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An evaluation of the ‘Skipper’ designated driver program: Preliminary results

Watson, B. & Nielson, A.

Centre for Accident Research and Road Safety – Queensland, Queensland University of Technology

Abstract

The general aim of designated driver programs is to reduce the level of drink driving by encouraging potential drivers to travel with a driver who has abstained from (or at least limited) consuming alcohol. Designated driver programs appear to be quite widespread around the world, however a limited number have been effectively evaluated. This paper reports the preliminary results from the outcome component of an evaluation of a designated driver program called ‘Skipper’, which was trialled in a provincial city in Queensland. In order to assess changes over time in self-reported designated driver awareness and behaviour, as well as drinking and drink driving behaviour, surveys were conducted three weeks prior to (baseline) and four months following (follow-up) the commencement of the trial. The sample comprised 413 individuals from representative drinking venues in the ‘intervention area’ (202 baseline; 211 follow-up) and 401 individuals from a ‘comparison area’ (203 baseline; 199 follow-up). The preliminary results indicate that awareness of the program in the intervention area was quite high four months following its introduction. The results also suggest that the ‘Skipper’ program and the related publicity had positive impacts on behaviour with there being an increase in the proportion of people participating in designated driver as a passenger and a tendency for those who act as designated drivers to do so more often. In addition, there was no evidence of an increase in alcohol consumption among the passengers of designated drivers compared to what otherwise may have been the case. It is less clear at this stage whether the ‘Skipper’ program has impacted on other behaviours of interest. Suggestions for further research and program improvement are discussed as well as limitations of the research.

Introduction

Drink driving is a major concern for road safety. The consumption of alcohol has been shown to adversely affect many of the skills required for safe driving (Moskowitz & Robinson, 1988; Ogden & Moskowitz, 2004). Alcohol has also been shown to increase the risk of being involved in a crash, with drivers who drink having a crash risk (depending on their blood alcohol concentration (BAC)) anywhere between 1.5 and 25 times that of sober drivers (Ogden & Moskowitz, 2004).

Due to the serious nature of the drink driving problem, a variety of countermeasures have been put in place around the world, including:

- penalties and sanctions (e.g., licence loss, fines);
- enforcement (e.g., Random Breath Testing (RBT));
- rehabilitation programs (e.g., Under the Limit¹);
- public education programs (e.g., mass media campaigns); and
- community based programs (e.g., designated driver).

¹ Under the Limit is a community based drink driving rehabilitation program in Queensland which was developed by CARRS-Q and administered through the courts with assistance from the Department of Community Corrections and TAFE.

These countermeasures have met with varying levels of success, but together have led to a wholesale reduction in alcohol related crashes in Queensland and around the world (Homel, Carseldine, & Kearns, 1988; Watson & Freeman, 2007). Despite these reductions however, drink driving continues to be a serious problem with approximately 38% of fatal crashes in Queensland involving alcohol and/or drugs in 2003 (Queensland Transport, 2004).

It has been suggested that if it is better understood why people drink and drive, more effective countermeasures can be designed and implemented. Research into the factors involved in drink driving has shown that it is a complex problem which requires a variety of different approaches to be taken in its prevention (Shults, et al, 2001). Factors suggested to influence drink driving include:

- attitudes toward drink driving (both the individual and their social group);
- personal factors (eg, alcohol dependence; Morrison, Begg, & Langley, 2002);
- deterrence (fear of getting caught and punished, the experience of avoiding punishment (e.g., Freeman & Watson, 2006);
- knowledge (eg, the effects of alcohol on safe driving); and
- situational factors (eg, transport availability; Morrison, Begg, & Langley, 2002).

The general aim of designated driver programs is to reduce the overall level of drink driving by encouraging potential drivers to travel with a driver who has abstained from (or at least limited) consuming alcohol. More particularly, the primary target group for these programs are those potential drivers who need to travel to and from public drinking venues. While the research literature does not confirm a specific best practice model, it does suggest that designated driver programs should incorporate the following elements:

- public education to support the program, addressing the following key messages:
 - choose a designated driver prior to drinking,
 - the designated driver should stay under legal limit, and
 - the designated driver drives passengers home safely.
- involvement of key stakeholders, including motivated licensed premises; and
- systematic management and monitoring of the program (Nielson & Watson, undated).

In 2006/7, the Queensland Government Steering Committee developed a designated driver program named 'Skipper'. The 'Skipper' program is an in-premises program in which patrons agree to stay sober and drive their friends home in exchange for free soft drinks. In July 2007, this program was implemented as a trial in Mackay (intervention area), supported by media (facilitated by Recording Artists, Actors, & Athletes Against Drink Driving - RADD) including radio and press as well as advertising in premises (e.g., posters). A total of 41 venues agreed to participate in the program at the time the follow-up data collection was conducted.

