocaine has also been identified within some samples.

In regards to self-reported data, considerable variation has been evident within the literature. For example, a number of Australian and Canadian studies utilising surveys have indicated between 2 and 90 percent of respondents engage in drug driving behaviours, although it is noted that such data is largely dependent on whether the sample responded generally or with reference to a specific drug (Adlaf, Mann & Paglia, 2003; Beirness et al., 2003; Boase, Jonah, Mann, Brands, Macdonald & Stoduto, 2004; Davey & French, 2002; Lenne, Fry, Dietze & Rumbold, 2001; Lenton & Davidson, 1999). A more recent study of Queensland drivers indicated that the prevalence of drug driving was in fact greater than drink driving (Davey, Leal & Freeman, in press).

But for truck drivers, there is much less known about the prevalence and types of drugs combined with driving. Despite this, there is a small but growing body of literature that is indicating high rates of both illicit and licit substance use among long haul truck drivers in Australia and overseas (Davey & Richards, 2004; Hartley et al., 1997; Mabbott & Hartley, 1999; Swann, 2002; Victoria Police State Highway Task Force, 1995). While gaining an accurate representations of the prevalence of drug driving among truck drivers has proven notoriously difficult due to their lack of interest or wariness in participating in research (including self-report bias), anecdotal evidence has suggested that trends in stimulus use have changed over recent decades. For example, prescription stimulants such as ephedrine and Duromine were once more commonly used for their anti-fatigue properties (Davey & Richards, 2004; VPSHTF, 1995; Wardlaw, 1993, cited in Topp et al., 2001), however stringent controls were placed on the sale of these drugs in the late 80's following two

truck and bus accidents in New South Wales in 1989. As a consequence of pharmaceutical restrictions, and with fatigue still a serious issue for truck drivers, trends towards illicit amphetamine consumption occurred.

Despite truck drivers' general unwillingness to participate in research projects that focus on their drug consumption and driving behaviours, some preliminary research has indicated that stimulant use is central to combat fatigue. For example, Williamson et al. (1992) reported that 31% of a trucking sample indicated they used stimulants to reduce fatigue. Similarly, Mabbott & Hartley (1999) collected data from 236 truck drivers and reported that 27% used stimulant drugs, 6.8% had used over the counter pharmaceuticals stimulants, 11.9% used either one prescription or one illicit stimulant and 8.9% reported using both prescription and illicit stimulants. However, Davey & Richards reported illicit drug consumption as much higher among a sample of truck drivers, as 57% self reported illegal amphetamine experience and 74% had used stimulant pharmaceuticals in the past. Finally, in regards to oral fluid analysis, Starmer et al. (1994) examined saliva samples of 210 drivers and found 29% tested positive to stimulants.

Importantly, drug driving among truck drivers has been strongly linked to accident culpability. For example, Drummer and colleagues found that within a sample of 139 deceased truck drivers, 23% tested positive to stimulants, compared to 4.1% of other deceased drivers. For crash risk, there was also a particularly strong association between stimulant use and culpability, with their accident risk estimated as high as a driver with a blood alcohol content of 0.1 to 0.15 percent (Drummer, Gerostamoulos, Batziris, Chu, Capelhorn, Robertson & Swann 2003).

Drug Driving Countermeasures

In general, the emerging problem of drug driving has resulted in a number of countermeasures being developed and implemented to combat the offending behaviour. These countermeasures generally consist of one of four elements which are: prevention, detection, action and research (Drummer, 2005). Firstly, while drug driving legislation (e.g., prevention) is relatively new within Australia and has yet to lead to high levels of enforcement or prosecution, *driving-hours restrictions* has the potential to minimise fatigue (if vigorously enforced). Similarly, researchers have reported that a company's promotion of a strong safety culture (eg. management commitment to safety, driver opportunities for safety input and driver safety training) can also have a positive impact on safety (Arboleda, Morrow, Crum & Shelley, 2003; Baas, Charlton & Bastin, 2000). However, education-based fatigue programs have been received with less enthusiasm as people tend to make inaccurate estimates of their level of ability and awareness, and such fatigue-based

decisions may be overpowered by strong incentives to continue driving (Haworth, 1998). While not directly a drug driving countermeasure, driving-hours restriction legislation and associated programs (e.g., Transitional Fatigue Management Scheme & Full Fatigue Management Scheme) also have the potential to create behavioural change, but preliminary evaluations have been inconclusive (Burgess-Limerick & Bowen-Rotsaert, 2002; Hartley et al., 1997; Mahon and Cross, 2000). In addition, it must also be noted that regulated driving hours are difficult to enforce as dishonest log book keeping is likely to be prevalent (Keogh, 2002; Todero & Moore, 2000). Furthermore, such driving restrictions have generally not been widely accepted by the trucking community.

