

October
2018



Evaluation of Liverpool's Drink Less Enjoy More intervention 2017 Progress and findings to date

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Acknowledgements

We would like to thank everyone who contributed to the implementation and evaluation of the Drink Less Enjoy More intervention. In particular, we would like to thank the actors who supported the implementation of the pseudo-intoxicated actors study and all nightlife users who participated in study surveys. Our thanks also go to the intervention and evaluation funders: Liverpool City Council Public Health, and CHAMPS Public Health Collaborative. Finally, we would like to thank LJMU colleagues who supported the research fieldwork, and or report production: Hannah Grey, Charlotte Bigland, Claire Poole, Emma Begley, Laura Heeks, Carey Owen, Georgia Saye, Zoe Swithenbank, Tazmin Wilkins, Ntaganira Anne-Marie Dukuzimana, Rachel Kotey, Jane Sam-Brew, Bevis Phiri, and Collette Venturas.

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Executive summary

High levels of drunkenness and intoxication have characterised UK nightlife environments for many years [1]. Studies across various cities have shown that most nightlife users expect to reach a high level of drunkenness on a night out, find getting drunk to be socially acceptable and believe most other nightlife users also reach a high level of drunkenness [2, 3]. This is despite the existence of legislation, which makes it an offence to knowingly sell alcohol to, or purchase alcohol for, someone who is intoxicated [4]. For many years, however, bar staff and public awareness of this legislation has been low, and there is evidence to suggest such laws were routinely being broken [5, 6].

Efforts to address cultures of drunkenness by increasing bar staff compliance with the law and public awareness of it, have been made in recent years by Liverpool City Council (and partners) with the implementation of the community-based multi-component intervention Drink Less Enjoy More (DLEM; branded Say No To Drunks [SNTD] during the initial pilot phase). Since its inception in 2014, DLEM has been evaluated at several time points to inform its development and monitor progress [2, 3, 7]. This report presents data from the most recent wave of evaluation in 2017 and provides comparisons across evaluation time points.

Methods

Alcohol test purchase attempts: Alcohol test purchases were made by pseudo-intoxicated actors across five nights (Wednesday - Sunday) in on-licensed premises in Liverpool City Centre's main nightlife area: pre-intervention (2013) and post-intervention in 2015, 2016 and 2017.

Nightlife user survey: A short anonymous survey was conducted opportunistically with users of Liverpool's night-time economy on a Friday and Saturday night, pre-intervention (2014) and post-intervention (2014, 2015, 2016 and 2017). The survey explored: awareness of alcohol legislation; nightlife drinking behaviours; and expectations and tolerance of nightlife drunkenness. Participants were also asked about their awareness and perceptions of DLEM, potential behaviour change as a result of the intervention and knowledge of the law. Further, as part of a broader study to understand the nature and extent of alcohol-related harms occurring amongst nightlife users whilst visiting nightlife settings across Cheshire and Merseyside, in 2017 participants were also asked whether they had experienced a number of adverse events on nights out in the area in the previous three months, including assaults, vomiting and being asked to leave or refused service at a venue.

Key findings

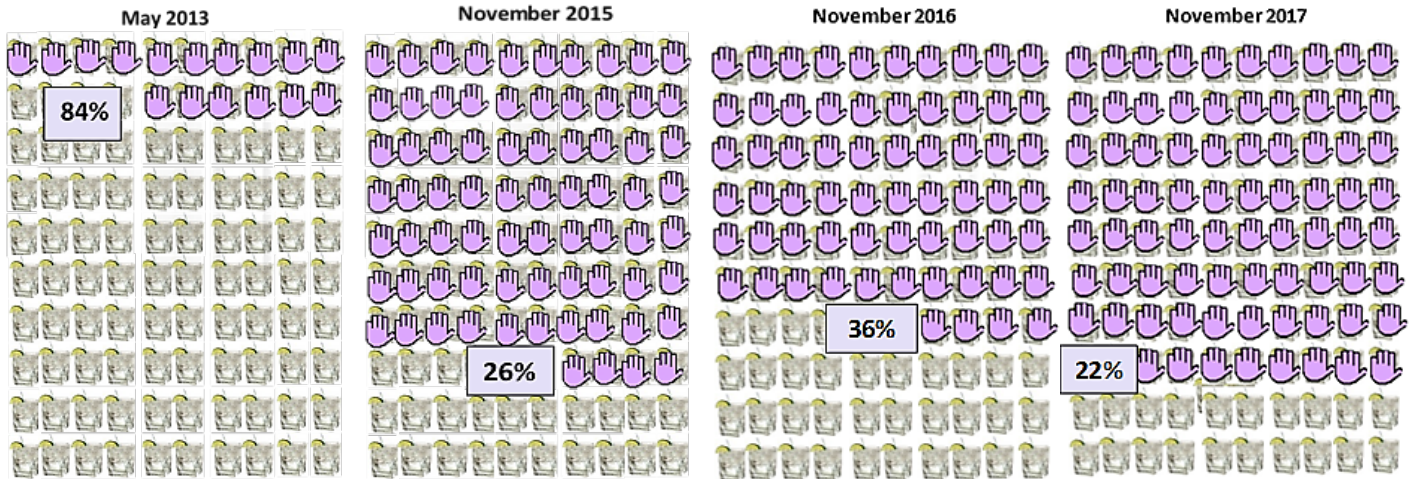
Comparisons across SNTD and DLEM evaluation waves

Bar staff propensity to serve alcohol to pseudo-intoxicated actors

- There was a significantly different rate of service of alcohol to pseudo-intoxicated actors across the four years test purchases were conducted, with the highest proportion of successful attempts during the pre-intervention test purchases (May 2013) and the lowest proportion of serves during the 2017 post-intervention test purchases (November 2017) (Figure A).

- Further, the service rate in November 2017 was also significantly lower than the previous year (November 2016).

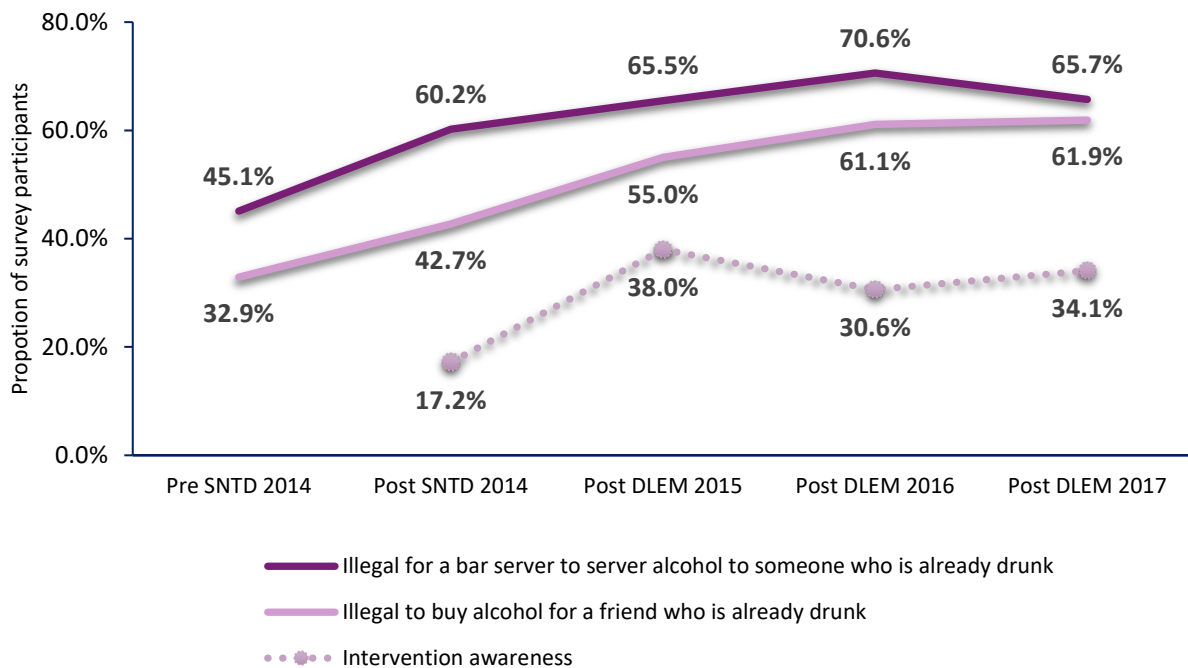
Figure A: Bar server propensity to serve alcohol to pseudo-intoxicated actors; pre 2013, and DLEM post 2015, 2016 and 2017