The current evaluation aims to provide a better understanding of whether designated driver programs are effective in reducing drink driving, as well as providing knowledge about the processes that facilitate and/or impede their effectiveness. It aims to achieve this by conducting a comprehensive evaluation that identifies whether the ‘Skipper’ designated driver program is effective in achieving its desired *outcomes*, and also examine the adequacy of the *processes* underpinning its implementation. Accordingly, the overall objectives of the evaluation are twofold:

- to examine the implementation processes underpinning the program and how they can be enhanced (*process* evaluation component); and
- to assess the effectiveness of the designated driver program in reducing drink driving among the target group (*outcome* evaluation component).

The objective of the *outcome evaluation* is to assess the extent to which the program has achieved its desired outcomes, specifically, a reduction in drink driving among the target group. This paper will report on preliminary results from the survey component of the outcome evaluation.

Method

So as to establish whether the changes in the behaviour of the target group were actually due to the program of interest and not some other campaign or initiative it was essential to compare the before (pre) and after (post) behaviour of those exposed to the program (intervention area) with a similar group of people who were not exposed to the intervention (comparison area). After considering a variety of sites across the state, it was decided by the Steering Committee to implement the trial in the provincial town of Mackay (population 85,399), with Rockhampton (population 74,530) acting as the comparison site. The basic design of the outcome evaluation is outlined in Table 1.

Table 1 Research design for outcome evaluation

	Phase 1 (Baseline) Pre trial data - 2 weeks prior to trial implementation	Phase 2 (Short-term follow up) Post trial data - 4 months following trial implementation
Intervention area (Mackay)	Self-reported knowledge, attitudes and behaviour as measured by in- premises survey	Self-reported knowledge, attitudes and behaviour as measured by in- premises survey
	RBT data – inc. drink driving detections per test, last place of drinking (<i>not included</i>)	RBT data – inc. drink driving detections per test, last place of drinking (<i>not included</i>)
	Offence data – inc. drink driving, street offences (<i>not included</i>)	Offence data – inc. drink driving, street offences (<i>not included</i>)
	Crash data – inc. alcohol related crashes (<i>not included</i>)	Crash data – inc. alcohol related crashes (<i>not included</i>)
Comparison area (Rockhampton)	Self-reported knowledge, attitudes and behaviour as measured by in- premises questionnaire	Self-reported knowledge, attitudes and behaviour as measured by in- premises questionnaire
	RBT data – inc. drink driving detections per test, last place of drinking (<i>not included</i>)	RBT data – inc. drink driving detections per test, last place of drinking (<i>not included</i>)
	Offence data – inc. drink driving, street offences (<i>not included</i>)	Offence data – inc. drink driving, street offences (<i>not included</i>)
	Crash data – inc. alcohol related crashes (<i>not included</i>)	Crash data – inc. alcohol related crashes (<i>not included</i>)

For the survey, patrons were approached inside drinking establishments and were asked if they were interested in participating in a brief survey about getting around after drinking. Prior to giving consent, participants were offered an information sheet giving details of the study, what participation entails, confidentiality and withdrawal options. Verbal consent was then be obtained prior to the survey being conducted. On completion of the interview, participants were thanked for their time and given a movie voucher to thank them for their involvement and to encourage a high participation rate. The survey included demographic items and items relating to self-reported drink driving behaviour, awareness of designated driver programs, awareness of designated driver practices, and preparedness and intentions to use designated drivers.

Responses from the surveys were collated, coded and entered into SPSS 15. Descriptive statistics were generated overall and for demographic categories (including age, gender, drinking levels etc). Statistical comparisons were made between these categories; between the intervention and comparison areas; and between baseline and follow-up.

The participants in Phase 1 (baseline) consisted of 202 individuals from eight representative drinking venues² (pubs/taverns, nightclubs, small³, large³) in the intervention area and 203 individuals from eight representative drinking venues in the comparison area. In Phase 2 (follow-up) there were 211 individuals from eight (same venues as baseline) representative drinking venues in the intervention area and 199 individuals from eight (same venues as baseline) representative drinking venues in the comparison area. Of the 906 people approached, 815 participated and 92 refused, resulting in an overall participation rate of 89.9%. There were no differences between participants and non-participants in the proportion of males and females, or proportion in each age group.

Results

Baseline findings

Over three quarters of participants (77.7%) held open licences at the time of interview (18.1% provisional; 4.2% learner). The proportion of male to female was approximately equivalent (50.6% male; 49.4% female), with the majority of participants were aged under 30 (63.5%) (see Table 2).

Almost all participants had access to a vehicle (96.8%), about three quarters worked full time (75.6%), and a majority (61.9%) lived less than 10 km from the venue in which they were interviewed. Participants most commonly reported drinking spirits (48.4%), but a large proportion also reported drinking beer (36.3%) (see Table 2).

² These venues were chosen based on advice from the Office of Liquor, Gaming and Racing – Liquor Licensing Division.

³ The size of the venue was determined by its patron capacity as advised by the Office of Liquor, Gaming and Racing – Liquor Licensing Division.