Secondly, in regards to detection, accurate and wide spread detection of truck drivers who have consumed illicit drugs remains difficult to achieve, although more recent technological advances in drug saliva testing has the potential to significantly increase detection rates if widely incorporated within apprehension-based countermeasures. Some states are beginning to implement random roadside testing programs for illicit amphetamines and cannabis (Queensland & Victoria), although such initiatives are still relatively new and results have yet to be formally published. Despite this, earlier evaluations indicate that such drug testing practices may identify a greater number of DUI offenders than traditional drink driving mechanisms e.g., random breath testing (Davey et al., in press). Similarly, pre-employment and random employee drug testing is sporadically utilised, and currently there is little published results regarding the effectiveness of such techniques within Australia. However in the U.S., carriers are required to administer random tests to 50% of their drivers unless the overall usage rate drops below 1% (Abt, 2002). But preliminary feedback from American trucking organisations about mandatory testing by companies is somewhat negative, as they claim testing is highly expensive for companies to administer and results are relatively insignificant, except where suspicion of impairment is present prior to testing (non-random) (Abt, 2002).

Finally, in regards to research, there is a growing level of interest in the consequences of consuming illicit substances and then driving. However, there has been less research into the antecedents of drug driving, specifically the reasons for drug use among truck drivers. The predominant assumption within both the literature and area is that illicit drug use and fatigue reduction are closely linked (Davey & Richards, 2004; Drummer, 1995; Mabbott & Hartley, 1999; Swann, 2002). For example, Swann (2002, p.65) stated “Truck drivers use stimulants for occupational reasons and this behaviour is relatively easily changed compared to addictive or recreational drug driving use”. Indeed little (if any) research on the matter indicates that truck drivers use drugs for any other purpose than to stay awake whilst driving for long periods. Knowledge from

the field and research discipline of substance use has yet to be transposed into the area of drug use by long haul truck drivers, despite drug driving remaining one of the most significant issues associated with long haul driving safety.

A central tenet of this paper is that drug use within this driving population does not happen in isolation from issues of use, misuse and dependence that occur within the general domain of substance use. Therefore it remains possible that some truck drivers will have characteristics of substance users in general as well as substance users in other work environments. In addition, it has been hypothesised that many of the biological, psychological and social correlates and risk factors for drug use can be found within such a driving cohort (see Allsop, Phillips & Calogero, 2001). Importantly, Nicholas and Allsop (1996) suggested that drug use in a workplace may be dependent upon the employment of people who are already at high risk for this behaviour. If this is the case, preventing or stopping drug use by truck drivers may not be as simple as altering work conditions, but addressing the underlying causes of drug use.

In summary, the small amount of previous research in this area generally concludes that drug use by truck drivers is a behaviour born of necessity to fight job related fatigue. However, it was thought likely that a thorough behavioural investigation would find patterns of recreational and dependent use due to the social, psychological, biological and work-related risk factors which may exist independently of, or be interrelated to, the justification of use due to fatigue. As a result, the present research focuses on the:

a) Prevalence and type of drug use among a sample of long haul drug drivers
b) Reasons for drug use; and
c) Perceptions of effective solutions to reduce drug use

METHOD

Participants, Materials & Procedure

Thirty five male interstate truck drivers were interviewed and paid a $25 incentive to participate in the research proposal. The mean age was 40 years and the mean duration of truck driving career was 18.69 years (range 3 to 40 years). Most drivers were residents of Queensland (*n*=31), although two lived in Victoria, one in New South Wales and one reported having no fixed address. All respondents were currently employed as interstate (long haul) drivers, with the exception of one, who drove interstate for 20 years, retired three years ago and currently owns a small trucking company. The mean duration of interstate (long haul) driving career was 17.71 years. Eight drivers had discrepancies between years spent truck diving and

years spent long haul driving, indicating most start long haul and continue with it. In addition, 8 of the 34 respondents currently employed as drivers did not usually drive regulation hours. Of these, four typically worked over 100 hours per week.

