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International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Research Paper

How are bars and nightclubs in Scotland using extensions in late-night alcohol trading hours? Venue observation study



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ARTICLE INFO

Keywords:

Public health
 Observation
 Alcohol availability
 Opening hours
 On-sales
 Bars
 Nightclubs

ABSTRACT

Introduction: Late-night alcohol trading hours are generally associated with increased alcohol-related harm. Since 2018, two Scottish cities have allowed extensions in late-night alcohol trading hours with the aim of revitalising the night-time economy. This is the first study to directly observe whether and how bars and nightclubs use these extensions, and collect rich qualitative data about venue environment and staff behaviour.

Methods: Trained, paired fieldworkers, behaving as customers, completed semi-structured observation schedules on mobile devices during repeated visits to 15 purposively sampled venues in 2023–24 (5 venues in Glasgow and 10 in Aberdeen: total of 313 h of observation). In-depth qualitative fieldnotes were completed within 48 h of visits.

Results: Half of the venues closed early on at least one fieldworker visit without using all of their later trading hours. Venues using their extended hours were observed to be at low occupancy on at least one visit. Fieldworkers observed bar staff serving alcohol to intoxicated customers in every venue. In half of the venues, 'shot girls' were observed persistently approaching customers, including those who appeared intoxicated.

Conclusions: Extensions in late-night alcohol trading hours granted in two Scottish cities were not used consistently by venues due to lack of demand by customers. The late-night sale of alcohol to intoxicated customers was routine. Our findings challenge the assumption that later trading hours benefit the night-time economy and highlight the likelihood of associated alcohol-related harms.

Introduction

Restricting the availability of alcohol is a cost-effective strategy to reduce alcohol-related harm and tackle noncommunicable diseases (World Health Organization, 2024b, 2025). Temporal availability refers to the hours when alcohol can legally be sold in bars, clubs and other licensed premises. Review evidence suggests that extending temporal availability is associated with increased intoxication, assault, injury,

drink-driving and burden on public services (Hahn et al., 2010; Nepal et al., 2020; Popova et al., 2009; Sanchez-Ramirez & Voaklander, 2018; Stockwell & Chikritzhs, 2009; Wilkinson et al., 2016) and that late-night trading hours may contribute to permissive drinking environments (Dimova et al., 2023). The World Health Organization (WHO) recommends that policymakers avoid increasing temporal availability particularly in communities which already experience high levels of alcohol-related harm (World Health Organization, 2019).

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<https://doi.org/10.1016/j.drugpo.2026.105210>

Available online 26 February 2026

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Globally, the European region has the highest level of alcohol consumption per capita (9.2 litres per year for those aged 15 years and older compared to 5.5 litres globally), and consumption in the UK (10.8 litres) is higher than the European average (World Health Organization, 2024a). Within the UK, alcohol consumption and alcohol-related harm is highest in Scotland, with 22.6 alcohol-specific deaths per 100,000 people in 2023, compared with 15.0, 17.7 and 18.5 deaths per 100,000 people in England, Wales and Northern Ireland respectively (Office for National Statistics, 2025). Scotland has introduced a raft of measures to address alcohol-related harm, including minimum unit pricing in 2018 (Scottish Government, 2024; Wyper et al., 2023). Local licensing boards (operating at local authority level) regulate who can sell alcohol, where it can be sold, and the hours and days of sale (Scottish Parliament, 2005). They also publish a statement of licensing policy describing their approach to the delivery of statutory licensing objectives (Cook et al., 2025), which includes preventing public nuisance, crime and disorder, protecting children and young people from harm, and protecting and improving public health.

Between 2017 and 2019, licensing boards in two cities in Scotland (Aberdeen City Licensing Board and City of Glasgow Licensing Board), with high levels of alcohol availability, consulted on policy changes to their licensing systems. This resulted in decisions to allow later alcohol trading hours in both cities. Different types and numbers of venues were affected in each city. In Aberdeen 38 pubs and bars (including hybrid bar/nightclubs) which had previously closed at or before 1am were given permission to close later (up to 3am, the same time as nightclubs in the city). In Glasgow, 10 nightclubs (but not bars, which at the time usually closed at midnight) were granted a one hour extension to 4am under a pilot scheme (which has subsequently been extended (City of Glasgow Licensing Board, 2023)). To provide an idea of the scale of this change, around 8 % of approximately 430 on-premises venues (i.e. businesses such as pubs, clubs, hotels and restaurants which sell or serve alcohol for immediate consumption) in Aberdeen were permitted to extend their hours, compared to fewer than 1 % of around 1350 on-premises venues in Glasgow. Licensing Boards in both Aberdeen and Glasgow framed these policy changes as bringing economic benefits to their city and revitalising the night-time economy. In Glasgow, the pilot scheme was also presented as rewarding and encouraging good practice in the nightclub trade (City of Glasgow Licensing Board, 2018). This good practice included an investment in safety and security measures designed to promote the licensing objectives (e.g. CCTV and door staff provision including assessment of intoxicated customers). However, our qualitative research found that night-time economy stakeholders in both cities reported mixed consumer demand for extended trading hours and, consequently, later hours not being used consistently by venues (Mitchell et al., 2025).

The mixed-methods 'Evaluating Later or Expanded Premises Hours for Alcohol in the Night-Time economy (ELEPHANT)' study consists of an in-depth exploration of these extended trading hours (<https://fund.ingawards.nihr.ac.uk/award/NIHR129885>). Despite the evidence that late-night trading hours are associated with increased alcohol-related harm, little is known about what happens in premises at this time and the behaviour of staff and customers (Coomber et al., 2017). To our knowledge, this is the first study to directly observe whether and how bars and nightclubs use these extensions, and collect rich qualitative data about venue environment and staff behaviour.