Knowledge of the law and awareness of the intervention

- There was a significant difference in knowledge of the law around purchasing alcohol for a friend who is already drunk between each survey wave, with an incremental increase between each survey wave from the 2014 pre-intervention survey to the 2017 post-intervention survey (Figure B).
- There was also a significant difference between each wave of the survey in knowledge of the law around a bar server selling alcohol to someone who is already drunk, with an increase from the pre-intervention survey to each of the post-intervention surveys.
- Across survey waves, there was a significant increase in awareness of the rebranded DLEM (2015, 2016, 2017) intervention compared to awareness of the SNTD pilot intervention (2014) (Figure B).

Figure B: Intervention awareness and knowledge of the laws on the sale of alcohol to, and purchasing of alcohol for drunks, SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017, nightlife user survey comparisons

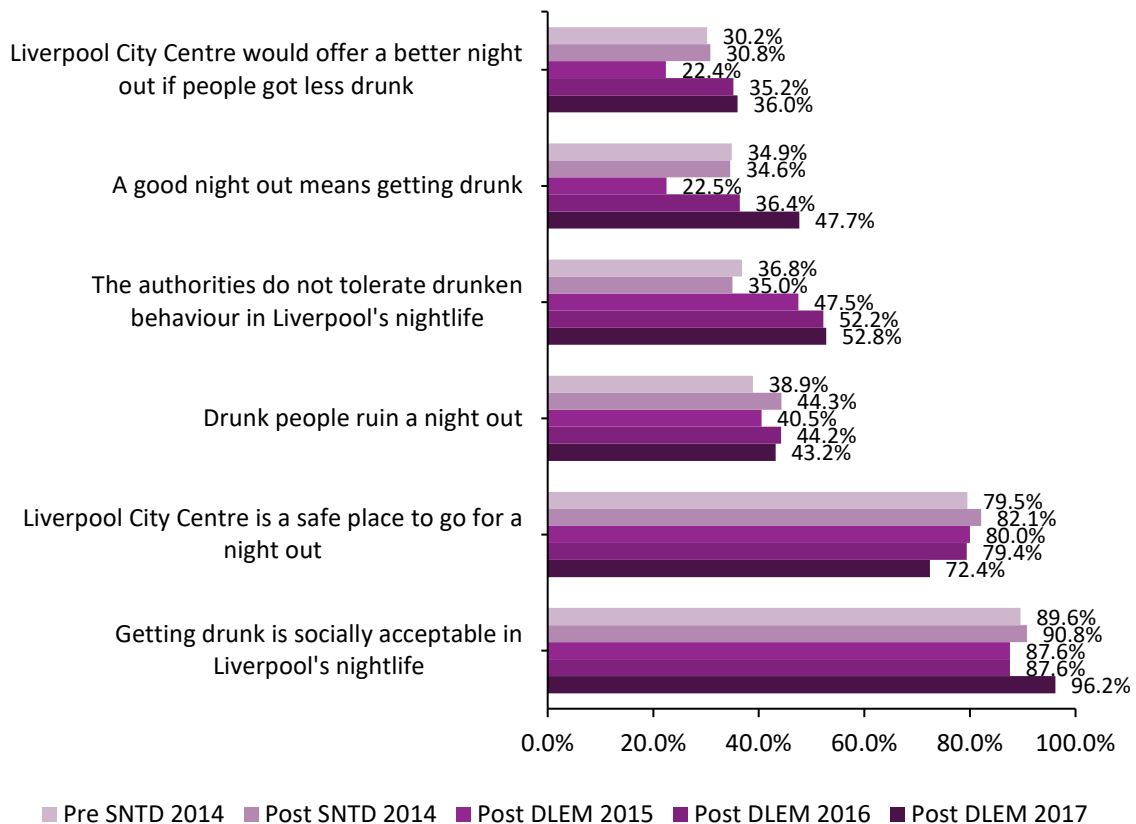


Cultures and acceptability of drunkenness

- Participants were asked how much they agreed or disagreed with a number of statements relating to Liverpool’s night-time economy and drinking behaviour using a five point scale from strongly agree to strongly disagree (Figure C).
- There was an incremental increase in the proportion of participants agreeing¹ with the statement ‘the authorities do not tolerate drunken behaviour in Liverpool’s nightlife’ (Figure C), with a significantly higher proportion of 2017 post-intervention survey participants agreeing than in the pre (pre, 36.8%; post 2017, 52.8%; $p < 0.001$).
- There was no significant difference across survey waves in the proportion of drinkers who reported a high (6-10) level of current drunkenness or who predicted their drunkenness level would be high when leaving the city centre’s nightlife.
- There was also no significant difference across survey waves in how drunk all participants perceived other night-time users to typically be. However, the perceived mean level of drunkenness of other patrons in the city’s nightlife was significantly lower in the post DLEM 2017 survey than in the pre (pre SNTD 2014, 8.6; post DLEM 2017, 8.0; $p < 0.01$).

¹ Including strongly agree and agree.

Figure C: Proportion of participants agreeing¹ with selected statements on drunkenness, SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017, nightlife user survey comparisons



Alcohol consumption

- Of drinkers who had consumed alcohol between 10pm and 1.59am²:
 - There was a significant difference between survey waves, in the proportion who reported preloading (i.e. those who drank at home or a friend's house prior to entering the night-time economy), with the lowest proportion of preloaders in the 2016 survey (pre 2014, 63.0%; post 2014, 53.1%; post 2015, 62.9%; post 2016, 42.2%; post 2017, 51.6%; p<0.01).
 - Significantly higher proportions of drinkers had consumed alcohol in a city centre venue by the point of the survey in the post-intervention surveys than in the pre (pre 2014, 82.1%; post 2014, 84.8%; post 2015, 95.8%; post 2016, 94.2%; post 2017, 87.8%; p<0.001).
 - There was a significant difference in the number of units consumed in city centre venues across survey waves, with the highest number of units reported in the 2014 post-intervention survey and the lowest in the post 2016 survey (post 2014, 7.7; post 2016, 5.0).

² Due to the significant differences between survey waves in the time at which surveys were conducted, analyses were limited to include only surveys conducted between 10pm and 1.59am, to allow more accurate comparative and trend analysis of alcohol consumption across survey waves.