Table 2 Demographic characteristics of participants at baseline

Participant characteristic	Level	N	%
Gender	Male	205	50.6
	Female	200	49.4
Age group	17-24	183	45.2
	25-29	74	18.3
	30-39	76	18.8
	40-49	47	11.6
	50-59	22	5.4
	60 and over	3	0.7
Licence type	Learner	17	4.2
	Provisional/restricted	73	18.1
	Open/full	314	77.5
	Missing	1	0.2
Employment status	Full-time	306	75.6
	Part-time	31	7.7
	Casual	30	7.4
	Student	14	3.5
	Unemployed	21	5.2
	Retired	3	0.7
Access to vehicle	Yes	392	96.8
	No	13	3.2
Distance from home	0-4km	125	30.9
	5-9km	125	30.9
	10-19km	94	23.2
	20-34km	30	7.4
	35+km	30	7.4
	Missing	4	0.2
Alcoholic drink	Beer	147	36.3
	Wine	53	13.1
	Spirits	196	48.4
	None	5	1.2
	Missing	4	1.0

Almost all of the participants had heard of the terms designated driver before (98.5%). The most frequently stated sources for knowledge about designated driver were ‘friends/family’ (43.4% yes) and ‘television’ (38.6% yes). Quite a large proportion responded “yes” to ‘other’, with the most commonly cited other source being “school”. It should also be noted that around 10% stated that designated driver was a ‘common term’, that they had heard mentioned “everywhere” in the past.

There were 55 (13.6%) participants that indicated they were a designated driver on the night of interview, while 97 (24.6%) indicated they were using a designated driver. Of

those using a designated driver, the majority were travelling with a female designated driver (63.5%), who was under 30 years old (60.4%), and who was a friend to the participant (56.8%).

A large proportion of the sample (86.4%) had used a designated driver as a passenger at least once before. Of these, 24.2% had not used one in the last three months, 16.7% had used one once, and 59.1% had used one more than once.

Over three quarters of the participants indicated that they had acted as a designated driver at some time in the past. Of those who had acted as a designated driver, 29.7% indicated they had not done so in the last three months, 14.2% had done so once, and 56.1% more than once.

When asked about how many times they had driven a vehicle when they thought they may have been over the limit in the last three months, 78.5% responded “none”, 10.4% once, and 11.1% more than once. This is somewhat consistent with other studies in the area (e.g., Watson & Freeman, 2007). It is interesting to note that of those who had driven when they thought they may have been over the limit at least once in the last three months just over half (51.7%) had done it more than once.

Participants were slightly less likely to report that they had been a passenger of a vehicle when they believed the driver may have been over the limit in the last three months, with 81.4% responding “none”, 7.4% once, and 11.4% more than once. Again, it is interesting to note that more than half (60.5%) of those indicating that they had done this in the last three months had done it more than once.

Based on their reported alcohol consumption, about three quarters (287) of the participants could be classified as “low risk”⁴ drinkers (according to NHMRC guidelines, 2001). Almost one quarter (92) could be classified as “risky”⁵, while 2.3% (9) could be considered “high risk”⁶. The average number of reported standard drinks in a week was 11 (SD=17.63). It should be noted that these guidelines are related to safe drinking levels from a health perspective and not related to levels of alcohol considered safe for driving.

The majority of participants believed they could drink 2 or less drinks in an hour before it would affect their driving (69.4%). The average number of drinks reported was 2.2 (SD=1.57). Almost three quarters (282) of participants who responded, reported that they went out drinking less than 5 times in a month on average.

Participants from the intervention area did not substantially differ from those in the comparison area at baseline on most items. The differences that were found were geographic in nature (e.g., distance of venue from home) and were either adjusted for in analyses or not expected to influence the results.

⁴ Low risk = up to 18 standard drinks per week for males; up to 12 standard drinks per week females

⁵ Risky = 19-70 standard drinks per week for males; 13-42 standard drinks per week for females

⁶ High risk = 71 or more standard drinks per week for male; 43 or more standard drinks per week for females

Baseline vs. Follow-up findings

Comparison area

Overall, few differences were found between the participants in the baseline and follow-up samples in the comparison area, confirming the comparability of the two samples. Specifically, in the comparison area, baseline participants did not significantly differ from follow-up participants in terms of gender, employment status, access to a vehicle, or type of alcoholic drink. However, there was a significant difference between baseline and follow-up in the age [$\chi^2(1) = 4.56, p = .03$], and licence type of participants [$\chi^2(2) = 7.26, p = .03$]. Specifically, baseline participants tended to be older than follow-up participants. These differences were accounted for in analyses.

Furthermore, there was no significant difference between participants in the comparison area at baseline and follow-up in their level of awareness of designated driver; nor in the reported source of their knowledge. Similarly, there was no significant difference in the proportion of participants who had used a designated driver in the comparison area at follow-up either in terms of the last 3 months (baseline 61%; follow-up 63%) or ever (baseline 83%; follow-up 85%) (see Figure 1).