Participants were recruited through advertising in truck stops, approaching drivers in truck stops and snowballing (e.g., participants were asked to refer the researcher to their peers). Interviews were undertaken in both urban metro areas and regional centres across Queensland at truck stops and loading facilities. Interviews were approximately 2 hours in duration and included structured, semi-structured and open-ended items which provided both quantitative and qualitative information. The interviews were flexible which facilitated the identification and exploration of themes as they arose. Along with driving history and drug use information, the interviewers collected detailed information about drug driving behaviour and the characteristics of their drug use based on descriptions of actual scenarios. Current drug use was not a selection criteria as those who did not use drugs were asked to comment about their past use and/or others use.

Interviews were structured according to Becker's theory of a 'career path' in drug use. This theory is used in the research to identify the complex, and often overlapping reasons for substance use and continued use for the duration of an individual's 'drug use career'. Drivers described their initiation, experiences as a beginner and motivations for continued use over time. The issues of supply and secrecy were also investigated in detail. Importantly, Becker's theory is structured around the concept of what the author called 'Outsiders' which in short is a deviant group that is somewhat removed from mainstream society - and the drug using truck drivers interviewed in this current research conveyed this concept regarding their own lives.

Techniques from Grounded Theory were utilised and thus the study incorporated an open-ended inquiry method to generate linkages and identify patterns among key variables and outcomes such as types of drugs and the reasons for drug usage. An open coding technique was implemented to facilitate the development of themes and a coding manual that was employed to analyse the text.

RESULTS

Drug use and Type

Firstly, a high level of self-reported licit and illicit drug use experience was identified. Obtaining drugs was universally reported as easy, both at the time of opportunistic initiation and during the drug use career, as an ever increasing number of contacts were formed within the subculture. Illicit drugs were

generally obtained from others within the industry. In total, 20 of the 35 respondents reported using illicit drugs at work. Of this group, 14 stated they currently use and six were past users of illicit substances (see table 1). Substances used were mainly stimulant types. Amphetamine (speed) was most common (20 had ever used this, 9 currently used). Nine drivers claimed to have used pharmaceutical stimulants obtained illegally (ephedrine, Duromine, 'Briquettes' and/or 'Shakers') and three were current users. Six drivers had at some stage used marijuana while working and four were current users. Also three currently used cocaine. Conversely, of the 15 drivers that stated they had never used illicit substances, four had used these stimulants prior to the government restricting availability. In addition, anecdotal evidence from the sample suggests that use of these products was not viewed as illegal before this time.

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Reasons for Usage

Secondly, reasons for drug use were explored in depth - both as self report and peer report data. It was found that drug use among truck drivers is likely to be a fatigue countermeasure, as well as being a behaviour that incorporates several other motivating factors. Firstly, all but four drivers agreed that fatigue was a reason that truck drivers consume drugs and then drive. Work related fatigue was strongly linked with both peer report and self report stimulant drug use among this sample. This was an expected finding, particularly due to consistent reporting of this issue in previous studies on truck drivers' drug taking. However, this opinion was less likely to be held by past users and less likely to be held by those that had never used such substances. This theme is represented in the following comments.

Fatigue Reduction	*"…rather than pull up and have six hours sleep…just take a pill…I'm not saying it's the right thing to do, but it's better than chewing on a gum tree"*
	"The job situation must be taken into account…drivers have to work long hours because the rates are too low for them to make a living. The exploitation of subcontractors is rife"

However, of 35 drivers sampled, only seven reported that drug use was solely a fatigue countermeasure. All but one of the 14 current users believed other strong motivational factors (as well as fatigue) exist. For example, eighteen drivers cited socialisation as an important motivation for drug use (7 of the 15 non users, two of the six past users and nine of the 14 current users). Similarly, ten believed fitting the trucking image was important (five of these were current users) and ten cited relaxation/to feel good. Furthermore, eight drivers stated addiction was a powerful motivation for truck drivers' illicit substance use. Interestingly, five of these were non users and only two current users. This is arguably the most salient finding of the current study as the research indicates that truck drivers also consume illicit drugs for reasons other than fatigue. Some of these varying themes are represented in the following examples.