Nightlife user survey 2017 key findings

- Over the course of the entire night out, participants who were males, aged 22-29 years, non-students, non-Liverpool residents and preloaders expected to consume significantly more alcohol units, than their counterparts.
- Nightlife users were asked a range of questions about alcohol-related harms they experienced on, or after a night out in Liverpool City Centre in the past three months. The proportion of participants reporting each harm varied with: 35.1% reporting vomiting; 30.6% reported having been so drunk they needed assistance to walk; 25.4%, a serious verbal argument; 15.7%, an injury; 14.2%, a sexual assault (including unwanted touching/harassment); and, 13.4%, a physical assault (i.e. fight).
- Nightlife users were also asked about their behaviours while out in the night-time economy in the past three months with: 15.7% reporting being refused entry to a venue; 10.4% asked to leave a venue because they were too drunk; 9.7% refused service of alcohol at the bar; 4.5% had asked a friend to purchase alcohol for them as they were too drunk to get it themselves; 36.6% had tried to appear sober to gain entry to a venue; and, 26.9% had tried to appear sober to get served at the bar.

Conclusion

Liverpool's DLEM intervention has shown positive findings throughout evaluation time points over the past three and a half years. Crucially, improvements have been made and sustained in key areas such as reduced bar staff propensity to serve alcohol to pseudo-intoxicated actors and improved nightlife user knowledge of associated alcohol legislation. To date, wider impacts on nightlife alcohol consumption and drinking behaviours, and social acceptability of drunkenness have not been observed. However, changing cultures is a complex task that will inevitably be influenced by various factors at both a local and national level. Reducing alcohol access within on-licensed premises in what is a large diverse nightlife setting is a positive step in working towards achieving this goal. Continued intervention should aim to maintain reductions in alcohol access, and continue to work towards changing community level alcohol and nightlife cultures, reducing tolerance and expectations of nightlife drunkenness, and promoting a diverse, inclusive and healthy nightlife setting.

Drink Less Enjoy More (DLEM) evaluation: Liverpool City Centre

INTERVENTION

Liverpool's DLEM¹ is a community based multi-component intervention comprised of three core components; community mobilisation, responsible bar staff training and strengthened law enforcement that has been implemented in Liverpool's nightlife since 2014.

The intervention aims to reduce excessive drunkenness and alcohol-related harms amongst nightlife users through: 1) increasing awareness of, and adherence to, UK legislation, which prohibits the sale of alcohol to, and purchasing of alcohol for, drunks; and, 2) discouraging preloading of alcohol and reducing the acceptability of nightlife drunkenness.

WHAT WE DID

Nightlife user survey



Short anonymous survey conducted opportunistically with nightlife patrons aged 18+ in Liverpool City Centre's nightlife.
(Friday and Saturday nights 2014, 2015, 2016, 2017)

Alcohol test purchase attempts



Alcohol test purchases in pubs/bars/nightclubs by pseudo-drunk actors across Liverpool City Centre's nightlife.
(Wednesday-Sunday nights 2013, 2015, 2016, 2017)

Nightlife user survey - alcohol consumption patterns and cultures of drunkenness

		Proportion	Units
	Drinkers ² who preloaded before entering the nightlife area	47.2%	4.2
	Drinkers ² who en-route loaded before entering the nightlife area	16.9%	2.0
	Expected ³ total units consumed over course of the night out	N/A	18.0

Males, those aged 22-29 years, non-students, non-Liverpool residents and preloaders expected to consume more alcohol over the course of the full night out than their counterparts.



52.8% agreed⁴ that the authorities do not tolerate drunken behaviour
(Significantly higher than pre-intervention [36.8%] p<0.001)

Experience of alcohol-related harms in Liverpool's nightlife (past three months)

Vomiting 35.1%	Serious verbal argument 25.4%	Injury 15.7%
Physical assault 13.4%	Too drunk to walk 30.6%	Sexual violence 14.2%

1 Branded Say No To Drunks [SNTD] during the initial pilot phase.

2 90.0% of survey participants had consumed alcohol prior to survey participation; these were referred to as drinkers.

3 Including reported and, or expected alcohol consumption post survey.

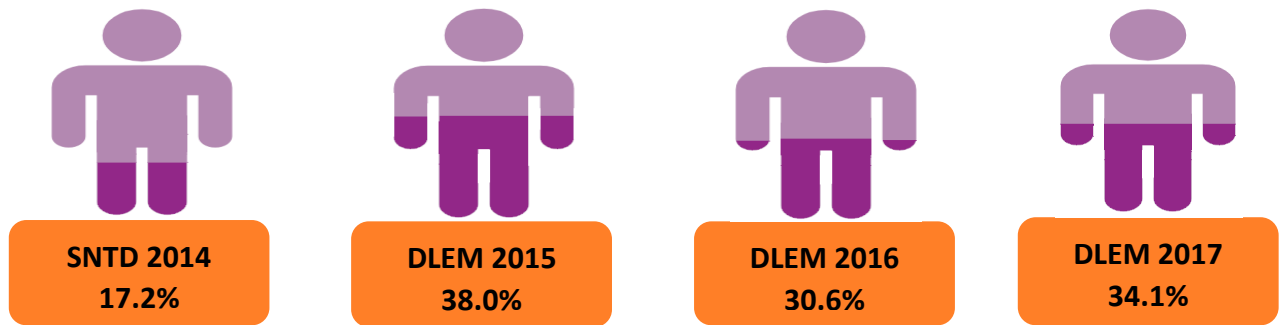
4 Including strongly agree and agree.

WHAT WE FOUND NIGHTLIFE USER SURVEY (2017)

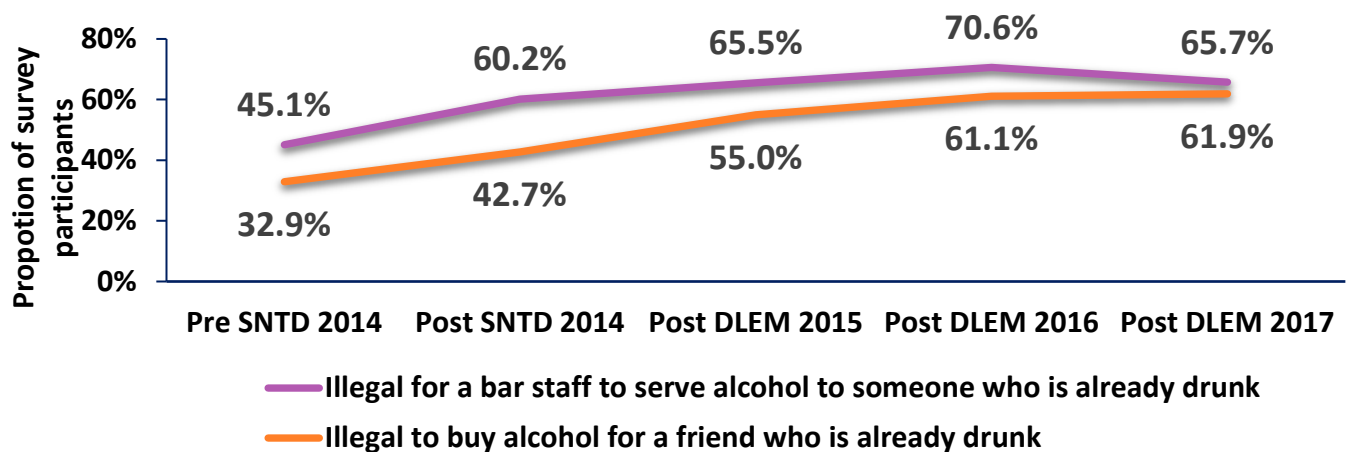
Comparison of key outcome measures

Pre (2013/2014) and post-intervention (2014-2017)