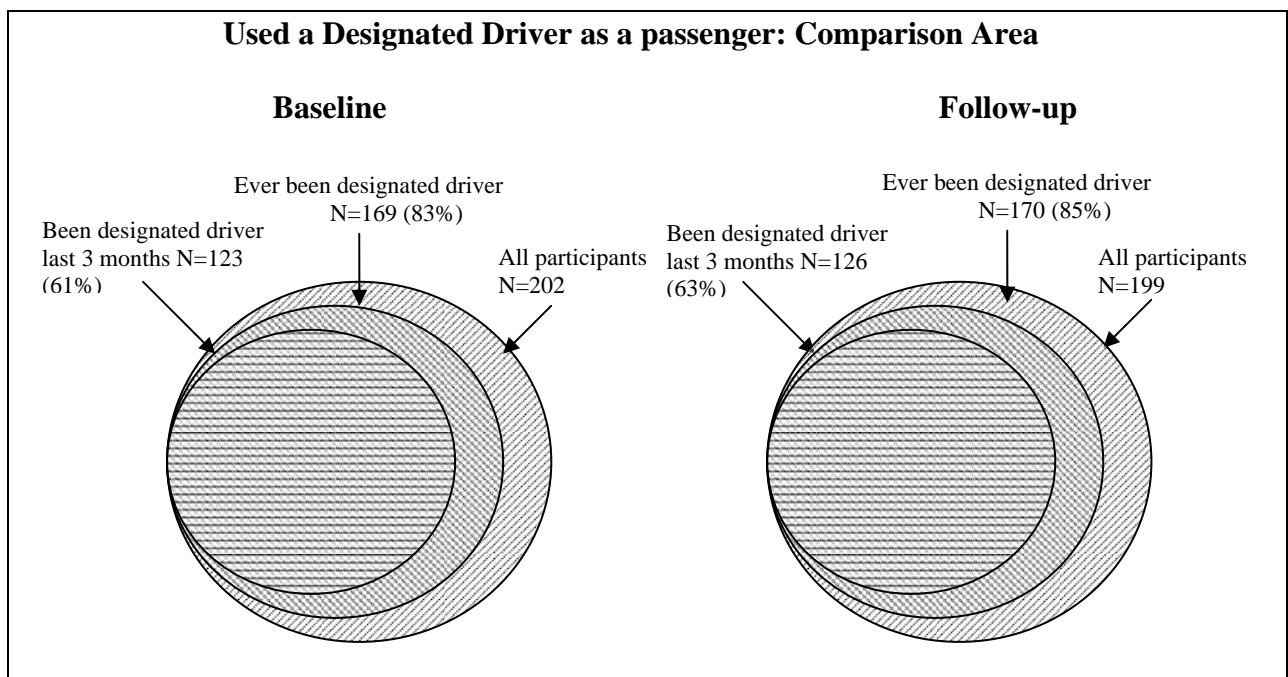


Figure 1: Use of designated driver as a passenger in the comparison area

There was also no significant difference in the proportion of the participants who had acted as a designated driver in the comparison area at follow-up both in terms of the last 3 months (baseline 50%; follow-up 53%) and ever (baseline 75%; follow-up 72%) (see Figure 2).