The aim of this paper is to explore, using unobtrusive observation methods:-

- 1) whether and how venues in Aberdeen and Glasgow used the extended hours they were granted
- 2) how busy venues were (particularly during the extended hours)
- 3) the extent to which venues adhered to conditions (i.e. presence of CCTV and door staff, and refusing entry and service to intoxicated customers).

Methods

Systematic unobtrusive observations in nightclubs and bars

Unobtrusive observation allowed fieldworkers to directly witness and record the use of extended trading hours, occupancy within venues (i.e. how full or empty they were), and staff interactions with customers in a way that other methods could not capture (Eadie et al., 2008; Graham et al., 2000; Lee et al., 2003). Fieldworkers were instructed to dress and behave as customers, and avoid unnecessary interactions, with the aim of not substantially changing the environment they were observing (Petticrew et al., 2007). To minimise bias and prevent any potential change in behaviour, venue staff were not informed of observations (Fitzgerald et al., 2021; Forsyth & Lennox, 2010; Quigg et al., 2014).

Sample

We purposively sampled five of the 10 city centre nightclubs in Glasgow and 10 of the 38 venues (a mixture of traditional local 'public houses' (pubs), more modern bars and hybrid bar/clubs) in the city centre and suburbs of Aberdeen which had been granted later trading hours (see Table 1). Our main criterion was that venues were using their extended trading hours (ascertained from venue websites and social media marketing, and phoning venues to check when they closed), as interviews with trade stakeholders indicated that not all venues were using their later hours (Mitchell et al., 2025). We also aimed for, and achieved, a range in terms of type and size of venue and deprivation level of the area in which each venue was located (see Table 1 for more details).

Data collection

Between November 2023 and March 2024, pairs of fieldworkers conducted unobtrusive observations on weekends at 15 venues across Glasgow and Aberdeen (Glasgow: 17 November – 16 December 2023. Aberdeen: 2 February - 2 March 2024). Each venue was visited three times by the same team of fieldworkers, to ensure consistency of observations. The first, short, 'recce' visit (around 1 h) allowed fieldworkers to become familiar with the layout and atmosphere of each venue and to observe entry practices, and staff and customer dress and behaviour (Fitzgerald et al., 2021). The two longer visits (one Friday and one Saturday) involved detailed data collection and required fieldworkers to arrive between 10.30pm and 11pm in Aberdeen and between 10.30pm and 11.45pm in Glasgow (depending on expected close) and stay until closing time to observe behaviour across the night. This amounted to 313 h of observation overall (152 h in Glasgow and 161 in Aberdeen). Fieldworkers were provided with a budget for non-alcoholic drinks and snacks.

A semi-structured observation schedule was developed based on our research questions (See supplementary file 1). Observations were largely qualitative, with the aim of recording rich, detailed descriptions of behaviour, but also included broad quantitative measures. Fieldworkers were asked to note the presence of CCTV, the number of door staff and observe staff interactions with intoxicated patrons (Door staff control access, monitor intoxicated patrons and maintain order and security in UK venues (Hinrichs, Samuel, 2023)). They were also asked to note any instances of staff serving alcohol to intoxicated patrons (a breach of licensing conditions with potentially serious consequences) and closing procedures. Crowding in the busiest area of the venue (excluding the dance floor) was assessed at two time points (before and during the extended trading hours) through validated Likert scales (Graham et al., 2006; Hughes et al., 2012). Fieldworkers were trained to take in-depth fieldnotes about venue environment and staff and patron behaviour. They discreetly used phones in situ to record brief notes of their observations (Fitzgerald et al., 2021; Pennay & Lubman, 2012) which were

Table 1
Characteristics of venues observed in Glasgow and Aberdeen.

Venue ID ^a	Location (extended hrs)	Type ^b	Deprivation ^c	Capacity ^d	Fieldworkers' description
G1	City centre (4am)	Club (Chain)	4	Large	Multiple bars, dance floors (pop, R & B) & quieter seating areas. Opulent décor. DJ & performers (live music). Clientele: equal gender split, wide age range but most (c70 %) < 25 years. Older customers left around 3am, leaving more youthful clientele in the final hour.
G2	City centre (4am)	Club (Indep)	3	Medium	Techno & house music. Very loud and dark. Industrial décor. Clientele: consistently very high proportion (>75 %) of young men. Requirement to purchase tickets in advance; more expensive venue.
G3	City centre (4am)	Club (Indep)	4	Medium	Multiple bars and dance floors with DJs playing different music (mainstream, rap, techno). Lots of seating arranged in classy booths. Clientele: equal gender split, dominated (80 %+) by younger people (< 25 yrs). Student targeted.
G4	City centre (4am)	Club (Indep)	3	Large	Largest venue in sample. Multiple dance floors, DJs (pop & rock) and bars. Industrial chic. Clientele: equal gender split, dominated by younger people (<25 yrs)
G5	City centre (4am)	Club (Indep)	4	Small	Multiple bars & small dance floors, vintage vibe. Quiet enough for people to talk. Different DJs attracted different clientele on different nights; older men on one visit, and younger, more gender balanced crowd on another. Requirement to buy tickets in advance; more expensive venue.
A1	Suburb (deprived area: 1am)	Pub (Indep)	1	Medium	Traditional local pub with pool table, darts, sport on TVs, slot machine (gambling), jukebox with 80 s & 90 s hits. Main bar & function room. Clientele mainly older men (c95 %>25 yrs) who knew each other & the barman.
A2	Suburb (affluent area: 1am)	Pub (Indep)	5	Small	Cosy local pub with varied seating (high stools, booths, tables) & TV screens. Old pop hits playing but not so loud they stopped conversation. Customers mainly older men (c80 %>25 yrs) who knew staff.
A3	City centre (2am)	Pub + dance floor (Chain)	4	Medium	Traditional pub with dance floor. DJ playing loud mainstream music. Quieter raised seating area and pool table and games machine. Screens playing sport. Clientele slightly male dominated (c60 %) and mainly older (c75 % > 25 yrs).
A4	City centre (2am)	Bar (Indep)	2	Small	Dimly lit mainstream bar with karaoke (classic pop & rock). TVs showing sport. Clientele gender balanced and older (c75 % > 25 yrs).
A5	City centre (3am)	Bar / club (Indep)	3	Medium	Cocktail bar / club with DJ playing pop & dance. Lots of seating areas (sofas, high stools, tables) & space to dance. Neon signs & disco balls. Clientele gender balanced and mainly younger (c60 % <25 yrs).
A6	City centre (3am)	Bar / club (Chain)	3	Medium	Trendy hipster bar / club with DJ playing loud pop, dance & techno, mirrored booths, quieter seated & chill out areas, fairy lights & cool decor. Clientele gender balanced and mainly younger (c50 % <25 yrs).
A7	City centre (3am)	Bar / club (Chain)	3	Medium	Cocktail bar over two levels with dance areas and DJ playing loud pop. Diverse seating options (with darker & lighter spaces), photobooth, fake fire. Clientele gender balanced and mainly younger (c60 % < 25 yrs).
A8	City centre (3am)	Bar / club (Indep)	3	Medium	Colourful venue with bar, DJ (playing loud pop) & dance floor on two levels. Mixed seating with booths. Games machines & pool table. Clientele gender balanced and mainly older (c70 % >25 yrs).
A9	City centre (3am)	Pub / club (Chain)	3	Small	Sports pub with loud live music, dance floor, mixed seating & slot (gambling) machines. Clientele slightly male dominated (c60 %) & mainly older (c75 % > 25 yrs).
A10	City centre (3am)	Bar / club (Chain)	3	Medium	Bar / club with DJ (afro beats, Latin, pop, R&B) & live music & dancers. Multiple bars & dance floor. Younger customers dancing and older in seated areas. Different demographic on different nights, but mainly gender balanced, older crowd (c80 % >25 yrs).