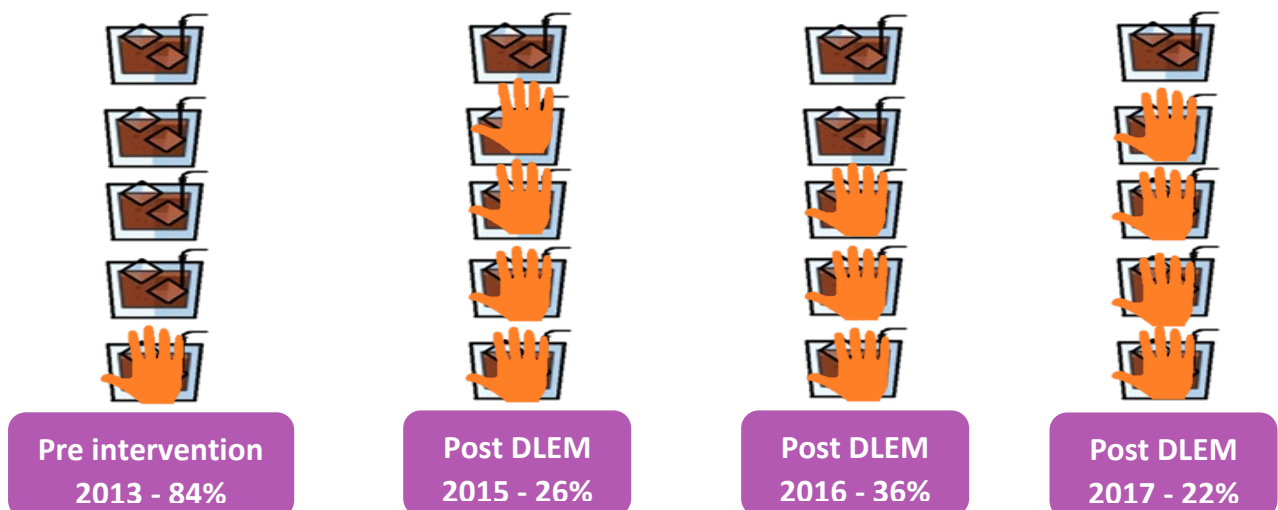
Nightlife user survey - intervention awareness



Nightlife user survey - knowledge of the UK legislation



Bar staff propensity to serve alcohol to pseudo-drunk actor



Bar staff survey 2015 (N=207)



93%
Reported feeling confident in refusing the service of alcohol to a drunk person

95%
Correctly reported that it is illegal for a bar server to sell alcohol to someone who is already drunk

86%
Correctly reported that it is illegal for a person to buy alcohol for someone who is already drunk

A report presenting the full methodology and results is available at www.ljmu.ac.uk/phi. Butler, N., Quigg, Z., Bates, R. (2018). Evaluation of Liverpool's Drink Less Enjoy More intervention 2017. Progress and findings to date. Public Health Institute, Liverpool John Moores University.

1. Introduction

The UK night-time economy has been characterised by high levels of intoxication for many years [1]. Previous research across nightlife environments in England and Wales have shown many nightlife users expect to get drunk on a night out, expect others to be drunk and find getting drunk to be socially acceptable in nightlife settings [2, 8]. Further, many nightlife users drink at home before going on a night out, often arriving into the night-time economy already intoxicated. Such studies have also shown that preloaders expect to consume a higher total number of units over the course of the night out than non-preloaders, and expect to have a higher level of drunkenness leaving the night-time economy [3]. This is despite the fact that it is an offence for bar servers to knowingly sell alcohol to, or patrons to purchase alcohol for, intoxicated individuals [4]. If such legislation was adhered to, theoretically individuals consuming high quantities of alcohol prior to entering the night-time economy would not be able to acquire more alcohol in venues. However, public awareness, bar staff compliance and police enforcement of this legislation, was low for many years [6, 5, 9].

In recent years efforts to address cultures of drunkenness by increasing public awareness of the law around the service of alcohol to drunks and supporting bar staff compliance with legislation have been made by local partners across Liverpool. The pilot Say No to Drunks intervention was developed and implemented in 2014 by Liverpool City Council. The positive findings from this initial pilot intervention and recommendations for further development, led to local partners rebranding the intervention Drink Less Enjoy More (see Box 1), and making it a core activity as part of their attempts to address nightlife drunkenness by running the intervention on a yearly basis. Over this time, findings of the intervention evaluations showed a sustained impact on bar server propensity to refuse alcohol service to pseudo-intoxicated actors. Critically, that the proportion of test purchase attempts which resulted in the sale of alcohol to a pseudo-intoxicated actor was significantly lower in both post-intervention tests (post DLEM 2015, 26%; post DLEM 2016, 36%) than in the pre-intervention test (pre SNTD 2013, 84%). Further, each post-intervention wave of evaluation showed significant increases in nightlife user knowledge of the law around the sale of alcohol to (post SNTD 2014, 60.2%; post DLEM 2015, 65.5%; post DLEM 2016, 70.6%), and the purchase of alcohol for (post SNTD 2014, 42.7%; post DLEM 2015, 55.0%; post DLEM 2016, 61.1) drunks compared to pre-intervention (2014 sale, 45.1%; purchase, 32.9%).

There were also some suggestions that levels and patterns of alcohol consumption were changing, however, further exploration of this is required to determine whether this is indeed a sustained impact of the intervention or a factor of the cross-sectional nature of the nightlife patron surveys which include different participants at each wave and which may be influenced by other environmental factors on the night (e.g. weather, sporting events). Although wider impacts of the social acceptability of drunkenness in Liverpool's nightlife (beyond the sale of alcohol to drunks) were not observed, this is a complex task that previous intervention studies have shown can take many years to achieve. These findings and evidence from elsewhere, demonstrates the importance of a long-term multi-component approach to addressing the sale of alcohol to drunks, changing levels of alcohol consumption and cultures

of drunkenness in the night-time economy. Thus, as part of the ongoing monitoring process of DLEM, Liverpool John Moores University were commissioned to implement a research study to monitor progress of key elements of the intervention.

Box 1: The Drink Less Enjoy More (DLEM) intervention

A community based multi-component intervention with two primary aims:

- To reduce excessive alcohol consumption and drunkenness; and,
- To reduce alcohol-related harms in Liverpool City Centre.

To achieve this, the intervention aimed to alter a number of intermediate factors that were likely to contribute to the overall outcome aims:

- Reduce the propensity of bar staff to sell alcohol to intoxicated individuals in Liverpool's nightlife.
- Raise nightlife user and bar staff awareness of UK laws around the sale of alcohol to, and purchasing of alcohol for, drunks.
- Reduce nightlife user acceptability of drunkenness and change social norms around drunkenness and alcohol consumption.

The intervention involved the collective implementation of three core components:

- Community mobilisation and awareness raising: creation of a multi-agency intervention steering group and implementation of a range of awareness raising activities (i.e. on alcohol legislation) targeted towards different audiences, particularly the local alcohol trade and public.
- Responsible bar server training: free provision of 30 minute face-to-face training programme for bar staff on preventing sales of alcohol to drunks, including information on: alcohol legislation and implications of flouting the legislation, and service refusal and conflict management techniques.
- Strengthened law enforcement: intensified engagement and enforcement activity by police and other partners focusing on sales of alcohol to drunks.

Implemented in Liverpool City Centre nightlife over two phases:

- Pilot Say No to Drunks: 5 weeks (2014) across ~38 on-licensed premises in one area of Liverpool's nightlife.
- Drink Less Enjoy More: ongoing since 2015 across ~250 on-licensed premises across the full nightlife environment.