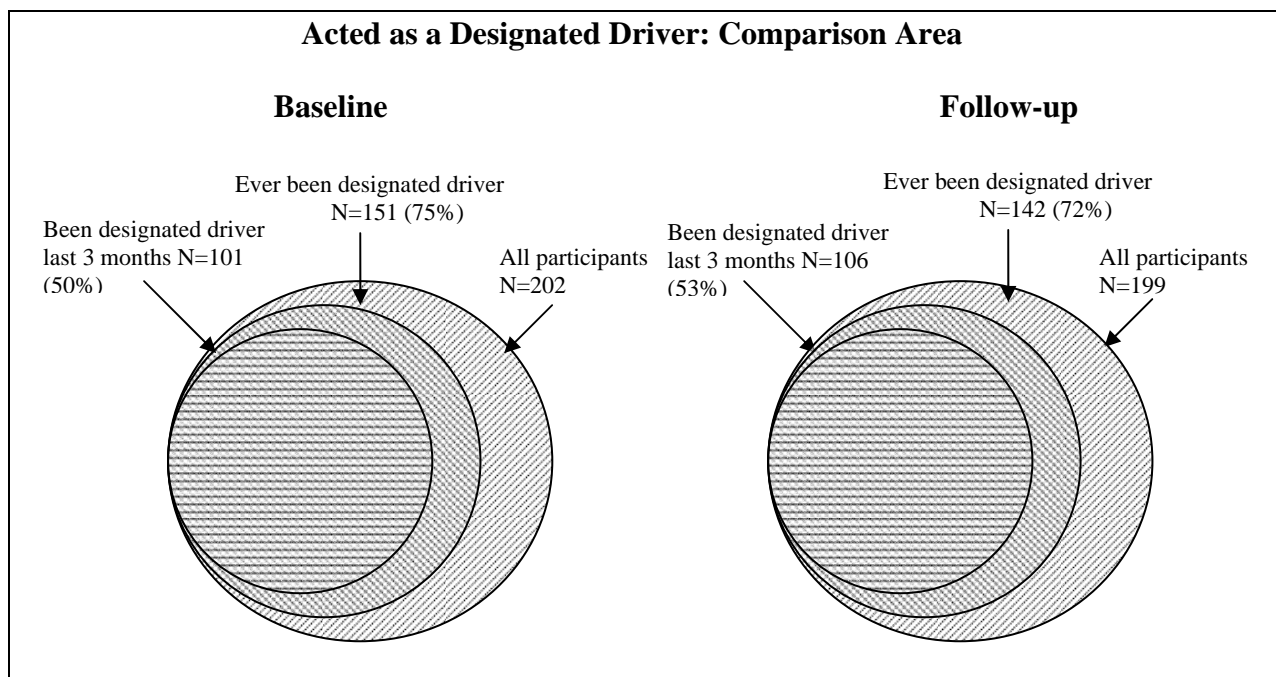


Figure 2: Acted as a designated driver in the comparison area

Intervention area

On the whole, the people participating in the survey at follow-up were generally similar to those in the baseline sample. For example participants at baseline did not significantly differ from participants at follow-up on licence type, employment status, access to a vehicle, or type of alcoholic drink. However, there was a significant difference between the samples in the proportion of participants living at different distances from the pub/club [$\chi^2(4) = 15.26, p = .004$], gender [$\chi^2(1) = 6.96, p = .008$] and age [$\chi^2(1) = 5.40, p = .02$]. Specifically, participants at baseline tended to live further from the venue, be younger and male. Once again, these differences were accounted for in analyses.

While there was no significant difference between the baseline and follow-up participants in the intervention area in their level of awareness of designated driver; they did differ in the reported source of their knowledge. Specifically, a greater proportion of participants at follow-up reported that they heard about it on the radio [$\chi^2(1) = 26.14, p < .001$] than baseline participants. More particularly, almost three-quarters of the participants at follow-up had heard of Skipper as opposed to 6.4% at baseline [$\chi^2(1) = 180.72, p < .001$].

Interestingly, there was no significant difference between participants in the intervention area at baseline and follow-up in the proportion that indicated they were a designated driver or were using a designated driver on the night of interview. Furthermore, the gender and age of the designated drivers they were using were not significantly different from baseline to follow-up.

While there was an increase in the proportion of participants who reported that they had used a designated driver as a passenger at least once before (baseline 83%; follow-up 89%), this change was not significant (see Figure 3). The participants also did not significantly differ in their responses about the drinking behaviour of their designated driver or themselves as passengers. There was however a significant increase from baseline to follow-up in the proportion of participants using a designated driver as a passenger in the

last three months (67.0% at baseline; 82.0% at follow-up) [$\chi^2(2) = 16.22, p < .001$] (see Figure 3).