^a G indicates Glasgow and A indicates Aberdeen venues.

^b Chain v Independent (Indep) venues.

^c Scottish Index of Multiple Deprivation quintiles, where 1 is most deprived and 5 is least deprived.

^d Capacity: Small 250 people or fewer, Medium 251–500, Large > 500 people.

timestamped. They supplemented this with detailed written or voice notes at home, and full observation reports were completed within 48 h. Fieldworkers independently completed observation reports for each visit. On some occasions, only one observer in each team witnessed and recorded an incident.

Fieldworker training

Fieldworkers completed compulsory one-day in-person training led by KM and CE on safety, data collection and reporting procedures informed by previous observational research (Fitzgerald et al., 2021; Graham et al., 2006; Hughes et al., 2012). This included: following the study protocol, unobtrusive observation and taking discreet notes, confidentiality, disclosure of any crime, recognising signs of intoxication (Fitzgerald et al., 2021) and taking detailed, rich fieldnotes, as well as roleplaying potential scenarios (e.g., aggression from a customer who perceives they are being stared at, bumping into an acquaintance). One Glasgow fieldworker also worked in Aberdeen and shared her expertise during training and debriefs.

Safety was a prime consideration. Fieldworkers always conducted observations in pairs and many had experience working in the night-

time economy. They were provided with a budget for taxi travel and instructed to immediately leave situations in which they felt threatened or unsafe. Team leaders (with experience working in nightlife venues or outreach and / or managing teams) were present in each city during every shift to assist with potential problems, and all fieldworkers were part of WhatsApp groups monitored by the fieldwork leader (KM). Fieldworkers were instructed not to consume alcohol or other intoxicating substances prior to or during observations. They logged their location using the PeopleSafe safety app which is monitored 24 h per day, and checked in with their team leader to confirm they returned home. After the first weekend of observation, we met with each pair of fieldworkers to discuss the quality of data collected. Additionally, throughout fieldwork, weekly team debriefs reflected on observations, and shared problems, and good practice. Fieldworkers could also contact the fieldwork leader (KM) or the PI (CE) privately.

We discussed the draft observation schedule with our NIHR study steering committee and two public involvement groups (comprised of local residents and venue goers from each city). This resulted in changes to the measures we included, inviting a nightlife harm reduction charity (Crew 2000) to provide training to fieldworkers to recognise indications of drug use, and the decision to limit observation outside venues due to

concerns about fieldworker safety. We also developed detailed risk assessments and a safety protocol. Ethical approval was granted by the University of Stirling's General University Ethics Panel (submission 14374, approved 18/07/2023).

Data analysis

Structured data were extracted and transferred to a spreadsheet. Qualitative fieldnotes for each venue were read repeatedly by KM and CE and then coded thematically, facilitated by NVivo. Thematic analysis was used because of its flexibility and ability to provide a detailed and complex analysis of the data (Braun & Clarke, 2006). Coding was broad and largely deductive, linked to the research questions and the observation guides (e.g., 'entering the venue', 'crowding', 'staff behaviour'), and then refined to include practices identified inductively from observations (e.g., behaviour of shot sellers). Findings were discussed and reworked with reference to the data in a cyclical process through discussion with the research team.

Results

Use of extended late-night alcohol trading hours

Overview

In Glasgow, fieldworkers observed five venues (all nightclubs in the city centre; see Table 1) which had been granted an extra hour extension from 3am to 4am (or occasionally to 5am during festive periods). All venues had a charge for entry after 11pm. In Aberdeen, reflecting the more complicated licensing changes, fieldworkers observed a diverse range of 10 venues (e.g. traditional pubs in suburbs, bars with club sections in the city centre) with a range of extensions (until 1am, 2am or 3am). Only one venue charged for entry in Aberdeen.