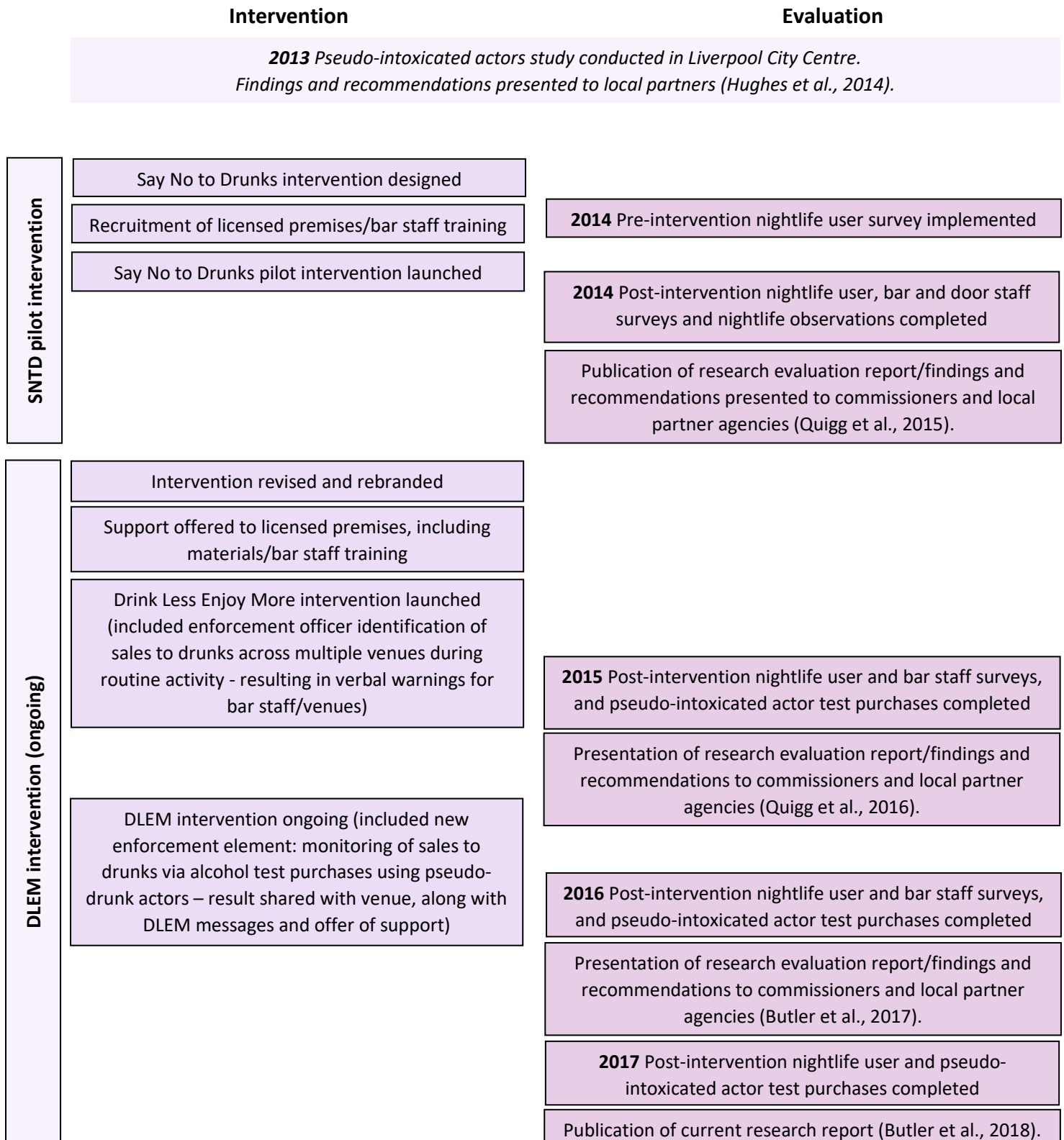
Study aims and objectives

The current study aims to continue to assess the impact of the DLEM intervention and inform its future development. The research had two core objectives, which include a range of research questions.

1. To assess the impact of the intervention on identified intermediate factors including:
 - Nightlife user awareness and perceptions of the intervention;
 - Nightlife user knowledge of the law around the sale of alcohol to, and the purchase of alcohol for, drunks; and,
 - Bar server propensity to serve alcohol to intoxicated patrons (i.e. pseudo-intoxicated actors).

2. To continue to monitor and identify:
 - Nightlife user social norms around the acceptability of drunkenness in Liverpool’s night-time economy; and,
 - Levels and patterns of alcohol consumption and drunkenness among nightlife users.

Figure 1: Say No to Drunks/Drink Less Enjoy More intervention and evaluation timeline



2. Methods

To meet study objectives and to allow comparisons with previous evaluations of Say No to Drunks/Drink Less Enjoy More, research methods used in previous evaluations were repeated [2, 3, 7].

2.1 Nightlife user surveys

A short anonymous survey was conducted opportunistically with users of Liverpool's night-time economy on a Friday and Saturday night (between 9pm and 1am) in November 2017. The survey explored: drinking behaviours; expectations and tolerance of drunkenness. Participants were also asked about their awareness and perceptions of DLEM, potential behaviour change as a result of the intervention and knowledge of the law. Further, as part of a broader study to understand the nature and extent of alcohol-related harms occurring amongst nightlife users whilst visiting nightlife settings across Cheshire and Merseyside, participants were also asked whether they had experienced a number of adverse events on nights out in the area in the previous three months, including assaults, vomiting and being asked to leave or refused service at a venue. The survey was implemented following the same protocol as previous DLEM evaluation surveys [2, 3]. Of 198 individuals approached to take part, 52 refused to participate. Throughout the explanation of the study and survey completion, researchers continued to monitor and assess participant levels of intoxication. 11 participants who had started the survey were deemed too intoxicated to continue. In these circumstances, the researchers politely ended the survey at a convenient point and thanked the individual for their time. In total, 135 surveys were included in analyses.

2.2 Alcohol test purchase attempts

In November 2017, 101 alcohol test purchase attempts were made by pseudo-intoxicated actors across five nights (Wednesday, 14; Thursday, 22; Friday, 26; Saturday, 31; Sunday, 8). The test purchases followed a similar protocol to previous pseudo-intoxicated actor test purchase studies [6, 3, 7].

2.3 Data analyses

All data was entered, cleaned and analysed in SPSS v23. Analyses used descriptive statistics, chi-squared, t-tests, one-way ANOVAs, Mann-Whitney U and Kruskal-Wallis tests. To calculate the amount of alcohol consumed by nightlife patrons, drinks were coded into standard UK units using the following conversion: small glass (125ml) of wine, 1.5 units; standard (175ml) glass of wine, 2.1 units; large (250ml) glass of wine, 3.0 units; pint of lager/beer/cider, 2.0 units; bottle of lager/beer/cider, 1.7 units; can of lager/beer/cider, 2.0 units; bottle of alcopops, 1.5 units; single (25ml) shot of spirits, 1.0 unit; and a pitcher of cocktail, 6.0 units³. Analyses examined within year (2017) trends and associations for both the nightlife user survey and pseudo-intoxicated actors test purchases. Some select additional analyses was also ran examining trends across all evaluation waves (SNTD pre and post-intervention 2014, DLEM post-intervention, 2015, 2016, 2017).

³ See <https://www.nhs.uk/Livewell/alcohol/Pages/alcohol-units.aspx>

2.4 Ethics

Ethical approval for the study was granted by Liverpool John Moores University Research Ethics Committee (REC no 15/EH/C073).