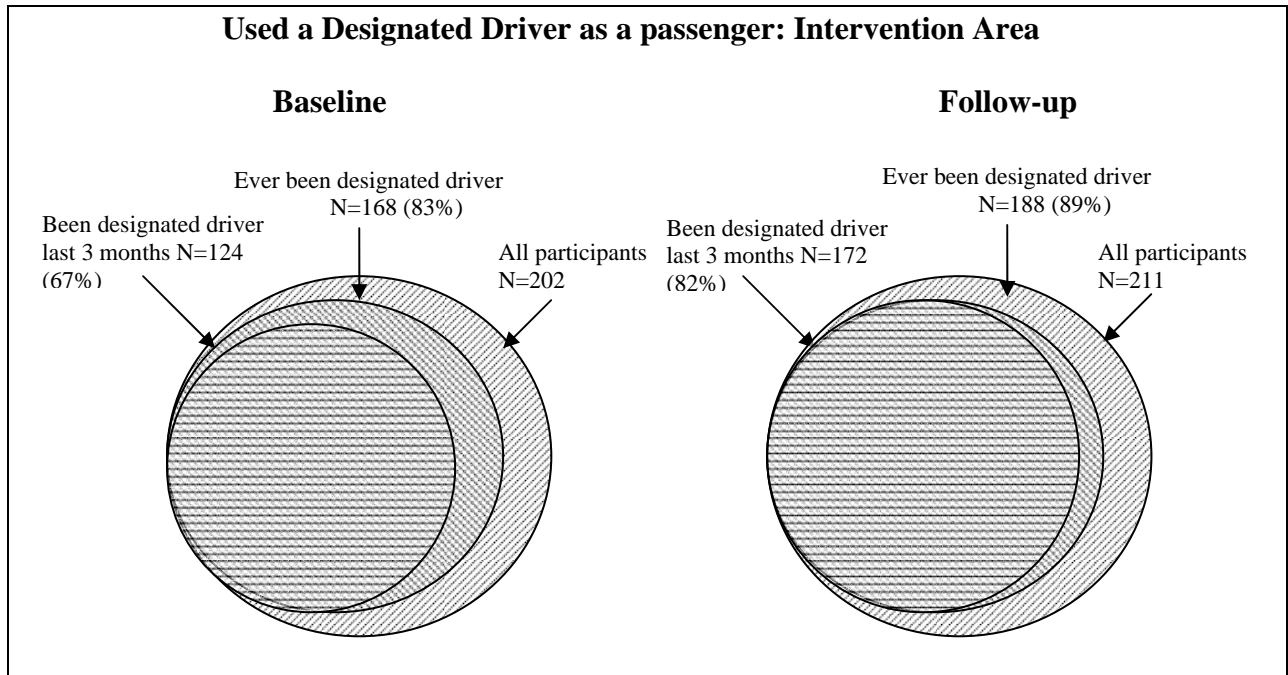


Figure 3: Use of designated driver as a passenger in the intervention area

As shown in Figure 4, the two samples did not significantly differ in the proportion that indicated that they had acted as a designated driver at some time in the past (baseline 79%; follow-up 76%). Nor did they significantly differ in their reported drinking behaviour while acting as designated drivers. While there was a small increase in the proportion of participants who acted as a designated driver in the past 3 months (baseline 53%; follow-up 57%), this change was not statistically significant (see Figure 4).

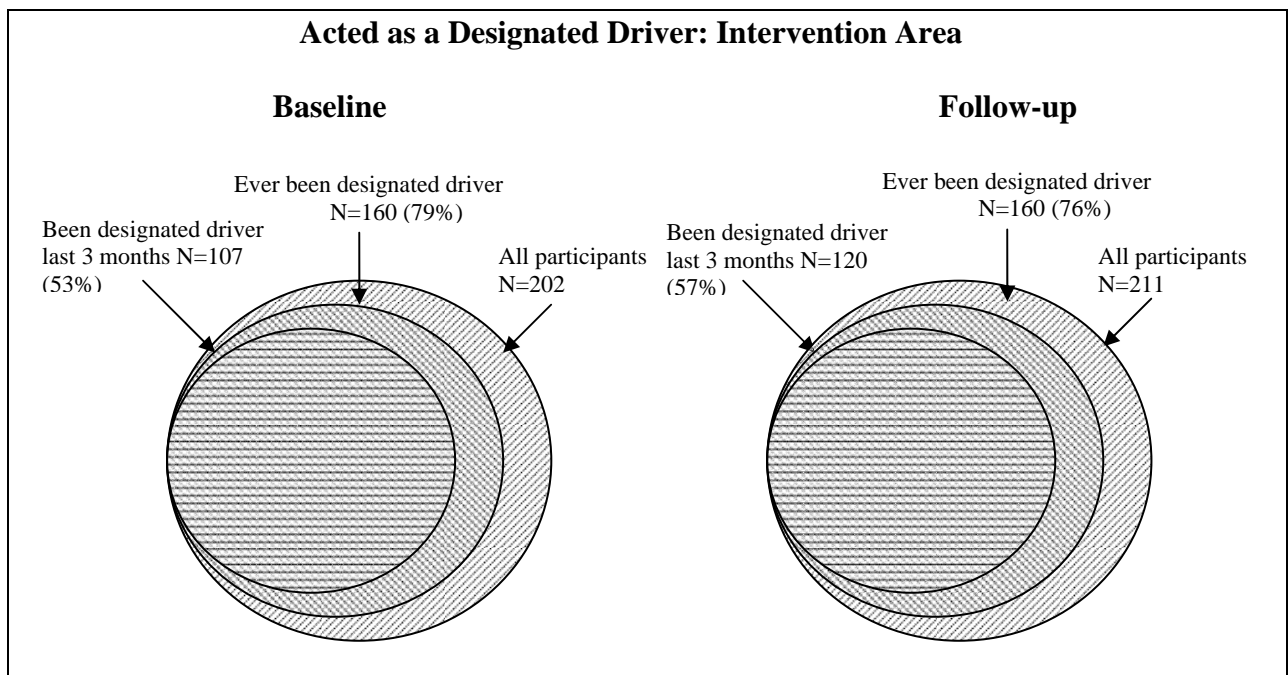


Figure 4: Acted as designated driver as a driver in the intervention area

In addition, there was an increase in the number of times the participants had acted as a designated driver in the last 3 months which approached significance ($M=3.17$ times at baseline; $M=4.39$ at follow-up) [$F(1,312) = 3.64, p = .057$] (see Figure 5).