In both cities, fieldworkers reported that venues either closed earlier than advertised or were quiet on some visits. They noted the lack of entry queues and emptiness of surrounding streets, with the exception of some Glasgow visits in December which were busy on the approach to Christmas. In the next section, structured data are reported in Table 2, while context is provided through excerpts from in-depth qualitative fieldnotes. Venues are anonymised and assigned a number: 'G' refers to Glasgow venues and 'A' to Aberdeen venues.

Venues not using extended hours

In Glasgow, fieldworkers reported that two of the five venues closed earlier than expected on both main visits. Venues G3 and G4 were medium or large mainstream clubs targeting young people which closed at 3.00am or 3.30am instead of the expected 4.00am finish. Fieldworkers' crowding scores indicated they were quiet in the extended hour period (see Table 2). Three of these four visits took place in December when venues would expect to be busy on the approach to Christmas. In G3, a fieldworker observed that the 4am close was advertised on venue screens, which suggested that the decision to close at 3am had been made in response to low footfall on the night, rather than in advance. In G4, a fieldworker who had experience as a door steward observed that patrons were not allowed to enter the venue after 2am on both visits:-

G3 Club closed at 3am, expected finish 4am

(02:30 [i.e. 2.30 am]) The venue was at about 40 % (occupancy) and people were gradually leaving so G3 decided to close at 3am due to lack of footfall. This is despite the TV screen advertising a 4am close and this being advertised on their website. [Visit 1, 24 November, Fieldworker 1 (F1)]

G4 Club closed at 3.30am, expected finish 4am

(03:30) DJ stopped the music, and lights were switched on. Security personnel (made) a clear announcement to begin exiting the venue. Bar

staff (had) already concluded their services for the night. We observed (at) 2 am the venue gate was closed. From this point onward, customers were only permitted to exit the venue; no further entries were allowed. [Visit 1, 2 December, F2]

In Aberdeen, five of the ten venues closed earlier than expected on at least one occasion (A1, A5, A6, A7, A9). This encompassed a range of venues, including, a suburban traditional pub, hybrid bar / clubs and a sports bar. Most closed an hour earlier and fieldworkers' 'crowding' scores indicated they were extremely quiet during the extended hours (see Table 2).

Three venues (A5, A7, A9) closed early on both visits. A5 and A7 were medium sized, hybrid cocktail bar / clubs which closed around an hour earlier than expected. In A5, fieldworkers noted that customers often only stayed a short time in the venue and that customer levels peaked around midnight. A9 was a sports pub with live music which closed at 1am instead of 3am on both visits. Fieldworkers noted that occupancy declined after the musician finished his set at midnight:-

A5 Bar / club closed at 1.40am on Friday and 2am on Saturday (expected 3am).

(23:42) 70 % (occupancy). The rate of people coming in and out is always really high seems like.. a practical spot for drinks, (not) an end destination. (00:15) (occupancy) goes down to 25 % (01:00) 8 % now. ... I see almost no drinks being ordered. (01:42) (Fieldwork partner) asks the bartender when they're closing and he responds 'At 2am' (01:50) The venue is practically empty and I notice that the DJ has also left. (Visit 2, 24 February, F3)

A9 Pub / club closed around 1am instead of expected 3am on both visits

(22:30) (Occupancy) 100 %, the bar is packed, and it is hard to move around. There is a performer on the stage ...The music is extremely loud and there is multicoloured lights flashing (23:57) Performer finishes. people leave the dance floor and go back to their seats. (00:12) Bar is very crowded however .. (occupancy of venue) down to 60 %. (00:26) The door staff enters the venue and goes around each table telling them it is last orders. (Visit 2, 17 February, F4)

Venues using extended hours but lower occupancy on at least one visit

In Glasgow, three of the five clubs used their extended hours. G1 remained open until 4am, as advertised, on both main visits. On a visit in November, fieldworkers reported that customer levels fell from 1.30 onwards and that staff seemed bored and irritated by the few customers left. In contrast, G2 and G5 advertised a 5am close with high-profile guest DJs in December. (Venues can apply for additional extensions to hours during the festive period). These were the only occasions when the busiest part of any Glasgow venue was scored as crowded (i.e. 4 'feels crowded' or 5 'extremely difficult to move') by both fieldworkers across the night. However, on another visit in December, both G2 and G5 were extremely quiet when fieldworkers arrived, and again during the extended hours, demonstrating how occupancy can vary dramatically across different nights. On the quiet night, G2 had a resident (rather than a high-profile guest) DJ, while in G5, customer levels reduced at 3am after the guest DJ finished their set:-

G2 Club closed at 4am as expected but quiet from 3am

Resident DJ tonight .. The club is extremely empty when we enter and while it does pick up slightly, it is quite a quiet night overall. (23:40) The staff look quite bored and aimless. Some staff .. told to finish, as I then notice them (being) given a drink.. The club was busiest at 1.30am with between 140ish (customers).. (it) never at any point felt 'full', with only around 30-40 % (occupancy) at its busiest point... (03:00) Approx 60 - 80 people, 30 or so at 4am.. There are points in this observation period where the bar is completely empty. (Visit 1, 2 December, F5)

G5 Club closed at 5am (festive license extension) as expected

but quiet from 3am onwards

(23:50) The total number of people is 15.. (02:50) The crowd was at its max of almost 300. ...and the bar was crowded... (03:02: Guest DJ finishes) Music suddenly stopped... Although lights were not on, people started leaving (03:05) Music resumed. Dancefloor dropped to around 200. ... (03:28) 12 people at the bar (04:10) 50 people dancing and 5 people at the bar ordering Jaeger bombs (Visit 2, 8 December, F6)

In Aberdeen, five of the ten venues used their extended hours on both visits (A2 until 1am, A3 and A4 until 2am, A8 and A10 until 3am; see Table 2). On the busiest nights observed, two of these venues (A4 and A10) were scored as ‘crowded’ and estimated to peak at 80 % occupancy, although customer levels were reported to fall sharply after 1am. A8 was unusual in maintaining high occupancy; this was the only occasion when the busiest part of an Aberdeen venue was rated as ‘crowded’ by both fieldworkers across the night.