2.5 Study limitations

There are a number of limitations to be considered when interpreting the reported findings. 38.5% of nightlife users approached to participate in the survey refused, therefore the survey may not be truly representative of all nightlife users. For ethical reasons no visibly drunk individuals were invited to participate, thus the median total units consumed may represent an underestimate of alcohol consumption levels and/or patterns. The study also relied on self-reported levels of alcohol consumption which were not verified and could therefore be under or over-estimated. Whilst there were few differences in participant characteristics between the five waves of the nightlife user survey, there were differences in the proportion of surveys completed before and after midnight. A significantly higher proportion of post-intervention surveys (76.5%) were conducted before midnight compared to pre-intervention surveys (51.6%). Thus, some caution needs to be taken when interpreting the comparisons between the 2014 pre-intervention survey and the 2017 post-intervention survey findings. These differences may mean that drinking patterns and levels of consumption are affected by external factors that we cannot adjust for. For example, this may have resulted in the lower proportion of preloaders found in the 2017 post-intervention survey compared to the 2014 pre-intervention survey. Equally, however, individuals may have been entering the night-time economy earlier due to the intervention effectively communicating that already intoxicated individuals will not be served in city centre venues. To try to account for the potential impact that differences in survey time may have on alcohol consumption patterns and levels, comparisons between the five survey waves are restricted to include only surveys conducted between 10pm and 1.59am.

3. Findings

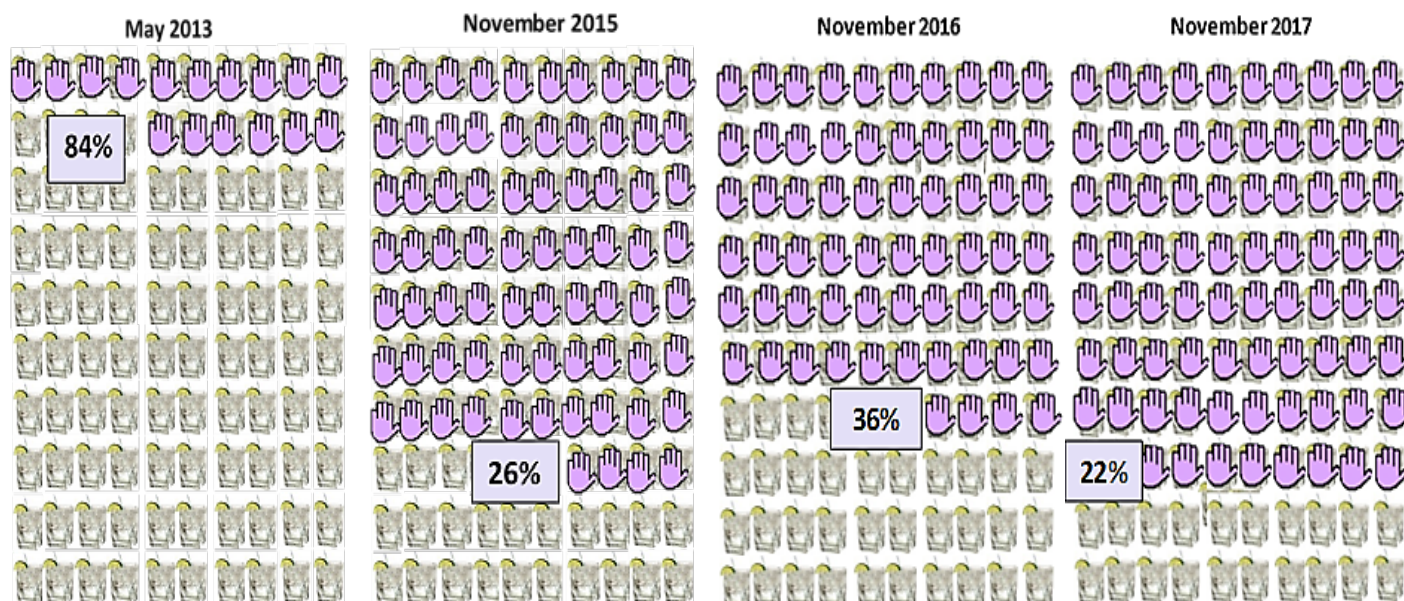
3.1 Comparisons and trends across SNTD and DLEM evaluation waves

3.1.1 Pseudo-intoxicated actor test purchases (pre 2013, DLEM post 2015, 2016, 2017)

In May 2013, 73 alcohol test purchases were made by pseudo-intoxicated actors across five nights (Wednesday - Sunday) in randomly selected venues in Liverpool City Centre. These test purchases were repeated following the implementation of the rebranded DLEM intervention in November 2015, November 2016 and November 2017.

Across the three years of post-intervention test purchases, the rate of service to pseudo-intoxicated actors was significantly lower than in the pre-intervention period, with the highest proportion of successful attempts during the pre-intervention test purchases (May 2013) and the lowest proportion of serves during the 2017 post-intervention test purchases (November 2017) ($p < 0.001$; Figure 2). Further, the service rate in November 2017 was also significantly lower than the previous year (November 2016) ($p < 0.05$).

Figure 2: Bar server propensity to serve alcohol to pseudo-intoxicated actors; pre 2013, and DLEM post 2015, 2016 and 2017



3.1.2 Nightlife user survey (SNTD pre and post 2014; DLEM post 2015, 2016, 2017)

Nightlife user survey sample characteristics

There were no significant differences in age, gender, residential status, or frequency of nights out between any of the survey waves (Appendix 1, Table A1). However, there was a significant difference in the proportion of students who took part in each survey wave, with the highest proportion of students in the post 2017 survey wave (46.3%) and the lowest in the 2014 post-intervention survey (27.3%).

There were significant differences between survey waves in the time at which surveys were conducted (Appendix 1, Table A2). These differences may have affected research findings particularly around alcohol consumption patterns, thus findings should be interpreted with caution⁴. Despite these differences in timings, there was no significant difference in the average number of hours anticipated to be spent in the city's nightlife between survey waves, with participants expecting to be out for around six hours.

Awareness and perceptions of the intervention

Across survey waves, there was a significant increase in awareness of the rebranded DLEM intervention (2015, 2016, 2017) compared to awareness of SNTD (2014) (Figure 4). On average about one third of participants were aware of DLEM at each wave compared to less than one fifth reporting awareness of SNTD. If analyses are limited to include only Liverpool residents, awareness of SNTD increased by approximately 3%, while awareness of DLEM at each wave increased to approximately four in ten survey participants.

Participants who were aware of the intervention were asked how much they agreed⁵ with a range of statements about the intervention. In general across all statements, there was an increase in the proportion of participants who reported having a positive perception of the intervention across survey waves from 2014 to 2017, although these increases were non-significant (Figure 3). The main increase in positive perceptions occurred when the intervention was rebranded from SNTD to DLEM in 2015.

Knowledge of the law

There was a significant difference in knowledge of the law around purchasing alcohol for a friend who is drunk from the pre-intervention survey to each post survey wave, with an incremental increase between each survey wave from the 2014 pre-intervention survey to the 2017 post-intervention survey (Figure 4). There was also a significant difference from pre to each post-intervention survey wave in knowledge of the law around a bar server selling alcohol to someone who is already drunk. Of participants who were aware of the DLEM intervention (2015, 2016, 2017), on average 77% of participants correctly reported it was illegal to sell alcohol to someone who was already drunk, while 72% knew it was illegal to purchase alcohol for someone who was already drunk.

⁴ See limitations in the methods section for further information.

⁵ Including strongly agree and agree.

