

How did a lower drink-drive limit affect bar trade and drinking practices? A qualitative study of how alcohol retailers experienced a change in policy

COLIN SUMPTER¹, ANDREA MOHAN², JENNIFER McKELL², JAMES LEWSEY³, CAROL EMSLIE⁴ & NIAMH FITZGERALD² 

¹NHS Forth Valley, Stirling, UK, ²Institute of Social Marketing, University of Stirling, Stirling, UK, ³Institute of Health and Wellbeing, University of Glasgow, Glasgow, UK, and ⁴School of Health and Life Sciences, Glasgow Caledonian University, Glasgow, UK

Abstract

Introduction and Aims. Reducing the legal drink-drive limit from 0.08% to 0.05% blood alcohol concentration (BAC) can reduce road traffic accidents and deaths if properly enforced. Reduced limits may be opposed by alcohol retail and manufacturing industries on the basis of commercial impact. Our aim was to qualitatively explore how a reduction in the drink-drive limit from 0.08% to 0.05% BAC in Scotland, was experienced by bar owners or managers, including any resultant changes in customer drinking or business practice. This is the first study of this type. **Design and Methods.** Semi-structured interviews were conducted with 16 owners and managers of on-trade premises in Scotland in 2018, approximately three years after the drink-drive limit was reduced. Data were analysed using thematic analysis. **Results.** Most participants reported no long-term financial impact on their business, but a few, mainly from rural areas, reported some reduction in alcohol sales. Observed drinking changes included fewer people drinking after work or leaving premises earlier on weekdays. Adaptations to businesses included improving the range of no/low-alcohol drinks and food offered. Changes such as these were seen as key to minimising economic impact. **Discussion and Conclusions.** Opposition to legislative measures that impact on commercial interests is often strong and receives significant public attention. This study found that Scottish businesses that adapted to the drink-drive limit change reported little long-term economic impact. These findings are of international relevance as potential BAC limit reductions in several other jurisdictions remain the subject of debate, including regarding the impact on business. [Sumpter C, Mohan A, McKell J, Lewsey J, Emslie C, Fitzgerald N. How did a lower drink-drive limit affect bar trade and drinking practices? A qualitative study of how alcohol retailers experienced a change in policy. *Drug Alcohol Rev* 2020;39:170–179]

Key words: alcohol policy, alcohol retail environment, BAC limit, drink-driving, low alcohol alternatives.

Introduction

Road traffic accidents (RTA) caused by people driving under the influence of alcohol (drink-driving) are responsible for 373 000 deaths world-wide annually [1]. The number of fatalities in Great Britain in incidents where at least one driver was over the drink-drive limit rose to 250 in 2017, the highest figure since 2009 [2]. There is good evidence that RTAs can be reduced when blood alcohol concentration (BAC) limits for driving (drink-drive limit) are lowered and actively enforced [3–7].

One hundred and seventy-one countries have a drink-drive limit; 70% of these have a BAC limit of 50 mg of alcohol per 100 mL of blood (0.05%) or lower [1]. A recent meta-analysis of studies that investigated the impact of lowering BAC limits found that a 0.05% limit was more effective in lowering fatal RTAs than a 0.08% limit [8]. This analysis found that a 0.05% limit led to an 11% reduction in fatal RTAs compared to a 9% reduction for a 0.08% limit, and estimated that 1790 lives could be saved in the USA if the drink-drive limit in all its states was lowered to 0.05% [8].

Colin Sumpter MSc, Specialty Registrar, Andrea Mohan PhD, Research Assistant, Jennifer McKell MSc, Research Fellow, James Lewsey PhD, Professor of Medical Statistics, Carol Emslie PhD, Professor, Niamh Fitzgerald PhD, Associate Professor in Alcohol Studies. Correspondence to Dr Niamh Fitzgerald, Institute of Social Marketing, Faculty of Health Sciences and Sport, University of Stirling, Stirling, FK9 4LA, UK. Tel: +01786 467362; E-mail: niamh.fitzgerald@stir.ac.uk

Received 26 February 2019; accepted for publication 30 September 2019.

In Scotland the BAC limit is now 0.05% following a reduction from 0.08% on 5 December 2014 [9]. England, Wales and Northern Ireland now remain the only parts of the European Union to retain the higher 0.08% limit [10]. The new Scottish BAC limit applies to all drivers regardless of age, length of time qualified or vehicle type. Under the *Scotland Act* 2012, the Scottish Government was granted power to lower the drink-drive limit, but not to introduce measures such as random breath testing [11]. The government's decision to lower this limit was guided by a UK report which estimated that a 0.05% limit would reduce RTAs and save between 3 and 17 lives each year in Scotland [12]. A majority of responses to a public consultation at the time supported the lower limit [13], however, a recent quantitative study found that change was not associated with a reduction in RTAs, possibly due to inadequate enforcement [14]. The limit change was accompanied by an educational campaign to inform the public.