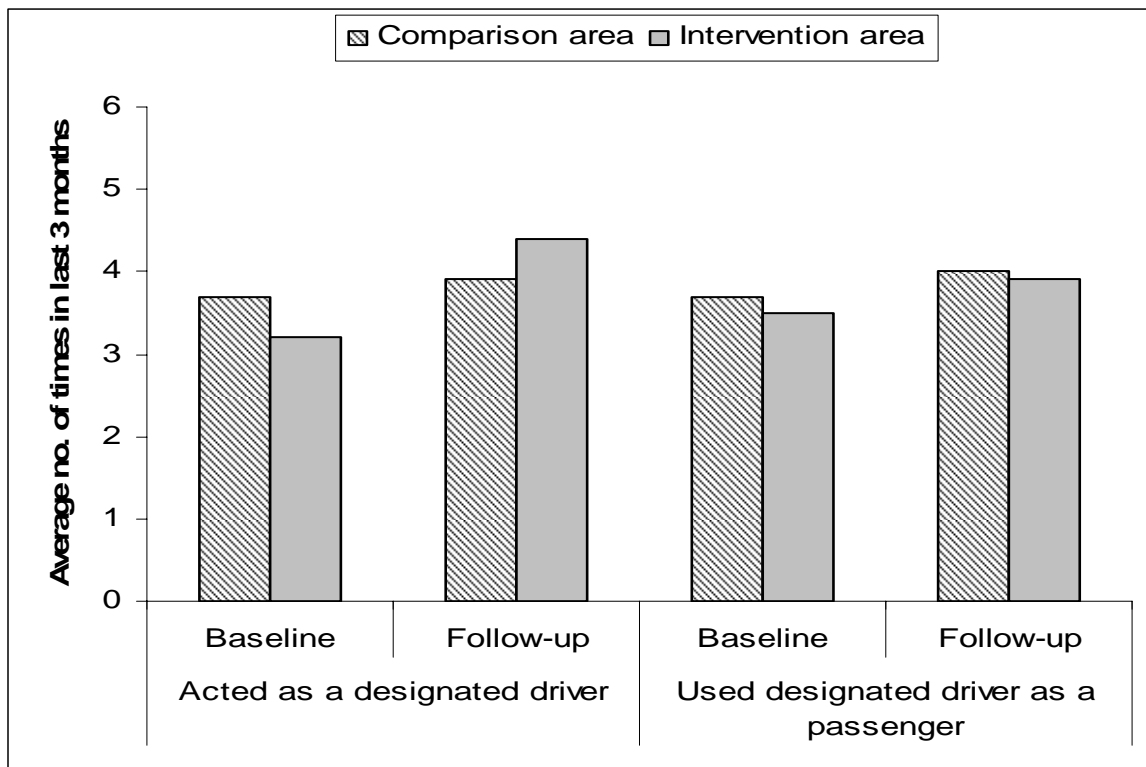


Figure 5: Designated driver usage in the intervention and comparison areas at baseline and follow-up

Sub-group differences were explored across the entire sample for all items and on items relating to designated driver, ‘Skipper’, and drink driving in the intervention area at follow-up. Across the entire sample, males were more likely than females to report driving while possibly being over the limit (26.0% of males; 17.6% of females) [$\chi^2(1) = 8.09, p = .004$] and being a passenger of a vehicle when the driver may be over the limit (23.2% of males; 16.9% of females) [$\chi^2(1) = 4.89, p = .027$]. Females were more likely than males to report having acted as a designated driver ever (72.6% of males; 80.1% of females) [$\chi^2(1) = 6.04, p = .014$] and acted as a designated driver at least once in the last 3 months (72.6% of males; 80.1% of females) [$\chi^2(1) = 6.04, p = .014$]. Females also reported drinking less (females – 10 standard drinks/week; males – 20 standard drinks/week) and going out drinking less often (females – 3.7 times a month; males – 6.3 times a month).

In terms of the intervention area at follow-up, a much higher proportion of males had heard of the ‘Skipper’ program than females (80.2% of males; 58.5% of females) [$\chi^2(1) = 11.20, p = .001$]. Males were also more likely to be aware that ‘Skipper’ was running in the venue in which they were interviewed (38.8% of males; 24.1% of females) [$\chi^2(1) = 4.63, p = .031$].

‘Younger’ participants were more likely to: have ever used a designated driver (90.3% of 17-29; 81.0% of 30+) [$\chi^2(1) = 13.46, p < .001$] and have used a designated driver in the last 3 months (85.0% of 17-29; 71.2% of 30+) [$\chi^2(1) = 17.45, p < .001$]. Younger participants were also more likely to report: driving while they may have been over the limit in the last

3 months (26.3% of 17-29; 13.0% of 30+) [$\chi^2(1) = 17.73, p < .001$]; being a passenger of a vehicle when the driver may have been over the limit in the last 3 months (26.0% of 17-29; 7.9% of 30+) [$\chi^2(1) = 35.34, p < .001$]; drinking more per week (17-29 – 17 standard drinks/week; 30+ – 13 standard drinks/week), and going out drinking more often (17-29 – 5.5 times a month; 30+ – 4.4 times a month). For the intervention area at follow-up no further differences between the age groups were identified.