Figure 3: Proportion of participants agreeing⁵ with selected statements about the intervention; SNTD post 2014, and DLEM post 2015, 2016 and 2017, nightlife user survey comparisons

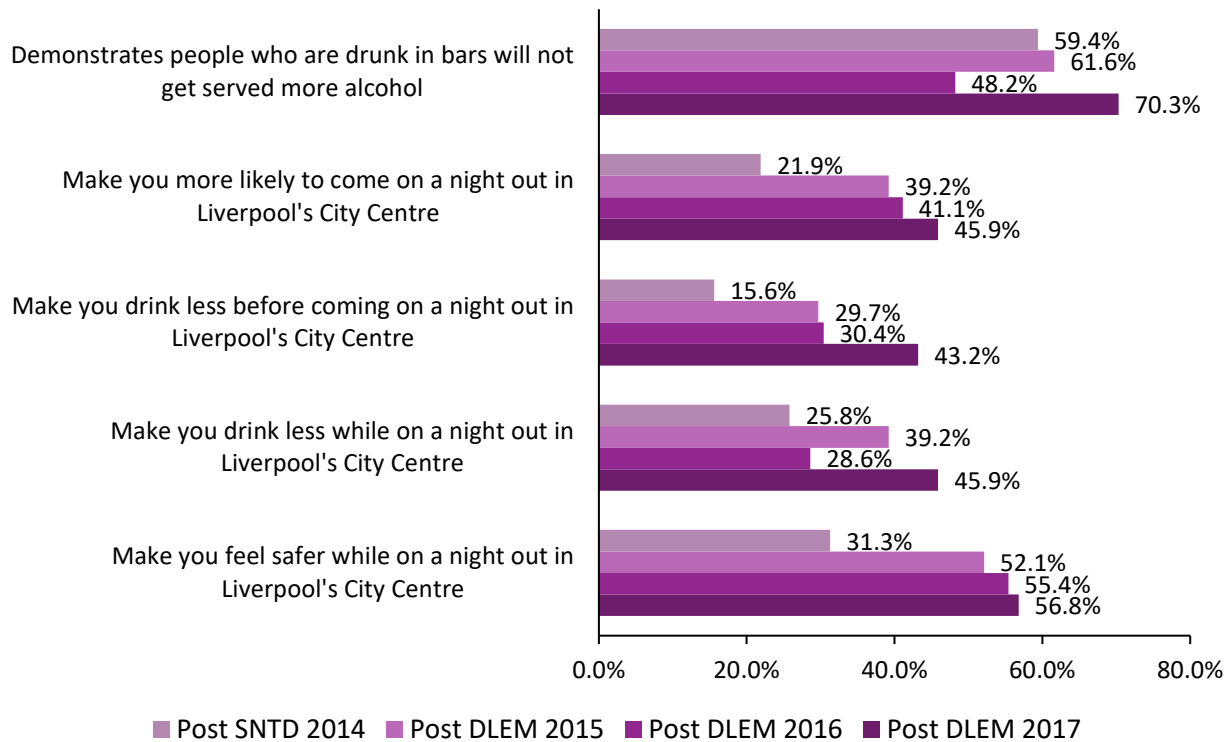
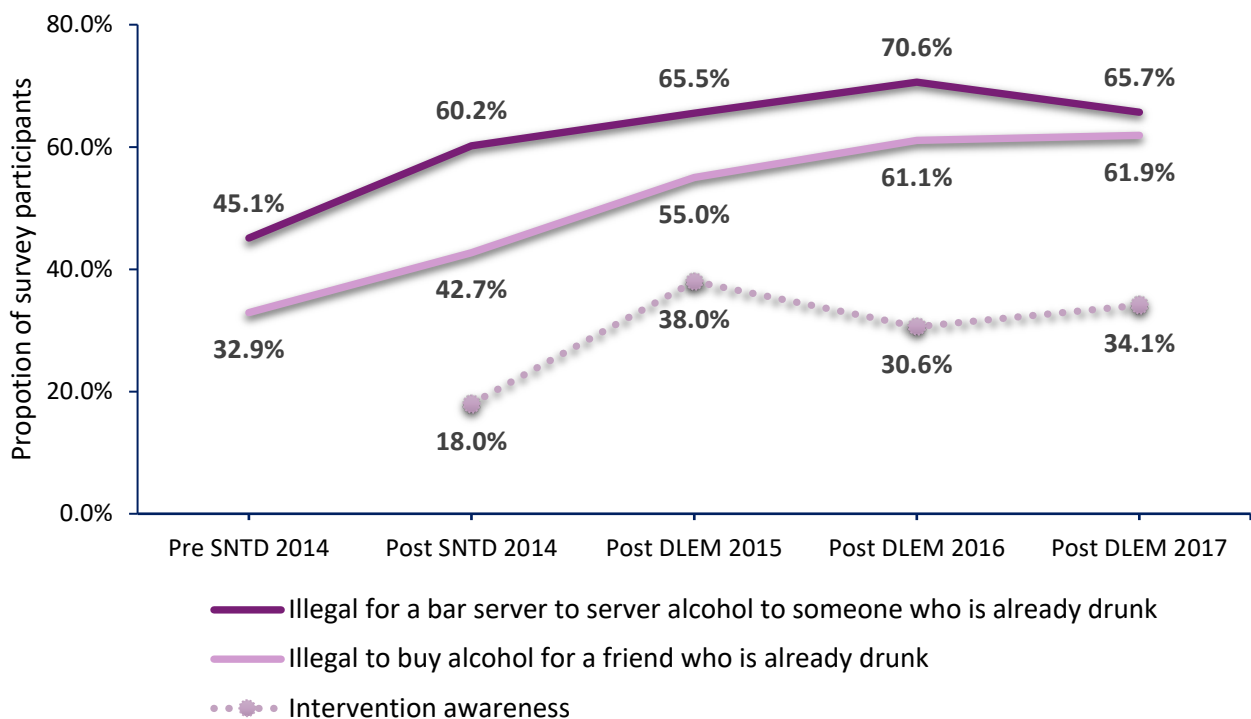