Alcohol consumption is relatively high in Scotland, with adults buying an average of 10.2 L of pure alcohol per person per year [15], compared to global and European averages of 6.4 and 9.8 L respectively [1]. There are 11 587 premises licensed to sell alcohol, approximately one for every 379 adult residents [16]. Around 27% of alcohol sold is from 'on-trade' premises, that is, sales for consumption on the premises which sold the alcohol such as pubs, restaurants, clubs and bars [16].

Despite widespread support, the lowering of the drink-drive limit in Scotland was opposed by some individuals, hospitality organisations and alcohol producers [13,17]. Media reports of industry-provided data described a 'devastating' impact on on-trade premises, with 'millions of pounds lost...as people stay at home or consume soft drinks' [17]. Reports also claimed that the lower limit had contributed to premises closures [18] and particular concern was expressed about the impact on businesses in rural or tourist areas [19]. Similar concerns of the potential impact on tourism and hospitality revenue if the BAC limit was reduced to 0.05% have been expressed by alcohol producers and hospitality organisations in Canada [20] and the USA [21,22].

The recent study evaluating the impact of the lower 0.05% BAC limit in Scotland found that this was associated with a small reduction (-0.7% , -0.8 to -0.5 ; $P < 0.0001$) in sales from on-trade premises, with no such association for sales from premises where alcohol is *not* consumed, for example, supermarkets, convenience stores [14]. The recent meta-analysis of studies evaluating this impact in other countries found that there was no significant impact on overall alcohol consumption measures [8].

The aim of this study is to explore the experiences of owners and managers of premises licensed to sell alcohol for consumption on the premises regarding the lower 0.05% BAC limit in Scotland, including how their business practices and customer base and behaviours have been affected. To our knowledge, this is the first study to explore this topic with licensees. The objectives of this study were to understand: (i) how retailers of alcohol for on-premises consumption, prepared for, experienced and responded to a lower drink-drive limit in the three years following implementation; (ii) how, if at all, the lower drink-drive limit affected consumer types, behaviours and practices in on-premises drinking establishments; and (iii) what financial or other impact, if any, the lower limit was perceived to have on on-premises alcohol retail businesses.

Methods

We conducted a qualitative interview study with on-premises alcohol retailers. A qualitative approach was chosen in order to gain insight into experiences, and the meanings behind those experiences, in relation to the drink-drive limit change (referred to as the limit change from here on) [23].

Sample

We took a purposive sample of owners or managers of a variety of on-trade premise types, including pub companies or 'pubcos', in terms of ownership, location (urban/rural) and gender (Table 1). Rurality of premises was determined using the Scottish Government six-fold urban rural classification; this is based on the population number and/or distance of an area in relation to areas of 10 000 people or more in Scotland [24]. Our aim was to select participants who possessed specific characteristics to illuminate the phenomena being studied [25]. Several participants were recommended by the co-ordinator of an accreditation and awards scheme for alcohol retailers known as 'Best Bar None' (BBN) [26]. The recommendations were based on the co-ordinator's knowledge of the applications made by alcohol retail premises to the BBN awards scheme and were reported as likely to have been proactive in responding to the limit change, for example, via alternative drinks or travel options for customers. In these cases, BBN approached premises on our behalf to provide information about the study, and we followed up. Remaining interviews were arranged by telephoning venues identified through internet

Table 1. Participant characteristics

No.	Role	Duration in role, years	Gender	Premise type	Business model	Urban/rural ^a	Recruitment
1	Manager	25	M	Hotel, bar and restaurant	Managed pub (Large chain)	Urban	BBN
2	Owner	21	F	Bar and restaurant	Independent free trade	Urban	BBN
3	Owner	25	M	Hotel, pub and restaurant	Independent free trade	Rural	Direct
4	Manager	5	F	Pub	Managed pub (small chain)	Urban	BBN
5	Owner ^c	33	M	Pub and restaurant	Independent free trade	Urban	BBN
6	Owner	22	M	Pub	Independent free trade	Urban	BBN
7	Manager ^{b,c}	Unknown	F	Nightclub	Managed club (small chain)	Urban	BBN
8	Manager ^{b,c}	Unknown	F	Nightclub	Managed club (small chain)	Urban	BBN
9	Owner	25	M	Nightclub	Independent free trade	Urban	BBN
10	Manager	7	F	Pub	Independent free trade	Urban	BBN
11	Owner	12	F	Restaurant	Independent free trade	Urban	BBN
12	Owner	29	F	Hotel, pub and restaurant	Independent free trade	Rural	Direct
13	Owner	8	F	Hotel, pub and restaurant	Independent free trade	Rural	Direct
14	Business development manager	6	M	N/A	Tied tenanted/leased pubs	N/A	Direct
15	Manager	46	M	Pub	Independent free trade	Urban	BBN
16	Owner	14	M	Hotel, pub and restaurant	Independent free trade	Rural	Direct

^aUrban area = population of 10 000 or more people; rural area = population of less than 10 000 people and within a minimum drive-time of 30 min from an urban area. ^bPaired interview. ^cFace to face interview. BBN, Best Bar None; F, female; M, male; N/A, not applicable.

searches and direct knowledge. These venues were chosen to boost the rural/urban split of the participants. Informed consent was sought in writing; not all participants had access to email, so some gave audio-recorded consent. A small number (fewer than five) declined to participate for reasons of time, or lack of interest.