Discussion

The sampling techniques used for the survey were relatively successful with very high participation rates across the study areas and phases. There were no significant differences between participants and non-participants on any demographic factors, which provides good evidence that a representative unbiased sample was recruited. The sample size was sufficient to maintain the power of the statistical tests used, including those at the sub-group level.

There were no substantive differences between the sampling areas or across the phases on participant characteristics or on any item not expected to be affected by the introduction of the ‘Skipper’ program. Any differences that were found were adjusted for in analyses or not expected to influence the results.

Importantly, however, there were changes in a number of variables that were expected to be influenced by the ‘Skipper’ intervention. Firstly, in the intervention area, there was a shift in the source of knowledge about the designated driver concept from family/friends at baseline to radio at follow-up. This result provides some evidence that the media campaign accompanying ‘Skipper’ successfully reached its audience. To further support this, the shift in source of knowledge did not occur in the comparison area. Interestingly, there was no increase in the awareness of designated driver in general from baseline to follow-up in the intervention area. However, this may have been due to the already high awareness of the designated driver concept (98.1%), suggesting a possible ceiling effect.

While there was no change in the proportion of people participating in designated driver as passengers or drivers on the night of interview, there was a significant increase in the proportion of participants who had used a designated driver in the last 3 months. There were also encouraging increases in the proportion acting as a designated driver and in the frequency of them doing so; however these changes were not statistically significant. The majority of participants in the intervention area were aware of ‘Skipper’, however only a moderate proportion (33%) of those knew it was being conducted in the venue they were currently attending. Finally, there was no evidence of an increase in alcohol consumption among the passengers of designated drivers over and above what would otherwise have been the case.

Sub-group analyses revealed some interesting results that may impact on both the evaluation and on future implementation of the ‘Skipper’ program. Firstly, males were much more likely than females to report driving while possibly being over the limit and being a passenger of a vehicle when the driver may have been over the limit. Males also reported drinking more alcohol per week. Females on the other hand were much more likely to report planning behaviour and being a designated driver. Interestingly, males in the intervention area at follow-up were more aware than females of ‘Skipper’ both generally and the fact that it was in the venue in which they were interviewed. This result

may be a reflection of the advertising strategy used which included a strong emphasis sporting personalities, however, due to the greater tendency of males to drink and drive this targeted approach may have been appropriate.

‘Younger’ participants were more likely than ‘older’ participants to report having used a designated driver ever and in the last 3 months. In contrast, ‘younger’ participants were also more likely to report driving while they may have been over the limit and being a passenger of a driver that may have been over the limit in the last 3 months. Both of these results may be due to ‘younger’ people having more opportunity to engage in both behaviours due to them going out more and drinking more alcohol. However, even after taking that into account they may be quite receptive to being involved in designated driver programs.

There are several possible limitations of the survey component of the outcome evaluation that need to be borne in mind when interpreting the findings. Firstly, the data reported here were self-report only, which may introduce biases such as social desirability. Also, the questionnaire was limited in that it did not measure all of the outcomes of interest for this evaluation. This will largely be addressed by the inclusion of RBT, offence and crash data in the broader evaluation, which is currently being completed. Another possible limitation is the short timeframe for follow-up. It is possible that four months was not sufficient time for an effect to occur of any magnitude. The change in frequency of designated driver use may be the first step toward more significant behaviour change in the future. Further follow-up would be required to address this issue.

A final potential limitation of the outcome evaluation is that the comparisons have been made at the area level rather than at an individual level. In this regard, there may have not been enough saturation of the program within the area to get an optimal effect. Although almost all of the venues in the intervention area were participating in the ‘Skipper’ program, inconsistent implementation may have affected results.

Conclusion

Overall it seems that the ‘Skipper’ program was successful in promoting awareness of designated driver practices at least for four months following its introduction. In terms of behaviour change, however, the results are less clear. On the positive side, there was a significant increase in the proportion of participants using a designated driver in the last 3 months (baseline 67%; follow-up 83%). Also, while not statistically significant, participants reported acting as a designated driver more often in the last 3 months at follow-up. Finally, there was no evidence of an increase in the alcohol consumption of the passengers of designated drivers, which otherwise may have represented a health-related disbenefit. However, it is less clear at this stage whether the ‘Skipper’ program has impacted on other behaviours of interest. More particularly, there was no evidence of a reduction in the overall level of self-reported drink driving in the intervention area at follow-up, nor a change in the proportion of participants reporting being passengers when of a driver who may have been over the limit. It should be noted however, that the results presented here are preliminary, and form only part of a larger evaluation which is examining the changes in a number of other important outcome measures including the results of random breath test operation, and official traffic offence and crash data. In addition, further analysis of the self-reported drink driving behaviour data is being undertaken to identify potential among sub-groups of drivers.

Acknowledgments

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