

THE IMPACT OF ALCOHOL IGNITION INTERLOCKS ON A GROUP OF RECIDIVIST DRINK DRIVERS

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Abstract

A trial of court mandated alcohol ignition interlocks is currently being implemented in South-East Queensland. The study aims to determine whether the device in combination with a drink driving rehabilitation program is more effective than the rehabilitation program alone in reducing drink driving recidivism. This paper focuses on participants' self-reported perceptions and experiences of using interlocks. Data was collected through structured interviews with participants on five occasions while they were on the trial. Initial findings regarding the impact of interlocks on convicted offenders' drinking, driving and drink driving behaviour(s) will be reported. The reliability of the self-report data will be reviewed in comparison to the downloaded interlock recordings, and the group's perceptions regarding the purpose and effectiveness of interlocks as a sentencing option are examined. Although a very small sample size of nine participants makes firm conclusions difficult, early results indicate successful interlock operation to be associated with both a willingness and ability to be able to reduce drinking levels. A major limitation of the study has been the small number of offenders recruited to the trial through the courts.

Introduction

While there have been considerable reductions in the prevalence of drink driving on public roads over the past 15 years, 20-30% of convicted drink drivers continue to re-offend despite incurring legal sanctions (Buchanan, 1995; Hedlund & Fell, 1995; Wiliszowski et al., 1996). As a result, there is currently a wide variety of countermeasures being implemented to reduce the prevalence of repeat offending, including; fines, license disqualification periods, vehicle sanctions, offender confinement, special licence tags, publishing offenders' names, rehabilitation and intervention programs. One vehicle-based sanction that is producing promising results is alcohol ignition interlocks. This electronic device is connected to the ignition and power system of a vehicle and measures an individual's blood alcohol content. Interlocks are designed to prevent the vehicle being started if the driver's blood alcohol concentration exceeds the legal limit.

Since the 1980's there have been a number of interlock trials in North America and early evaluations suggest that the device significantly reduces recidivism by up to 90% whilst the device is installed to offenders' vehicles (Beck et al., 1997; Morse & Elliot, 1992; Popkin et al., 1992; Weinrath, 1997). However, this reduction in drink driving behaviour appears to be lost upon interlock removal as re-offence rates are comparable between interlock and non-interlock participants (Beck et al, 1997; Morse & Elliott, Pokin et al, 1992; Tippetts & Voas, 1998; Voas, Marques, Tippetts & Beirness, 1999). That is, the majority of interlock trials report that a high number of interlock users re-offend once the device is removed from their vehicles (Popkin et al., 1992; Voas, et al., 1999). Overall, the research suggests that interlocks are effective in incapacitating or restricting individuals from drink driving whilst installed to the vehicle, but the device appears to provide few long-term benefits (Weinrath, 1997).

At present it remains unclear why offenders continue to drink and drive once the device is removed from vehicles, nor what (if any) beneficial effects are derived from interlock usage. Very little research has examined the impact of interlocks on offenders' drinking, driving and drink driving behaviour as well as their motivation and self-efficacy levels to change and/or control their drinking and drink driving. It is unclear what psychological and behavioural changes occur whilst the device is installed (e.g. attitudes & driving habits), or what purpose offenders believe interlocks serve (e.g., rehabilitation vs incapacitation). The aim of the present study is to examine the self-reported impact of interlocks on key program outcomes (e.g., levels of drinking, drink driving and unlicensed driving) and compare such data to downloaded interlock recordings.

Queensland Interlock Trial

The first trial of court mandated alcohol ignition interlocks is currently being implemented in South-East Queensland. Given the limited long-term behavioural change demonstrated from using interlocks in isolation, the current trial is combining a drink driving rehabilitation program with interlocks in order to enhance the possibility of change. The trial involves participants completing a licence disqualification period and an 11-week education-based drink driving program called "Under the Limit" (UTL), before installing an interlock for a designated time stipulated by the courts. The interlocks are manufactured, installed and serviced by the Drager Australia Pty, Ltd. The probation order requires participants to have a BAC of 0.00% when they operate their vehicle. Participants remain on a probation order until the completion of the program(s), with the downloaded interlock recordings regularly reviewed by their probation officers. A comparison group is also incorporated within the larger research program that involves participants only completing the drink driving rehabilitation program, but this paper focuses on the experiences of participants on the interlock order.