Fieldworkers noted that most Aberdeen venues which used their extended hours were particularly quiet on at least one visit. Occupancy on these quieter nights peaked at 60 %, and the extended hours period was assessed as 40 % occupancy or lower. In particular, venues A2 and A3 were rated as very quiet during their extended hours. Fieldworkers commented on the lack of footfall (A2: “there are now six clients in the

venue”; A4: “Definitely the quietest night I’ve observed so far”; A10: “we are two out of three people in the main area of the bar”). The excerpts below demonstrate that, due to the lack of patrons, staff were reported to stop working or leave the bar unattended (A2) and were able to remember fieldworkers’ drinks order (A3).

A2 Local pub closed at 1am as expected.

(22:40) 40 % (occupancy) (23:21) Younger staff is let off by the manager, who is now the only member of staff working. Younger member .. sits at the bar and orders a drink. (00:06) 10 % (occupancy), 95 % of clients are showing high signs of intoxication. Slumping over, swaying, hazy eyes, using people or tables to support themselves, slurred words...(00:27) Manager looks around the room before leaving out the back for a vape. He leaves the bar unattended.. This could be because there has been next to no drinks ordered in the last half hour... There are now 6 clients in the venue. (Visit 1, 10 February, F4)

A3 Bar / club closed at 2am as expected

(22:30) 40 % occupancy .. Constantly about 6–8 people standing at the bar, usually men above 60 (years) who were drinking on their own. (00:09) 25 % (occupancy)... When we went up to get our second drink .. the male bartender said “two coke zeros?” (showing) that it’s been a fairly quiet night .. enabling the bartender to remember our drink order.

Table 2

Observation of entry to venue, staff practices, crowding and closing time.

Venue	ENTRY			STAFF PRACTICES		CROWDING		CLOSING TIME	
	CCTV	N door staff	Intox ^a customers allowed entry? v1 / v2 ^b	Intox customer order drink?- Staff action? v1 / v2	‘Shot girls’ v1 / v2	Crowding ^c at previous closing time ^d v1 / v2	Crowding in new extended ^d hrs v1 / v2	Extended hours granted v1 / v2	Actual closing time v1 / v2
G1	Y	2–3	N / N	Y – no action / Y – no action	N / Y	3.5 / 5.0	2.5 / 3.5	0400 / 0400	0400 / 0400
G2	Y	2–3	N / N	Y – no action / Y – no action	N / N	3.0 / 4.5	3.0 / 5.0	0400 / 0500	0400 / 0500
G3	Y	2–5	Y / N	Y – no action / Y – refused service but allowed to stay	Y / Y	3.5 / 4.0	— / 2.5	0400 / 0400	0300 /^e 0330
G4	Y	5–8	N / N	Y – no action / N	N / N	2.5 / 1.0	2.0 / 1.0	0400 / 0400	0330 / 0300
G5	Y	2	N / N	Y – no action / Y – no action	N / N	5.0 / 3.0	5.0 / 2.0	0500 / 0500	0500 / 0500
A1	Y	0	N / N	Y – no action / Y – no action	N / N	1.0 / 1.5	1.0 / —	0100 / 0100	0100 / 0000
A2	Y	0	N / N	Y – no action / Y – no action	N / N	1.5 / 2.0	1.0 / 1.0	0100 / 0100	0100 / 0100
A3	Y	2	N / N	Y – refused service & asked to leave / Y – no action	N / N	1.0 / 2.0	1.0 / 3.0	0200 / 0200	0200 / 0200
A4	Y	1–2	N / N	Y – refused service & allowed to stay / Y – no action	N / N	4.0 / 3.0	3.0 / 2.0	0200 / 0200	0200 / 0200
A5	Y	2–3	N / N	Y – no action / Y – no action	Y / Y	1.5 / 1.5	1.0 / 1.5	0300 / 0300	0140 / 0200
A6	Y	1–2	N / N	Y – no action / Y – refused service & allowed to stay	Y / Y	4.5 / 2.5	3.0 / 1.0	0300 0300	0300 / 0230
A7	Y	1–2	N / Y	Y – no action / Y – no action	Y / Y	1.5 / 1.0	1.5 / 1.0	0300 / 0300	0200 / 0200
A8	Y	2–3	N / N	Y – no action / Y – refused service & asked to leave	Y / Y	4.0 / 3.0	4.0 / 3.5	0300 / 0300	0300 / 0300
A9	Y	1	N / N	Y – no action / Y – no action	Y / Y	3.0 / 3.0	— / —	0300 / 0300	0100 / 0100
A10	Y	2	N / N	Y – no action / Y – no action	Y / Y	4.0 / 3.5	3.5 / 3.0	0300 / 0300	0300 / 0300

^a Intox = intoxicated.

^b v1 = visit 1 to venue, v2 = visit 2 to venue.

^c Crowding = mean fieldworkers’ score of crowding in the busiest area of the venue excluding the dance floor, rated from 1 “extremely easy to move, lots of space” to 5 “extremely difficult to move”.

^d In all Glasgow venues (G1 to G5), crowding was measured between 2am – 2.30am (previous closing time) and between 3am – 3.30am (new extended hours). In Aberdeen, crowding in A1 and A2 (pubs) was measured at 11.30pm – 12 and 12.30am to 1am, and in the remaining venues at 12 – 12.30am and 1 – 1.30am. Where venues closed before measurements could be recorded, this is indicated by —.

^e Bold text indicates venues closed early and so were not fully using extended hours.