In total, we recruited 16 participants from 15 premises including: 11 independent free trade (independently owned and operated businesses); three managed pubs or clubs (part of a chain of establishments owned by a company and the manager is an employee); and one leased pub (leased from a company such as a brewery, and usually tied to selling their products). The 16 participants included six managers, nine owners and one 'pubco' business development manager. All worked in on-trade premises at the time

of the limit change and relevant work experience ranged from six to 46 years. Participant characteristics are described in Table 1.

Data collection

We used individual interviews to protect the identity of participants and enable open discussion of business practices. This approach has been successfully used in previous studies conducted with bar owners and other retailers [27]. One interview took place as a paired interview with senior staff from one business which owned several venues.

Participants were provided with an information sheet in advance. The consent process included a reminder of the purpose of the study, procedures for

confidentiality, that participation was voluntary, and that they could withdraw from the study at any point.

Fifteen interviews were conducted by CS ($n = 10$), AM ($n = 3$) and NF ($n = 2$) between November 2017 and February 2018. All interviewers are experienced qualitative researchers educated to PhD (NF and AM) or MSc level (CS). Interviews were conducted mainly by telephone ($n = 13$) as we have previously used this to facilitate participation in alcohol policy studies [28,29] and as there is no clear evidence that face to face interviews elicit better data [30]. Participants were given the option of being interviewed face to face; one paired and one individual interview were conducted this way (Table 1). No one else was present with the interviewer(s) during the interviews, but participants were often located in their premises therefore other people may have been present at their end.

Interviews lasted 20 to 40 minutes. A topic guide was used to facilitate discussions (Table 2 for overview). This was developed by NF, CS and AM, and was discussed and refined following the first interview. Participants were not known to the interviewers before being contacted. They appeared engaged and open with a strong willingness to share their opinion and experiences. All interviews were audio-recorded and transcribed verbatim by professional transcribers. All transcripts were sent to interviewees to check for accuracy and provide an opportunity to elaborate or clarify any points, although none took this opportunity.

Analysis

Thematic analysis [31] was used. We used NVivo 11 to manage and sort the data. Initially, CS and AM randomly selected four transcripts and independently coded two each using a combined deductive (based on the study's aim and objectives) and inductive (based on

emerging concepts and patterns in the data) approach. Next, CS and AM met to discuss the codes and grouped them according to similarity or relatedness to form an initial coding framework. This was reviewed by NF and refined. CS applied this framework to eight other transcripts and then met with NF and AM to discuss and refine the coding framework. CS then applied this framework to the final three transcripts, and met with NF and AM to discuss the final themes and sub-themes that resulted from the groupings of codes in the framework; this resulted in a final thematic framework (Table 3). The themes and sub-themes were also discussed with JM, JL and CE in relation to a larger study exploring the limit change. All authors commented on drafts of the findings.

Ethics

Ethical approval was granted by the University of Stirling's General University Ethics Panel in May 2017 (GUEP134).

Results

Overall, participants reported that the limit change was widely known about in the licensed trade prior to its introduction, due to publicity in the mainstream media and specialist trade press. Most were supportive of the limit change. The findings centre on four main themes: (i) impact on business profits; (ii) changes in customer drinking behaviour and practices; (iii) changes in customer travel and transport options; and (iv) business adaptations. These are discussed below.

Impact on business profits

Most participants reported that prior to the limit change, there was little concern about the potential impact the change would have on their own business, although many felt it would impact on the hospitality industry as a whole. Post-limit change, most participants felt there had been no overall impact on their profits. A few reported a short-term impact that had lasted six to 12 months, but had seen profits return to normal after this period. A small minority reported a significant and persisting financial impact on their business and a similar number reported a smaller persisting financial impact. Rural pubs were more likely to report a negative economic impact while urban food-led establishments were less likely to report this as customers had continued to eat out while switching alcohol for soft drinks. Estimates of the size

Table 2. Participant interview guide overview

	Question
1	General questions on the licensed premises and context of the licensed premises
2	Opinion and predicted impact of the limit change. Any preparations made
3	Impact on levels of trade (footfall, net profit, other)
4	Change in drinking behaviour (customer response to limit change)
5	Business response to the limit change including: <ul style="list-style-type: none"> • Changes/diversification in drinks range • Special offers/promotions • Travel-related changes
6	General views of drink-driving and the licensed trade in Scotland