Method

Participants

At the time of writing this paper, 30 participants were on the interlock probation order, however nine had installed and used the device. Of the remaining 21 participants, eight have completed the UTL program and are awaiting the end of their licence disqualification period before installing an interlock. Another four have recently received the interlock order and have not started the UTL program and the remaining nine have been taken back to court and had their order amended or revoked. All participants who were using the device were male repeat offenders (mean number of offences = 3), with the average age of the participants being 38. Five of the nine participants were employed, all in blue-collar occupations. Licence disqualification periods ranged from three to twelve months (mean = 7), and interlock installation orders varied from 5 months to two years (mean = 10.5 months). However at the time of writing this paper, participants had been using the interlocks between three and eight months (mean = four).

Materials

A combination of scales were used in the study including: (a) Alcohol Use Disorders Identification Test (AUDIT: Sanders, Aasland, Babor, de la Fuente & Grant, 1993), (b) Drinking/Driving Efficacy Scale (DDE: Wells-Parker et al., 1997), (c) The Stages of Change for Drinking Scale (SCD [precontemplation, contemplation and action]: Rollnick et al., 1992), and (d) Stages of Change for Drink Driving Scale (DRDV [precontemplation, contemplation & action]; Wells-Parker et al., 1998). An additional interlock questionnaire was developed to investigate participants' previous and present drinking and drink driving behaviours, their expectations and experiences of completing the UTL program and using interlocks, and attitudes regarding the effectiveness and purpose of interlocks as a sentencing option.

Procedure

Data was collected through structured interviews using combinations of the above scales on five separate occasions at participants' Community Corrections office after they had met with their probation officer. Only the researcher and the participant were present during the interviews. These interviews were performed both before and after completing the UTL program (AUDIT, DDE, SCD & DRDV), upon interlock installation, then one month and three months after interlock installation (interlock questionnaire). The interlock data logger recordings (which records all attempts to start the vehicle and the corresponding BAC level) were downloaded and obtained after participants had the interlock serviced.

Results

Sentencing Process

Before starting the UTL program (first interview), all nine participants reported that they perceived the interlock order to be fair (e.g., licence loss, UTL program and interlocks), although severe, as licence loss results in a considerable impact upon their lives. In regards to motivation to accept the interlock order, two believed they were forced by the magistrate whilst seven were hoping to avoid a larger sanction, however only two of these seven felt they needed help avoiding drink driving. One participant intended to drink and drive again in the future, and one other reported driving unlicensed during the disqualification period.

The UTL and Licence Disqualification Component

Both before and after completing the UTL program, the nine participants were assessed to have harmful alcohol consumption levels, although two were actively trying to reduce their drinking behaviours. Conversely, the majority did not believe they needed to change their drinking behaviours and were classified in the precontemplation stage of change (Rollnick et al., 1992) at pre and post program assessment. In contrast, all participants reported actively trying to avoid drink driving and reported high self-efficacy levels to control both their drinking and drink driving behaviour. This is consistent with previous research that has demonstrated drink driving offenders are more willing to change their driving rather than their drinking behaviours (Wells-Parker et al., 1998; Wells-Parker et al., 2000). Despite the limited change in their drinking levels, eight of the nine participants reported the program provided them with new knowledge, skills and strategies that would reduce the likelihood of them re-offending.

Expectations and Perceptions of Interlocks

Before installing the interlock (third interview), eight of the nine participants expected to be able to successfully operate the interlock, although most believed the interlock would become a hassle to operate. Interestingly, the majority of participants considered the purpose of interlocks to be a teaching guide, designed to help them avoid drink driving again, rather than a tool for incapacitation or restriction. Participants did not perceive interlocks to be a punishment before they used the device, however once installed and operated, more than half the sample (7) considered interlock usage to incorporate aspects of both punishment and deterrence.

Self-Reported Impact of Interlocks

After the first three months, half the sample (5) reported reducing their drinking levels, as they were concerned about not being able to operate their vehicle e.g., being over the BAC limit. In addition, five participants reported driving less, due to difficulties providing adequate breath samples that were registered by the device. This was confirmed by the downloaded interlock recordings that indicated participants provided incorrect breath samples on average 4.8 times per driving day. An incorrect breath sample is defined as a breath sample that could not be “tested” by the interlock due to an incorrect technique e.g., breath specimen too short or weak. In fact, six individuals reported that the device recorded “false positives” on at least one occasion, as they recalled being unable to start their vehicle when they had not been recently drinking. However on most of these occasions, participants admitted to drinking alcohol earlier in the day, which suggests a lack of recognition regarding safe drinking levels and the appropriate amount of time needed for alcohol to be absorbed in the body.