(01:00) 25 % (occupancy). DJ announced "Remember we're here until 2am!" (Visit 1, 9 February, F7)

Security and interactions with intoxicated patrons

Presence of CCTV and door staff

CCTV (or signs about its presence) was noted at all venues in both cities (see Table 2). Door staff were observed at all five Glasgow clubs; fieldworkers reported every venue had at least two on the door, and that some had more (G3 had up to five and G4, the largest venue in the sample, had up to eight). Door staff were not required in Aberdeen until 23.00; whilst fieldworkers arrived earlier than this, all but two venues (A1 and A2: pubs in the suburbs) already had door staff present.

Venue staff and intoxicated patrons

Fieldworkers observed door staff allowing apparently intoxicated people entry in only two venues, one in each city (G3 and A7). However, the opportunity to witness this behaviour was limited due to the short time fieldworkers waited in queues. In Aberdeen, one fieldworker observed "three guys stumbled their way through the entrance (of bar A7). They seemed a bit tipsy.. one of them shouting something loudly as I exited the taxi (22:30, Fieldworker F10). In Glasgow, one fieldworker reported observing a 'stumbling' young woman entering a club (G3) and being served at the bar, still appearing intoxicated:-

G3 Club

(22:50) She was stumbling around and had to link arms with her friend to keep straight. I also witnessed (her) put down an empty bottle of vodka.. before approaching (venue), suggesting she had been drinking it in the taxi. The venue checked all their ID and let her in. (01:26) I witnessed the (same) blonde girl ..being served another venom drink at the bar. She seemed intoxicated based on the way she was still stumbling .. and, as security were patrolling, this would have been clear. She was served again at 02:12. (Visit 1, 24 November, F1)

At least one fieldworker in each team reported observing intoxicated people being served at the bar in every venue in the study. At two clubs in Glasgow (G3 and G5), more than one observer reported this on both main visits:-

G3 Club

Several people appeared to be visibly unwell, can't open their eyes or stand steadily but still being served. (Visit 2, 16 December, F6)

G5 Club

The staff were well behaved but .. drunk customers were still being served. (Visit 1, 2 December, F8)

A1 Local pub

Two women came up to the bar and were intoxicated, raised voices and slurred words, but they got served anyway.. A man who was playing darts came up to the bar and got served. As he was walking away, he was wobbling around (Visit 1, 24 February, F9)

A2 Local pub

There is an older gentleman at the bar - late 40 s. He is swaying at an extreme level and leaning heavily into people when talking to them, where he is slurring his words. He orders another drink, and the manager serves him with no problem. (Visit 1, 10 February, F4)

Fieldworkers observed shot sellers ('shot girls' and very occasionally 'shot guys') directly approaching customers, including on the dance floor, in eight venues (see Table 2). (Shot sellers are common in many UK cities, are usually hired by external agencies and tend to work on commission). This occurred in both cities but was more common in Aberdeen, and was observed in every hybrid bar / club. 'Shot girls' were often dressed distinctively ('wearing black dresses and heels', 'lingerie

shot girls', branded clothes) and carried brightly coloured drinks on a tray ('colourful shots in tall chemical vial style glasses', jaeger bombs, 'test tube shots of Tequilla Rose').

Fieldworkers noted several strategies used to increase sales. Shot sellers were very persistent ('very forward', 'pushed the shots persistently' 'offered a shot 7 times in our first hour', 'offered shots about every 10 min', 'came over to us at least 4 times within the first hour') in almost every venue in which they were observed. They offered reduced price shots at the end of the night (G3), and were observed telling customers they needed to sell their shots before they could finish their shift (e.g. "The shot girl is going around begging the remaining people to buy her last shots - 'I can't go home if I don't sell everything' A6). In some venues, other members of staff (e.g. DJs, hostesses) were involved in the sales effort, promoting the price of shots, offering free shots or competitions to raise the profile of these drinks, publicly challenging shot girls to sell their remaining drinks (A7, A8, A9) and downing shots with customers (A8). Fieldworkers also reported that shot sellers targeted intoxicated customers:-

G3 Club

(02:33) Two 'shot girls' wearing black dresses and heels going around selling £3 shots.. They were operating away from the bar, bringing drinks to customers directly on the dancefloor. .. They were sociable, engaging but very forward with customers to get them to buy shots. (03:01) One of the shot girls made a deal to sell her last 4 test tube shots to a young male.. for less than the standard rate .. He agreed and shared them with his friends who were already intoxicated (Visit 1, 24 November, F1)

A6 Bar / club

(23:16) The closest people to me .. are a trio of male friends (aged c25). I see guy1 playing pretend fight with guy2. At one point guy1 grabs neck of guy2 with really strong grip, staring him into the eyes. I get alarmed for a second, but after some moments guy 2 smiles/laughs a bit and then guy1 follows. Shot girl passes by and offers shots to the guys. They buy one each with no hesitation, even though they were already drunk. (Visit 1, 10 February, F3)

A8 Bar / club

Approaching midnight, the dancefloor erupted once more, with people seemingly more inebriated than before. The DJ challenged the shots lady to sell her entire stock in record time, which she accomplished with ease (Visit 2, 16 February, F10)

A9 Bar / club

(23:26) Shot girl makes her way around the room and is stopped by a woman (Customer) attempts to count the number of people at her table .. fails twice before loudly exclaiming '6 shots please!'. (She) is swaying and uneasy on her feet (23:49). The shot lady re-approaches the table of 6 boys to gift them 2 free shots. One boy talks to the shot lady for a minute... Shortly after this the boy dips his head .. and vomits on the floor. (Visit 1, 9 February, F4)

In contrast, fieldworkers also reported observing bar staff refusing service to intoxicated patrons in one club in Glasgow (G3) and four venues (pubs and bar/ clubs) in Aberdeen (A3, A4, A6, A8). This behaviour was reported independently by both fieldworkers for A6 and A8. Generally, customers were allowed to stay in the venue after being refused service, but in two venues in Aberdeen, customers were asked to leave because they appeared to become violent or behave erratically. In A3, a fieldworker reported that a group of young people were refused service and asked to leave after a fight broke out between two women in their group. In A8, a young, apparently intoxicated man was refused service and left the venue after being spoken to by security:-