Table 3. Thematic framework including themes, sub-themes and definitions

Theme 1: Impact on business profits	
Sub-theme	Definition
1.1 Predicted business impact	Predicted impact of the limit change on own and others' venues at the time of introduction. Includes both negative (e.g. loss of customers, closing down) and positive (e.g. new ideas for business).
1.2 Financial/business impact	Impact seen in customer numbers, revenue and profit, and volume sold. Any offset against new sources of revenue or changed behaviours.
1.3 Mitigating factors	Contextual elements that also contributed to changes reported e.g. unrelated trends in alcohol consumption ('confounding activity').
1.4 Attitude to change (pre-change)	Attitude to the drink-drive limit change before it was introduced, for example, first impressions upon hearing, fears and hopes.
1.5 Attitude to change (current)	Current attitudes to the change including beliefs about the likely impact of the limit change on drink-driving practices in Scotland.
1.6 Planning for change	Actions taken to try and mitigate the impact of the limit change before it was put in place including those who state that no action was taken.
1.7 Police enforcement	Views or observations on approaches to police enforcement of the limit.
Theme 2: Changes in customer drinking behaviour and practices	
Sub-theme	Definition
2.1 Drinking behaviour	Changes observed in time, style or volume of alcohol drinking. Any other changes in approach to alcohol overtly or tacitly associated with the limit change. Groups or types of people perceived as most affected.
2.3 Public attitudes and knowledge	Customers' attitudes and understanding of the limit change as expressed to license holders.
2.4 Beliefs about drink-driving	Licensees' attitudes toward drink-driving and their belief of prevalence of drink-driving. Excludes their opinion of the efficacy of lower limits in reducing drink-driving.
Theme 3: Changes in customer travel and transport options	
Sub-theme	Definition
3.1 Changes in customer travel	Changes in travel mode to/from licensed premises. Groups or types of people most affected.
3.2 Business changes for travel	Travel arrangements put in place by venues for customers.
Theme 4: Business adaptations	
Sub-theme	Definition
4.1 Alternatives to alcohol	New or expanded provision, or increased marketing or promotional offers on, soft drinks, teas, coffees, or no/low alcohol alternatives to alcohol. New or improved food offer to offset and loss from alcohol reduction. New or improved entertainment offer.
4.2 Improved travel options	Designated driver offers; partnerships with taxi drivers, efforts to make public transport easier and more accessible.
4.3 Staff responses (passive)	Responses of staff to direct questioning about alcohol limit including any formal training to help them understand drink/drive limits or on appropriate action to take in response to a suspected drink-driver.
4.4 Staff interventions (active)	Active interventions taken by staff to reduce drink-driving including approaching customers or clarifying if customers are driving before serving alcohol.

of the economic impact varied from 'a couple of pints a day' to around £300 per week in sales.

'I won't stand here and claim it was completely and utterly detrimental to my business...what it did do

was the amount of people coming in, if you look at the revenue that raised...It was the equivalent of about £300 to £400 a week'. [3: male; owner; independent free trade; hotel, pub and restaurant; rural]

Regarding the impact on other premises, golf clubs were perceived as the hardest hit, particularly those located in areas with limited public transport. Participants could not recall any venue closures as a result of the limit change.

Changes in customer drinking behaviour and practices

Participants felt that drink-driving was rare in Scotland and that public attitudes had significantly shifted over time to be less tolerant of the behaviour.

'It used to be that if somebody was properly drunk and was not able to stand you would take their keys off them, you know, but those were in the days where people actually did drink and drive when they were well over the limit and it was not seen as a stigma which it is now'. [5: male; owner; independent free trade; pub and restaurant; urban]

There was a general belief that more people had stopped drinking alcohol if they had to drive. Participants thought that this change in behaviour had stemmed from the public message 'the best advice is none', which was promoted by the police when the limit was changed [9]. Participants viewed this message as overly stringent and believed that the economic impact on their business would have been minimised if this public message had been different.

Despite the belief that drink-driving was socially unacceptable, many participants recalled recent incidents when they were aware of customers drinking alcohol and driving afterwards. Rural participants were more likely to report such incidents and were also more likely to report an increase in social isolation as after-work drinking and socialisation during the week had reduced since the limit change.

Participants described three groups of drinkers that were particularly affected by the limit change. First and most commonly mentioned was the 'after-work drinker' group, which mainly comprised of men who would have dropped in on the way home from work. Participants reported that this behaviour had declined and attributed this to a public perception that the limit had changed from a 'two-pint limit' to a 'no pint limit'.

'Especially people do not tend to come out at tea time as much whereas they used to come out at tea time and just have a couple of pints and still drive. Whereas now you do not see that'. [1: male; manager; managed; hotel, bar and restaurant; urban]

The second affected group comprised of the 'next morning driver'. Participants had observed that these

people were now finishing drinking earlier on most nights, and particularly Sundays.