Despite these operational difficulties, the majority of participants reported benefiting from installing the device, as the interlock not only ensured that they did not drink and drive and provided feedback regarding the BAC levels, but also reduced their licence disqualification period. None of the participants believed that the interlock had an impact on their lifestyles, and eight of the nine offenders reported that the device was a more effective sentencing option than longer licence disqualification periods and larger fines e.g., less likely to drink and drive whilst installed. Participants indicated that they did not drive another vehicle that was not fitted with an interlock, which would have been deemed to be “unlicensed-driving” within the parameters of the current study. And compared to traditional sanctions, most believed the interlock option reduced the likelihood that they would drive unlicensed.

Downloaded Interlock Data

The downloaded interlock data indicated that the vehicles were used almost 80% of the days, with 4.7 engine starts each day, and on average 7 BAC tests were performed which included rolling re-tests. This is comparable with an earlier study by Marques et al (1999) who examined the driving behaviours of 1309 drink driving offenders (75% first time offenders) in the Alberta interlock trial and also reported frequent interlock usage (see table 1). However, in contrast to the findings of Marques et al. who reported a 20% decrease in driving behaviours during the period when the interlock was installed, participants increased their vehicle usage by 10% over the three month period.

As highlighted above, participants’ self-reported difficulties operating the device were confirmed as the downloaded data indicated approximately five (4.8) incorrect breath samples per day over the first three month period. However a considerable discrepancy exists between participants’ self-reported data that describes sustained efforts to avoid drink driving and the interlock data that indicates five of the nine participants recorded breath-test failures (e.g., providing a positive BAC sample). There were 37 initial breath-test failures at the time of writing this report, and participants had been operating

interlocks between one and seven months (total cumulative usage = 34 months). The average BAC reading for breath-tests failures was 0.027%, ranging from 0.016% to 0.099%. There was no relationship between length of interlock usage and number of failures. In contrast to Marques et al. (1999) who reported that failures were highest on Saturday and Sunday nights, a more even distribution was evident for the current study indicating participants consumed alcohol on most days (e.g., Monday = 22%, Tuesday = 0%, Wednesday = 9%, Thursday = 26%, Friday = 25%, Saturday = 6% and Sunday = 12%). Furthermore, 38% (12) of the failures were recorded during the day and 62 % (19) recorded at night. Participants failed to provide a rolling re-test on 15 occasions, which subsequently resulted in the device needing to be recalibrated within five days at a cost of \$ 71.50 paid by the participant.

Table 1: Interlock Recordings

Study	Present Study (N=9)	Marques (1999) (N=1309)
Vehicle Usage:	78% (of days)	80% (of days)
Engine Starts:	4.7 (per day)	6.5 (per day)
Rolling Re-tests:	2.4 (per day)	6.3 (per day)
Usage over time:	10% increase	20% reduction
Incorrect Samples:	4.8 (per day)	Not reported
No Re-test	8	7

Successful and Unsuccessful Interlock Usage

Examination of the interlock recordings such as the pattern of breath test failures revealed a possible division within the group regarding participants' ability to successfully operate the interlock. Whilst recognising the very small sample size, participants were tentatively divided into two groups (successful vs unsuccessful interlock usage) that was dependent upon being able to avoid breath-test failures on a weekly basis. This equates to not being "locked-out" of their vehicle regularly (e.g., attempting to drink and drive). Six participants successfully operated the interlock and avoided registering weekly failures (0.25) offences per week (e.g. one a month) while a second group of three participants were frequently unable to start their vehicle, providing failures every 3, 5 or 7 days (1.8 offences per week). Furthermore unsuccessful participants recorded the highest number of incorrect breath samples per driving day (8.2) compared to the successful group (2.25).