Additional reasons

"most of the time you need something to kill that tiredness. It's very boring too, you see, so that adds to the tiredness. Having said that, you can't claim that every time a driver takes drugs it's because he is tired"

"I smoke pot because it relaxes me and helps me wind down after a trip"

"Sometimes just because I feel like it….I can't deny I like it. It makes you feel good"

"You've got to remember that truck drivers are a pretty rough bunch of blokes and are the type of people that would probably use drugs anyway even if they were doing another job. There's a fair bit of peer pressure too, especially for the younger blokes to use"

"The best place to hide your feelings is in a bag of drugs, that's why I used".

"They'll tell you it is to stay awake and they have no option, but for a lot of them it's a social thing to do and I don't think even they could

really work out in their heads whether they need it or they just want it."

The current research found evidence to support a particularly interesting finding in the literature where a risk factor for drug use in the workplace is employment of individuals who are already using drugs. Such individuals may enter a particular industry finding their drug use behaviour may be accepted, overlooked or encouraged. For example:

Pre-trucking Drug Use *"Just did it with a group of mates. Only used recreationally then, but when I started driving trucks I used more often"*

"Well the young blokes that come in to the industry are already using or else they pick it up within the first week."

"Also there is just more drugs around these days, and if they take drugs before they start in the industry, or on their free time, it's easy to let the habit slip into your work life."

Another key theme was that of drug addition. Over one third of all drivers interviewed reported that they were addicted or had been addicted to drugs in the past. Drug addiction is arguably a powerful motivation for repeated drug use. Based on the data, nearly all of the past and current drug users in the current study would have, at some stage, exhibited amphetamine dependence syndrome. This observation is based on the self-reported frequency of use (e.g. time spent driving whilst on drugs, duration of drug use career and usage rates outside of work) and self reported dependence status. Drug addiction (and specifically amphetamine addiction) is extremely difficult to overcome. Some of these examples are presented below.

Addiction *"You get to a stage where you can't tell if you're taking it for necessity or just because you like it or your body craves it. It's easiest and least stressful to just tell yourself you need it to do the miles"*

"Started off I needed it to do my job, then I was just an addict"

"Firstly, a lot of the younger blokes would use speed just for recreation and a lot of them find that after a while they can't get off it, they're hooked."

Drug Driving Interventions

The final aim of the research project was to identify perceptions regarding the effectiveness of drug driving countermeasures. In general, opinions given of current measures implemented to tackle the problem of drug use in the road transport industry were generally negative in terms of appropriateness and effectiveness. Nearly half of the sample stated there was not much, or nothing, being done at a company or government level - and very few (e.g., *n* = 11) thought current measures such as driving hours reforms and drug testing were at least somewhat effective. Generally, drivers thought that roadside testing was too easily avoided by drug users and driving hours reforms were inappropriate and misguided. Some of these examples are presented below.

Ineffectiveness

"They're (roadside testing*) not really effective because they might catch the first couple if they're lucky, but it just means everyone else will pull up down the road and wait for them to go away. Prohibition never works…you can't legislate something out of existence"*

"Stopping them driving long hours doesn't stop them using drugs if they're not necessarily using drugs to stay awake, if they're just using them for fun"

Respondents were asked what, if anything, should be done to address the problem of drugs in the road transport industry. Some gave multiple suggestions. Thirteen called for the reintroduction of legal stimulants. In addition, twelve drivers reported various legislative changes they thought would impact on the level of drug use in the industry. These were generally suggestions of further changes to driving hours and a greater emphasis on accountability by others in the supply chain. Twelve drivers said a greater detection/prosecution effort should be employed to tackle the problem. Interestingly, six drivers suggested there should be social

services available to truck drivers to help them deal with drug addiction. Again, these replies emphasise the problem of drug use beyond that as a fatigue countermeasure.

Legal Alternatives	*"Simple: Provide us with a safe, legal alternative. It is the only way to cut down on speed in the industry. Having said that, you'd still get a percentage that use because they like the speed or they're addicted to it, but I reckon it would cut out a huge percentage and the drug dealers would go broke"*
Treatment	*"They do all this to try and catch you, but there's no help for drivers that can't stop using"*
	"They should have people in the industry there to help you, like a phone number you can ring for a start. You're pretty much on your own if you want to stop using, and a lot of blokes can't"

DISCUSSION

The present research aimed to identify the current self-reported behaviours and perceptions towards drug driving among a sample of long haul truck drivers. More specifically, the study aimed to examine the prevalence and reasons for drug use, as well as perceptions regarding effective solutions to reduce such usage.