So Sunday to Thursday you might get somebody coming in and having two, three, four pints up until midnight but maybe driving the next day; they would not be driving straight after leaving the pub but they'd be driving after they got up in the morning... ..so they would go home earlier or reduce the amount, or just not come out at all. [14: male; business development manager; tied tenanted/leased pubs; PubCo; urban]

A few participants, mostly from urban premises, reported that they or their customers had invested in personal breathalysers to better understand when they were over the limit, particularly in relation to driving the next day.

'Yes, you know how you can get these breathalysers ... I remember a lot of them floating about at the time. And people testing themselves and I think they were quite surprised about how much alcohol was still in their system the next morning. So they were very wary about drinking in the evening when they were driving the next day'. [2: female; owner; independent free trade; bar and restaurant; urban]

The third affected group comprised of the 'lunch-time drinker', although these were reportedly less affected by the limit change. In food-led establishments, it was often female customers who would previously have shared a bottle of wine, or had single glasses, but who now preferred to either have a designated driver or drink only soft drinks.

'There was people who came in for lunch every week and they now just have a soft drink with their lunch. I have not lost their trade, they are still coming out for lunch which is a bonus but they do not have any alcohol at all now'. [11: female; owner; independent free trade; restaurant; rural]

Changes in customer travel and transport options

Most participants, regardless of venue type or location, felt that prior to the limit change, many customers would either have drunk up to the old limit and driven, or abstained when driving. They believed that drinkers had now normalised to the change and had adapted their behaviours so that they could drink as much or as little as they wanted. For example, they reported that customers had started to leave their cars at venues overnight or were using designated drivers or public transport more often. These behaviours had helped to

mitigate any potential long-term economic impact on business.

'As time went on they started to use public transport and came back into the bar but yes, there was definitely a lull for a good six to eight months when it initially came into force'. [2: female; owner; independent free trade; bar and restaurant; urban]

Participants viewed transport to and from venues as the customer's responsibility and therefore most had made little effort to improve transport options for customers, despite this being considered a barrier to drinking. There were no examples of transport being paid for by the venue. One participant knew of a rural hotel that offered a minibus service to customers, while another knew a venue that provided transport at Christmas for large booked parties.

A small number of participants from urban premises had adopted a proactive approach to transportation by developing a relationship with local taxi firms or offering a freephone to the taxi company. Other urban venues also reported that they advertised public transport information to customers.

Business adaptations

Participants described the limit change as one of many government policies and cultural shifts to which their businesses had to adapt. Participants from both urban and rural areas placed the limit change in the context of other factors including the global economic downturn, comparatively lower prices in the 'off-trade' (sales of alcohol for consumption off the premises) sector, and the rise of at-home drinking. Adapting to the legislative change and customers' expectations was seen as key to a successful business; those that did not adapt were more likely to have been affected economically. Many participants had made positive changes and had flexible attitudes about what their business offered consumers.

'So we are quite happy to change to whatever means we have to do. If the drink-driving limit has gone down then we need to offer more different things to attract folk in... Generally some of the older style pubs do not really cater for that and just do not want to know that like really. So they might have lost out a bit on that'. [15: male; manager; independent free trade; pub; urban]

The major change in practice was around the provision of alternatives to alcohol. While participants from drink-only venues reported that their main income still

came from alcoholic drinks, others described a growing trend in customer demand for no/low-alcohol drinks, and the range and quality of these drinks on offer from manufacturers. Whereas previously only one no/low-alcohol alternative would have been sold (other than soft drinks), examples were given of no/low-alcohol ranges intended to mimic the experience of drinking alcohol. This trend was primarily for beer but also present in cider and wine. There was also a smaller growth in the sale of hot drinks such as coffee.

'As I said the low alcohol, no alcohol beer and wine, mocktails and soft drinks obviously became a big part of what we do. We sell a lot of coffee and soft drinks with our meals so that was really the plan, was to produce a bigger range of soft drinks and non-alcoholic drinks'. [5: male; owner; independent free trade; pub and restaurant; urban]

Another adaptation was to improve the presentation of no/low-alcohol and other soft drinks, to make customers feel that they were still consuming alcohol.

'... it was making them feel part of the social crowd even though they were not drinking, so we looked at different glassware and how to present even a sparkling mineral water, we made it look like a gin and tonic'. [14: male; business development manager; tied tenanted/leased pubs; PubCo; urban]

There were considerable efforts made by premises to cater for designated drivers including free soft drinks, free bottled water or promotional deals on soft drinks. Although these initiatives were discussed in relation to the limit change, and have increased since, they had mostly been in place prior to the change. These initiatives were more common at Christmas time, though many were offered year-round. Participants believed that the limit change would have contributed to the increased popularity and continuation of these initiatives.