Interestingly, the successful group appeared to decrease the number of failures over a period of three months which is consistent with the Alberta interlock trial (Marques et al., 1999), while the frequency of failures for the unsuccessful group remained the same. There were no differences between the two groups on marital status (mostly single), perceptions of mandated vs voluntary enrolment (most voluntary) or previous number of drink driving offences. However the unsuccessful group were classified as alcohol dependent by the AUDIT and reported that they did not change their drinking habits whilst the interlock was installed. Conversely, the successful group were not alcohol dependant and reported actively trying to reduce their drinking behaviours. Finally, one participant in the unsuccessful group appears to have attempted to circumvent the interlock on three separate occasions as an adequate breath sample was provided to start the vehicle but the next rolling re-test was failed, which suggests another person may have started the vehicle. Table 2 highlights the differences between the two groups on the downloaded interlock data.

Table 2. Differences between the Successful and Unsuccessful Interlock Group

Group	Successful Group (N=6)	Unsuccessful Group (N=3)
Vehicle Usage:	75% (of days)	80% (of days)
Engine Starts:	4.7 (per day)	4 (per day)
Usage over Time:	10% reduction	No change
Incorrect Samples:	2.25 (per day)	8.2 (per day)
Breath-test Failures:	13	24
Re-tests not Provided:	4	6

Discussion and Conclusion

The findings indicate that participants believed interlocks to be an effective countermeasure that reduces the likelihood of both drink driving and unlicensed driving whilst the device was installed. Furthermore, the majority perceived interlocks to be an educational tool that assists in teaching participants the skills to avoid drink driving e.g., safe drinking levels. However, this only proved to be an accurate assessment for the “successful” group who reduced the frequency of breath-test failures.

Two preliminary findings from the study were the different drinking behaviours between the successful and unsuccessful group, and the disparity between the self-reported data and downloaded interlock recordings. Firstly, the study may suggest that being both *motivated* and *able* to control alcohol usage is essential for successful interlock operation, as participants in the unsuccessful group were assessed to be alcohol dependent and unwilling to change their drinking behaviours. Subsequently it proves difficult to frequently operate a vehicle fitted with an interlock whilst consuming large quantities of alcohol on a daily basis. Secondly, participants report actively trying to avoid drink driving and attribute breath-test failures to “errors” with the device (e.g., “false positives”), while the interlocks indicate participants are attempting to start their vehicle after consuming alcohol. An unwillingness to recognise and acknowledge attempts to drink and drive remains a concern, as it is hoped that interlocks provide users with immediate feedback regarding their intoxication levels, which serves to help participants become better judges of when they should not attempt to drive (Popkin et al., 1992). However it is noted that the effectiveness of interlocks in stopping drink driving while the device is installed is clearly evident, with every registered breath-test failure signifying that an offender was not able to drive on a public road after they had been drinking.

These findings tentatively suggest that interlock usage for repeat offenders may need to be supervised by appropriate personnel who can provide guidance and assistance. Supervision serves a number of important purposes including: (a) confirm that participants adequately and regularly use the device, (b) downloaded interlock data can be reviewed with feedback provided to participants regarding performance, (c) discrepancies between self reported and interlock data can be investigated to increase awareness (d) referrals made for alcohol dependent individuals, and (e) appropriate action undertaken when numerous interlock breaches are observed e.g., warnings or sanctions.

The study has considerable limitations as the sample size is very small. The low number of drink driving offenders accepting the interlock option in the Queensland trial have been attributed to (a) magistrates being reluctant to offer interlocks to offenders and (b) offenders not being aware of the interlock option when they are sentenced. Whilst efforts continue that aim to provide both magistrates and potential participants with information regarding the value of the interlock trial, a considerable proportion of individuals in the larger “comparison” group (N = 125) indicate that they would have accepted the interlock option if they were aware of the sentencing alternative.

A second limitation is that participants completed a drink driving rehabilitation program before interlock installation, and any positive outcomes of the interlock program may reflect this combined intervention rather than purely interlock usage. Finally as highlighted above, the validity of the self-report data remains uncertain. Although previous research has indicated that self-report data is a reliable and valid indicator of offenders’ experiences and intentions to re-offend (Green, 1989), questions remain about the accuracy of such data when possible sanctions are contingent upon participants’ responses. Further studies are needed in this area to determine the utility of self-report data involving interlock usage. Such studies should continue to focus on a number of measurement outcomes (e.g., multiple measures of change) as the possibility of drawing misleading conclusions increases when using simple indexes to measure change (Lambert & Hill, 1994). Finally, further research could examine appropriate consequences for registering a high frequency of breath-test failures that may include written warnings, further sanctions, interlock removal or extended interlock usage.

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