Firstly, a high level of self-reported licit and illicit drug use experience was identified among the sample. Obtaining drugs was universally reported as easy, both at the time of opportunistic initiation and during the drug use career, as an ever increasing number of contacts were formed within the subculture. Similar to previous research (Mabbott & Hartley, 1999), illicit drugs were generally obtained from others within the industry. It appears that the availability of stimulant drugs is (and always has been) consistently sufficient within this cohort as to provide no significant restrictions on individual drug taking. The ease of obtaining illicit substances was also reflected in the wide variety of drugs reportedly consumed by the sample. These drugs included: amphetamine (e.g., speed), pharmaceutical stimulants obtained illegally (e.g., ephedrine, Duromine, "Briquettes" and/or "Shakers"), cocaine and marijuana.

The second aim of the study was to identify the reasons for drug use. The current research found overwhelming justification for personal illicit drug taking by current users. One of the primary reasons was stated to be the necessity to counteract fatigue, which is consistent with previous research (Davey & Richards, 2004; Drummer, 1995; Swann, 2002). The results also appear consistent with Mabbott and Hartley's (1999) findings that indicated truck drivers often provide a moral rationalisation for drug taking, such as fatigue-reduction. However, it is noteworthy that this opinion was less likely to be held by past users and even less likely to be held by those that had never used such substances.

The qualitative interviews also facilitated an in depth exploration of the drug use careers of these drivers and exposed the existence of different or co-existing motivations for drug use during individual lifetimes. As well as fatigue, these motives included social and peer acceptance, relaxation and to feel good, fitting the 'trucking image' and use motivated by addiction. As highlighted above, previous research has described drug use by truck drivers as a behaviour borne of the need to fight fatigue and has implied that reducing or eliminating work-related fatigue is the primary preventative approach that must be taken to impact on drug use (eg. Swann, 2002). However, the identification of additional drug motives suggests that other forces may influence this sample's drug use behaviour. Of concern, was that a considerable proportion of the sample was rather pessimistic about the effectiveness of current drug driving countermeasures. As evidence by previous research, the task of separating drug use from driving remains a complex problem. Despite this, the identification and implementation of appropriate multi-modal interventions (e.g., prevention & education) that consider the competing motives for drug use among this population has clear road safety benefits.

Limitations

Some methodological limitations associated with the program of research should be borne in mind when interpreting the findings. For example, it is noted that this research consisted of a small sample (35 respondents) and therefore there is no claim of statistical significance of these findings, nor can binding assumptions be drawn regarding the relevance of these drug use rates to the wider, truck driving population. Despite this, the sample size is one of the largest study's to incorporate a review of drug driving reasons within the research aims, and thus it has the potential to add to the developing body of literature on the topic of illicit drug use by truck drivers, furthering some interesting novel findings which may be more thoroughly investigated in larger, future studies.

CONCLUSION

Taken together, the study's findings are consistent with previous research in its exposure of the significant problem of illicit drug use in the road transport industry and indeed the existence of a drug using subculture fitting of Becker's (1963) description of "Outsiders". Importantly, drug use is common and may prove to be disproportionate among this cohort compared to the wider community. This research also supports previous findings in terms of prevalent drug types, having found the most common substance of abuse is illicit amphetamines.

The most salient implication of this exploratory research is that when addressing this problem, it must be considered that the implementation of anti-fatigue measures alone are likely to have a reduced effect on truck drivers that are using illicit drugs because of other social, psychological and physical motives. Furthermore, there is likely to be a considerable number of drivers using because of these reasons and particularly a growing number continuing to use because of the nature of addiction. Just as reasons for drug use are complex, multiple, and interrelated, so too are the needed strategies behind successful interventions. In regards to addiction, further research appears necessary to determine the prevalence of drug addiction within the trucking industry as well as the identification of appropriate treatment programs for drivers who recognise they require assistance to break the drug and driving sequence. However, it is readily accepted that prevention is often better than cure, and thus the sustained implementation of drug driving countermeasures that utilise aspects of both education and detection can only serve to combat this complex problem.

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Table 1. *Self reported usage rates of illicit drug types*

Illicit drug type	Number of respondents ever used	Number of respondents currently use
Any	23	14
Amphetamine (speed)	20	9
Ephedrine, Duromine, Briquettes or Shakers	9	3
Cocaine	3	3
Marijuana	6	4
“Unknown party things”	1	1
Benzedrine	1	--