'We already had an extensive range of soft drinks, in fact we have got a fridge that contains nothing but low alcohol or non-alcohol beers and soft drinks ... so it did not feel as if we needed to do any more'. [6: male; owner; independent free trade; pub; urban]

Although the majority of participants owned or managed premises that provided food, only three mentioned improving the variety of food on the menu or putting on special food offers, in response to the limit change.

'There's things I could do and did do in terms of trying to increase the food at night time and therefore stimulate a bit more on that and get people coming out for an evening meal when we did a couple of special events or increase special events, which we still do'. [3: male; owner; independent free trade; hotel; pub and restaurant; rural]

Discussion

Following the introduction of a lower drink-drive limit in Scotland, owners/managers of licensed premises reported that some of their customers had changed their choices of drinking occasion, beverage and drinking times, and that businesses had adapted accordingly with most reporting minimal financial impact. This is in line with the recent finding that the limit change in Scotland resulted in a 0.7% decrease in per-capita on-trade sales [14]. Our findings suggest that any small fall in revenue from alcohol sales is likely to have been replaced, at least in part, by sales of non-alcoholic drinks or food.

A few participants reported a short-term impact due to the limit change, which had lasted 6 to 12 months; these accounts were consistent with media reports dated a few months after the limit changed, which suggested that the change had a large financial impact on on-premises retailers [17–19]. However, most participants reported that overall, the limit change had little impact on business, and that good businesses should continuously adapt to a changing trading environment. This view was echoed in later media reports which suggested that struggling businesses needed more innovation and investment, instead of attributing their loss of revenue to the limit change [32]. In contrast, the Scottish Licensed Trade Association, a trade body, has consistently expressed concern over the large economic impact the limit change has had on on-trade premises [19,32,33].

Participants from rural areas were more likely to report negative impacts, however it was felt that the limit change was one of many factors that negatively affected business. The lack of alternative transport options in rural areas may mean that drink-driving laws could have a disproportionate, albeit small, effect on rural premises. In these areas, further consideration could be given to the availability of transport to and from social venues, including pubs. Looking to the future, automated 'driverless' cars may offer a solution to the conflict between efforts to reduce drink-drive casualties [34] and protecting social benefits that may arise from the availability of on-trade premises [35], particularly in rural communities.

Participants from both urban and rural areas placed the limit change in the context of other trends in the

wider economy and alcohol market. Others have suggested a rise in in-home entertainment as an additional factor [35]. Scottish Government data on the number of on-trade licences show a small increase in the number of premises licensed to sell alcohol in Scotland since the introduction of the limit change in 2014 [16] but the figures include both bars and restaurants and likely reflect wider market changes. Overall, despite the reservations of participants (regardless of premise type or location), there was broad acceptance of the limit change, disapproval of drink-driving, and little suggestion that the reduction should be reversed.

This is the first qualitative study of licensee observations of, and responses to, a reduction in the drink-driving limit. As a qualitative study it fulfilled its aim of gaining insight into retailer and customer practices, and adaptations to the limit change. The sample, whilst diverse, was recruited mostly through an industry-led award and accreditation scheme for bars (BBN) and may therefore have included more well-managed and innovative establishments than if we had recruited by other means. Such premises may have been better able to adapt and therefore less affected by the limit change. Secondly, the premises recommended may have been less likely to present the industry or BBN scheme in a negative light by expressing opposition to the limit change or holding controversial views. Third, the clientele of these venues may also influence the impact of the limit change on licensed venues, for example having customers with higher disposable income. However, whilst our participants reported providing some non-alcoholic options, their accounts and previous research suggest that they could be considerably more proactive on this front [36], perhaps supported by trade bodies. Additionally, most of our participants owned or managed premises located in urban areas; thus our findings may be less likely to be reflective of wider views for rural licensees.

We did not interview any business owners that may have ceased trading, however our participants were not able to identify any occurrence as result of the limit change. The specific impact of the limit change was difficult for respondents to identify, and the time elapsed since the change (approximately three years) may have led to some failure to recall accurately. Our methods did not allow us to account for the totality of the impact on the licensed trade but they are in line with a quantitative study showing minimal impact on alcohol sales [14].

Conclusion

This study has significant implications for international policymaking. Thirty-seven countries still have a BAC

limit of 0.08%, and 31 countries have no BAC limit at all [1]. There are ongoing legislative and advocacy efforts to reduce the drink-drive limit in England [37] and in New York [38] where a limit of 0.08% applies. Such efforts face opposition to lower limits from commercial interests [21,22,38,39]. Furthermore, other countries such as Malta [40] which have recently made the same changes, may face pressure to revert to a 0.08% BAC limit. The findings of our study ought to provide policymakers with some reassurance that the on-trade alcohol retail sector may be able to successfully adapt business practices and products offered in the context of a reduced drink-drive limit.

In this first study to examine how a lowering of the legal drink-drive limit was experienced by bar owners or managers, we found broad acceptance of the change, with most reporting no persistent financial impact on their businesses, despite some changes in customer behaviour.