A3 Pub

(23:30) Group of about seven under 25's started raising their voices at each other.. .. (I) saw one of the girls lashing out at another. I then saw

both security guards grab one girl each and they escorted them outside. The girls didn't look like they were resisting this but the security were holding onto the girls as they were still shouting. (Visit 1, 9 February, F7)

A8 Bar / club

(23:26) (Young man) appeared to be on his own and was holding a pint of beer. He was wearing a long green coat and was stumbling around, eyes unfocused – appearing intoxicated – and dancing with strangers on the dancefloor. He also kept trying to go up to talk to the host. (00:02) He again spoke to the hostess .. I then noticed the hostess talking to a member of security and pointing .. Security went to speak to him, taking him outside, before the customer came back in to get his rucksack and left by himself. (Visit 2, 16 February, F1)

Discussion & conclusion

This study makes a unique contribution to the literature by directly observing how licensed premises use extensions in late-night alcohol trading hours in practice and collecting rich qualitative data to provide context. We found that half of the venues we sampled in two Scottish cities were not using all of the later alcohol trading hours they had been granted, during at least one fieldworker visit. Those venues which did use their extended hours were reported to be at low occupancy on at least one visit. Fieldworkers observed bar staff serving alcohol to apparently intoxicated customers in every venue. In half of the venues, they reported 'shot girls' using a range of sales strategies including persistently approaching customers who appeared to be intoxicated. However, fieldworkers observed only a few instances of intoxicated customers being permitted to enter venues and also reported occasional examples of customers being refused service. This is notable, given that many studies have described the ubiquity of venues serving alcohol to intoxicated patrons (Andreasson et al., 2000; Bellis & Hughes, 2011; Buvik & Rossow, 2015; Nicholls & Morris, 2014; Tutenges & Böhling, 2019).

The assumption that extending late-night opening hours and investing in the night-time economy will create economic and cultural growth and a rarely defined, perhaps more moderate, 'European' pattern of drinking has driven the liberalisation of planning and licensing laws in the UK over recent decades (Tutenges & Böhling, 2019). For example, a recent City of Glasgow Licensing Policy (City of Glasgow Licensing Board, 2023) promotes a "more balanced relationship with alcohol, encouraging a new 'European Approach' to drinking and socialising through outside areas promoting a café style ambience and extended hours". In addition, the UK Government is currently considering extending opening hours for pubs and bars in England and Wales, welcoming a licensing taskforce report which argues for further deregulation as a "pro-growth vision for licensing reform" which "reduces unnecessary burdens and empowers local areas to unlock the full potential of their hospitality, cultural and night-time economies" (Department for Business & Trade, 2025; Nicholls & Fitzgerald, 2025). However, our findings challenge the assumption that businesses and consumers want extended trading hours. The pragmatic response of some venues to low demand was to close early, given that the staff and operating costs of extended trading hours may not be recouped. An observational study of venues across five Australian cities also found that customer levels fell later at night, peaking at 11pm in bars and 1am in clubs (Coomber et al., 2017). Our interview data from another strand of the ELEPHANT project found some venue managers were concerned about whether the costs of extended trading hours would bring sufficient benefits (Mitchell et al., 2025), while others welcomed the opportunity. This split in trade stakeholder views reflects competing interests within the commercial sector which have been reported elsewhere (Hector et al., 2019; Holden et al., 2012), suggesting a more diverse response to changes in licensing than is often portrayed.

Fieldworkers' observation of the sale of alcohol to apparently

intoxicated customers in every venue in the study is concerning, particularly given that the Glasgow extended hours pilot was explicitly intended to 'reward and encourage good practice in the nightclub trade' (City of Glasgow Licensing Board, 2018). Other studies have found that intoxication levels for patrons in bars and clubs increase across the night, particularly after 1am (Coomber et al., 2017) and that the likelihood of intoxicated patrons being served alcohol rises after midnight (Buvik & Rossow, 2015). Shot sellers, who usually work on commission, were observed persistently and repeatedly approaching customers, and appearing to target intoxicated patrons. Their behaviour must not contravene mandatory conditions about irresponsible promotions that include offering a lower price for purchasing higher volumes of alcohol. Commercial imperatives and increasing economic pressures on venues encourage promotions and behaviour that are more likely to contravene the law (Hawkins et al., 2009), and may discourage spending on staff training, venue safety and staffing levels (Bellis & Hughes, 2011), suggesting that more regular inspections may be needed by licensing officers and police. Our findings add to the literature about how nightlife workers (e.g. bar staff, DJs, comperes, tourist guides) overtly or more subtly promote drinking through charm, playfulness and flirtation, creating a party atmosphere, organizing drinking games and drinking along with customers (Coomber et al., 2016; Dumbili & Nelson, 2023; Forsyth et al., 2016; Tutenges, 2013). Our observations of the common use of 'shot girls' also demonstrate the strategic use of young women performing gendered labour to sell alcohol in sexualised social spaces (Coffey et al., 2018; Dumbili & Nelson, 2023). To our knowledge, this is the first study to highlight the work of 'shot girls' in the UK night-time economy. Further work should focus on this area.