Acknowledgements

The authors wish to acknowledge the support of the Chief Scientist Office (HIPS/16/49) for funding this research. Many thanks also to Best Bar None for assisting with recruitment and all the interviewees for providing their time and opinions. We would also like to thank all members of the advisory group for this study for their input throughout this research.

Conflict of Interest

The research was funded by the Chief Scientist's Office, Scotland (Grant HIPS/16/49). CS was funded by the National Health Service as part of a placement through the specialty training program in public health. None of the researchers have any conflicts of interest to declare.

The authors have no conflicts of interest.

References

- [1] World Health Organisation. Global status report on alcohol and health 2018. Geneva: World Health Organization, 2018 Available at: https://www.who.int/substance_abuse/publications/global_alcohol_report/gsr_2018/en/ (accessed December 2018).
- [2] Department for Transport. Reported Road Casualties in Great Britain: Final Estimates Involving Illegal Alcohol Levels: 2017. (August 2019). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827834/drink-drive-final-estimates-2017.pdf (accessed September 2019).
- [3] Martineau F, Tyner E, Lorenc T, Petticrew M, Lock K. Population-level interventions to reduce alcohol-related harm: an overview of systematic reviews. *Prev Med* 2013;57:278–96.
- [4] Killoran AA, Canning U, Doyle N, Sheppard L. Review of effectiveness of laws limiting blood alcohol concentration levels to reduce alcohol-related road injuries and deaths. London: Centre for Public Health Excellence NICE, 2010.
- [5] Fell JC, Voas RB. The effectiveness of a 0.05 blood alcohol concentration (BAC) limit for driving in the United States. *Addiction* 2013;109: 869–74.
- [6] Yao J, Johnson MB, Tippetts S. Enforcement uniquely predicts reductions in alcohol-impaired crash fatalities. *Addiction* 2016;111:448–53.
- [7] Miller TR, Levy DT, Swedler DI. Lives saved by laws and regulations that resulted from the Bloomberg road safety program. *Accid Anal Prev* 2018;113:131–6.
- [8] Fell JC, Scherer M. Estimation of the potential effectiveness of lowering the blood alcohol concentration (BAC) limit for driving from 0.08 to 0.05 grams per deciliter in the United States. *Alcohol Clin Exp Res* 2017;41:2128–39.
- [9] Scottish Government. Lower Drink Drive Limit (2014). Available at: <https://news.gov.scot/news/lower-drink-drive-limit-2> (accessed June 2018).
- [10] European Transport Safety Council. Blood Alcohol Content (BAC) Drink Driving Limits across Europe (2018). Available at: <https://etsc.eu/blood-alcohol-content-bac-drink-driving-limits-across-europe/> (accessed July 2019).
- [11] The UK Parliament. Scotland Act 2012. London: The Stationary Office, 2012 Available at: <http://www.legislation.gov.uk/ukpga/2012/11/contents/enacted> (accessed July 2018).
- [12] North P. Report of the review of drink and drug driving law. London: Department for Transport, 2010 Available at: <https://webarchive.nationalarchives.gov.uk/20100921035231/http://northreview.independent.gov.uk/report> (accessed Jan 2018).
- [13] Scottish Government Social Research. Reducing the Drink Driving Limit in Scotland: Analysis of Consultation Responses. 2013.
- [14] Haghpanahan H, Lewsey J, Mackay DF *et al.* An evaluation of the effects of lowering blood alcohol concentration limits for drivers on the rates of road traffic accidents and alcohol consumption: a natural experiment. *Lancet* 2019;393:321–9.
- [15] Giles L, Robinson M. Monitoring and evaluating Scotland's alcohol strategy: monitoring report 2018. Edinburgh: NHS Health Scotland, 2018.
- [16] Scottish Government. Statistical Bulletin Crime and Justice Series: Scottish Liquor Licensing Statistics 2016–17.
- [17] Wright S. Scots Pubs Lose Millions After Drink Drive Changes. *Herald Scotland* (March 2015). Available at: <https://www.heraldscotland.com/news/13206550.scots-pubs-lose-millions-after-drink-drive-changes/> (accessed May 2018).
- [18] Ferguson J. Pub Profits Still Plunging After Strain of Tough New Drink Driving Limits Hammers Half of Scotland's Boozers. *Daily Record* (September 2015). Available at: <https://www.dailyrecord.co.uk/news/scottish-news/pub-profits-still-plunging-strain-6446192> .
- [19] Scottish Licensed Trade Association. Scottish on-trade market insight report, Christmas/New Year 2015 (2016). Available at: <http://www.theslta.co.uk/wp-content/uploads/2016/01/SCOTTISH-ON-TRADE-REPORT-XMAS-NY-SURVEY-RESULTS-WEB-SITE-VERSION-2015.pdf> (accessed October 2018).
- [20] Solomon RM, Chamberlain E, Usprich SJ. BAC to the future: modernizing the criminal drinking-driving threshold. *Crim LQ* 2007;52:35.
- [21] Mencimer S. How the booze lobby has helped kill a law that would save 1,800 lives every year. *Mother Jones* (2018). Available at: <https://www.motherjones.com/food/2018/05/how-the-booze-lobby-has-helped-kill-a-law-that-would-save-1800-lives-every-year/> (accessed Oct 2018).
- [22] McGuire A. Op-ed: Utah should not buy the fear-mongering of the alcohol lobby. *The Salt Lake Tribune* (2017). Available at: <http://archive.sltrib.com/article.php?id=5423574&ittype=CMSID> (accessed January 2019).
- [23] Gray G, Jones MD. A qualitative narrative policy framework? Examining the policy narratives of US campaign finance regulatory reform. *Public Policy Adm* 2016;31:193–220.
- [24] Scottish Government. Defining Scotland by Rurality (2018). Available at: <https://www2.gov.scot/Topics/Statistics/About/Methodology/UrbanRuralClassification> (accessed July 2019).
- [25] Mays N, Pope C. Rigour and qualitative research. *BMJ* 1995;311: 109–12.
- [26] Best Bar None Scotland. About BBN (2019). Available at: <https://www.bbnsotland.co.uk/about-bbn/> (accessed February 2019).
- [27] Eadie D, Stead M, MacKintosh AM *et al.* E-cigarette marketing in UK stores: an observational audit and retailers' views. *BMJ Open* 2015;5: e008547.

- [28] Fitzgerald N, Nicholls J, Winterbottom J, Katikireddi S. Implementing a public health objective for alcohol premises licensing in Scotland: a qualitative study of strategies, values, and perceptions of evidence. *Int J Environ Res Public Health* 2017;14:221.
- [29] Fitzgerald N, Platt L, Heywood S, McCambridge J. Large-scale implementation of alcohol brief interventions in new settings in Scotland: a qualitative interview study of a national programme. *BMC Public Health* 2015;15:289.
- [30] Novick G. Is there a bias against telephone interviews in qualitative research? *Res Nurs Health* 2008;31:391–8.
- [31] Braun V, Clarke V. Thematic analysis. In: Cooper H, ed. *APA handbook of research methods in psychology: Vol. 2. Research designs*. Washington, DC: American Psychological Association, 2012.
- [32] Scott K. Buzzworks director says firm will get bigger and pubs can't blame drink driving changes for sales slump. *The Herald* (2018). Available at: https://www.heraldsotland.com/business_hq/15905871.buzzworks-director-says-firm-will-get-bigger-and-pubs-cant-blame-drink-driving-changes-for-sales-slump/ (accessed July 2019).
- [33] Scottish Licensed Trade. Alcohol laws are 'not working'. *Scottish Licensed Trade News* (2018). Available at: <https://sltn.co.uk/2018/10/25/alcohol-laws-are-not-working/> (accessed July 2019).
- [34] National Transport Commission. *Changing driving laws to support automated vehicles*. Melbourne: National Transport Commission, 2017. Available at: [https://www.ntc.gov.au/Media/Reports/\(E5695ACE-993C-618F-46E1-A876391B8CD9\).pdf](https://www.ntc.gov.au/Media/Reports/(E5695ACE-993C-618F-46E1-A876391B8CD9).pdf) (accessed August 2018).
- [35] Cabras I, Reggiani C. Village pubs as a social propellant in rural areas: an econometric study. *J Environ Plan Manag* 2010;53:947–62.
- [36] Willoughby L, Tolvi J. Working with pubs and bars to improve their offer to customers who drink less or not at all. London: Nudging Pubs, 2016. Available at: <http://nudgingpubs.uk/wp-content/uploads/2016/04/Nudging-Pubs-2016.pdf> (accessed October 2018).
- [37] Road Safety GB. Government 'Interested' in Lower Drink-Drive Evidence (November 2018). Available at: <http://roadsafetygb.org.uk/news/government-interested-in-lower-drink-drive-limit-evidence/> (accessed August 2019).
- [38] Eberhart C. Rockland/Westchester journal news. State bill would slash legal drinking limit (April 2019). Available at: <https://eu.lohud.com/story/news/2019/04/27/new-york-state-bill-would-slash-legal-drinking-limit/3502228002/> (accessed August 2019).
- [39] Andrew Mcguire. The Salt Lake Tribune. Op-ed: Utah should not buy the fear-mongering of the alcohol lobby (June 2017). Available at: <https://archive.slttrib.com/article.php?id=5423574&ititype=CMSID> (accessed August 2018).
- [40] Carabott S. *Times Malta* 2018. Drink-drive limits for motorists to be slashed - motorcyclists among vehicles that will have even lower allowance. Available at: <https://timesofmalta.com/articles/view/drink-drive-limits-for-motorists-to-be-slashed.693190> (accessed August 2019).