Our observations of relatively low demand for, and use of, extended late-night alcohol trading hours in two Scottish cities should be set within the post-Covid context (when bars and clubs closed for long periods in Scotland (Fitzgerald et al., 2021)), as well as changing drinking patterns, inadequate late-night transport, increased running costs and reduced disposable income due to a cost of living crisis (Maxwell et al., 2025; Mitchell et al., 2025). It is also important to consider the segmentation of the market and the different context of each city; for example, the demand for pre-booked tickets for 'superstar DJs' in a large well known club in Glasgow, which markets itself as a 'world class' music venue, is likely to be very different to the demand to visit a local pub in the Aberdeen suburbs. There may be economic benefits from late night trading for the former, but costs for the latter. Finally, it is important to acknowledge the different spatial and temporal reach of the licensing change in each city. In Glasgow, it was confined to a one-hour extension for ten nightclubs in the city centre. In Aberdeen, 38 venues (pubs and hybrid bar/clubs) in the city centre and the suburbs received extensions of differing lengths. Indeed, our quantitative findings from the ELEPHANT study suggest the licensing changes led to an increase in alcohol-related ambulance call-outs in Aberdeen, but not in Glasgow (Sheikh et al., 2025).

Our findings have implications for local and national licensing policy. Local authorities should be sceptical about increasing late-night alcohol availability as a means of renewing high streets or the night-time economy. The consequences, including greater intoxication and rates of violence (Taylor et al., 2021) may deter other consumers from going into urban centres for entertainment not centrally focused around alcohol. Restrictions in hours elsewhere have been associated with increased footfall without affecting the number of live music performances (Ferris et al., 2021; Puljević et al., 2021). National policymakers should focus on ensuring local licensing committees have adequate power to shape which kinds of premises are granted later hours: for example, dance music venues may need later hours to attract well known DJs for ticketed events but the balance of benefit and harm in venues solely reliant on alcohol consumption for revenue may not justify extensions to late-night trading.

Using unobtrusive systematic observation was a strength of the study which enabled us to collect data which could not be gathered in other

ways. Surveys or interviews with venue goers and staff raise the potential of social desirability or recall bias (and in the former group, the influence of intoxication) (Petticrew et al., 2007). Australian colleagues also noted that when they sought venue permission for observation studies, venues with worse patron behaviours and level of harms were more likely to refuse (Coomber et al., 2016). Following Petticrew et al. (2007) we suggest that the value of directly observing behaviour in public places outweighs the possibility of harm to customers or staff in venues. Potential harms to fieldworkers were mitigated through initial 'recce' visits, safety protocols, in-depth training, roleplaying common situations, debriefs where we discussed any problems or tensions and recruiting fieldworkers with experience of working in the night-time economy. This paid dividends during fieldwork when fieldworkers who had previously worked behind the bar in clubs or as security in clubs brought additional insights to our data. We enhanced the quality of our data through using established methods, in-depth training, learning from our fieldwork in Glasgow and applying this to Aberdeen, using pairs of fieldworkers to independently collect data, and conducting repeated observations. We asked fieldworkers to observe venues until closing time, allowing a longer period of observation than in many other studies. We also sampled a broad range of venues, by size, level of deprivation of venue area and type. Finally, we deliberately sampled venues which advertised their extended hours (as they were more likely to be using these hours than venues that did not), giving our findings extra weight.

Limitations include the timing of our observations, which took place in the busy festive period in Glasgow, compared to February and early March in Aberdeen, which are much quieter. However, Glasgow venues closed early or were not at full occupancy on at least one visit, even during the busier festive period. Other limitations include fieldworkers using their best estimate of venue crowding rather than an actual count. Although venues were carefully selected, they may not represent general practice. Similarly, observations on weeknights may have resulted in different findings; we chose to focus on weekends which are busier and more often associated with alcohol-related harm (Coomber et al., 2016). Finally, there were important contextual factors which we could not observe, such as staff training.

In conclusion, late night alcohol trading hour extensions granted in two Scottish cities were not being used consistently by venues due to lack of demand from customers. The late-night sale of alcohol to intoxicated customers was commonplace, with few exceptions. Our findings question the idea that the liberalisation of late-night alcohol availability can be justified on grounds of economic benefit, and highlight the likelihood of associated harms arising including greater intoxication.

Submission declaration

- The work described has not been published previously.
- The article is not under consideration for publication elsewhere.
- The article's publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out.
- If accepted, the article will not be published elsewhere in the same form, in English or in any other language, including electronically, without the written consent of the copyright-holder.

Funding

This project is funded by the National Institute for Health and Care Research (NIHR) [Public Health Research programme (129885)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Data statement

Our research data includes sensitive information which could identify the venues in our sample, so our data are not publicly available.

CRedit authorship contribution statement

Carol Emslie: Writing – original draft, Supervision, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Karen Maxwell:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Rachel O'Donnell:** Writing – review & editing, Methodology, Conceptualization. **Gemma Mitchell:** Writing – review & editing, Methodology. **Megan Cook:** Writing – review & editing, Methodology. **Isabelle Uny:** Writing – review & editing, Methodology. **James Nicholls:** Writing – review & editing. **Jim Lewsey:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Emma McIntosh:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Colin Angus:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Andrea Mohan:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization. **Niamh Fitzgerald:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Thank you to our excellent and committed fieldworkers (Zainab Alrikabi, Desmond Areghan, Annamae Burrows, Fred Byrne, Matthew Corcoran, Calum Garvie, Giulia Giuliani, Rebecca Johnson, Ukegbu Kalu, Zuzanna Kotowska, Rowan Morgan-Paulson, Lara Nicolis, Ghassan Saab, Emma Swanson, Lily Tait, Ekpe Ukpe) and to Amy Kennedy McEwan for her help with coding.

We would like to acknowledge the substantial contribution of our NIHR Steering committee particularly Zara Quigg, Kathryn Graham and Peter Miller, and the important input from our public involvement groups in Glasgow and Aberdeen. We would also like to thank Crew 2000 for help with training and Karen McDairmant and Rebecca Rae for supporting fieldworker recruitment. Many thanks also to Elaina Smith, NHS Greater Glasgow and Clyde, for very helpful conversations about licensing.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.drugpo.2026.105210](https://doi.org/10.1016/j.drugpo.2026.105210).

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