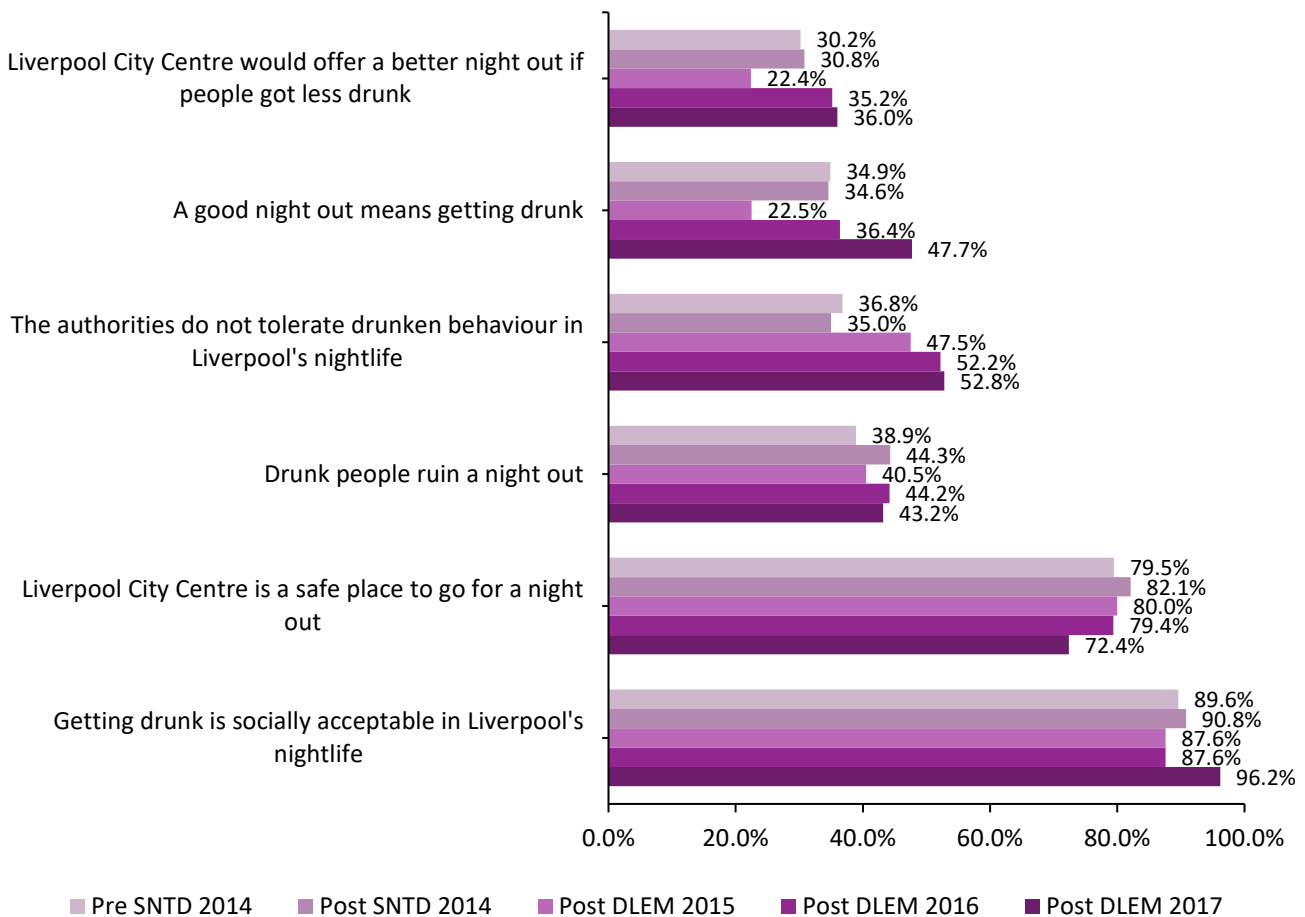
Figure 4: Intervention awareness and knowledge of the laws on the sale of alcohol to, and purchasing of alcohol for drunks; SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017, nightlife user survey comparisons



Cultures and acceptability of drunkenness in Liverpool City Centre

Participants were asked how much they agreed or disagreed with a number of statements relating to Liverpool’s night-time economy and drinking behaviour using a five point scale from strongly agree to strongly disagree⁶ (Figure 5). There was an incremental increase in the proportion of participants agreeing⁵ with the statement ‘the authorities do not tolerate drunken behaviour in Liverpool’s nightlife’, with a significantly higher proportion of 2017 post-intervention survey participants agreeing than in the pre (pre, 36.8%; post, 52.8%; $p < 0.001$). However, significantly less 2017 post intervention participants agreed that Liverpool City Centre is a safe place to go for a night out compared to the pre (pre, 79.5%; post, 72.4%; $p < 0.05$). Further, a significantly higher proportion of 2017 post-intervention survey participants agreed that ‘a good night out means getting drunk’⁷ (pre, 34.9%; post, 47.7%; $p < 0.01$). There were no significant changes in levels of agreement with other statements across survey waves.

Figure 5: Proportion of participants agreeing⁵ with selected statements on drunkenness, SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017, nightlife user survey comparisons



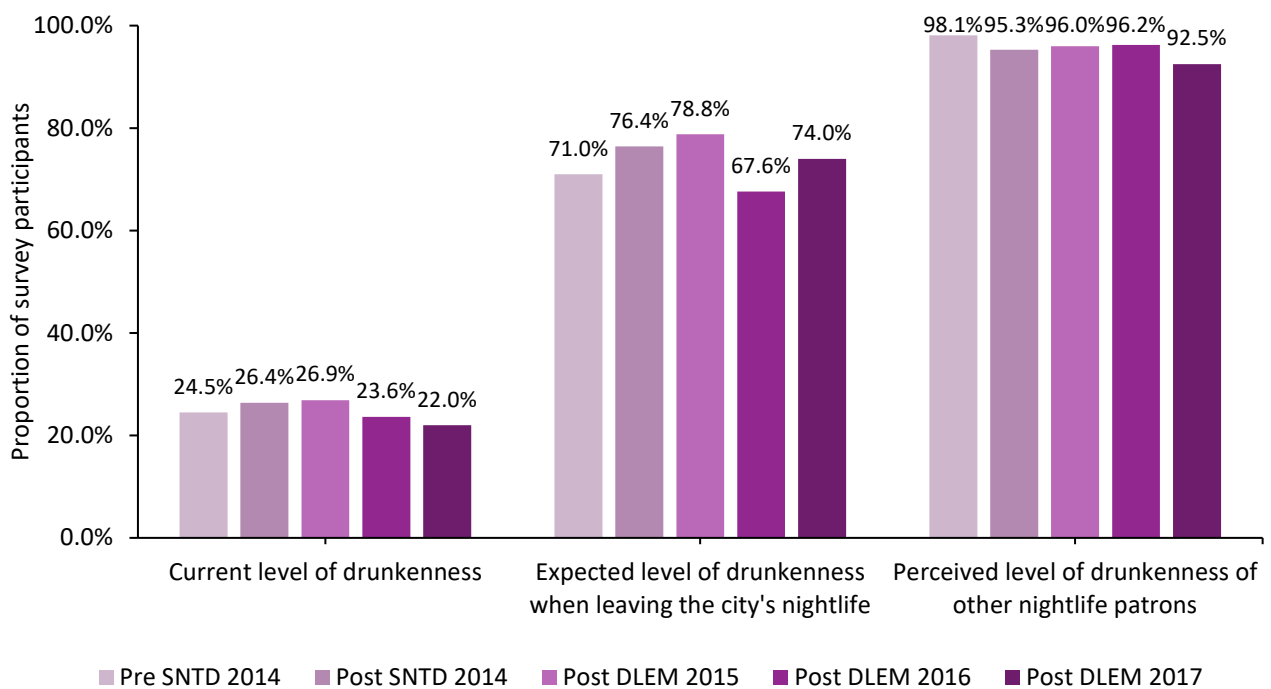
⁶ Strongly agree, agree, neither, disagree and strongly disagree (those who answered ‘don’t know’ in the post-intervention survey were excluded).

⁷ In the pre and post SNTD 2014, and post DLEM 2015 and 2016, survey this question was worded ‘it’s hard to enjoy a night out in the city centre if you don’t get drunk’.

Using a scale of one (completely sober) to 10 (very drunk), participants were asked: how drunk they felt at the time of the survey; how drunk they thought they would be when they left the city’s nightlife; and what they thought the typical level of drunkenness was that nightlife users reach on a night out in Liverpool City Centre. Due to the significant differences between survey waves in the time at which surveys were conducted, analyses on current drunkenness and expected drunkenness were limited to include only surveys conducted between 10pm and 1.59am, to increase comparability across survey waves. Perception of drunkenness of other nightlife users was not limited to these times and included all participants.

There was no significant difference across survey waves in the proportion of drinkers who reported a high level of current drunkenness or who predicted their drunkenness level would be high when leaving the city centre’s nightlife (Figure 6). There was also no significant difference across survey waves in how drunk all participants perceived other night-time users to typically be. There was no significant difference between pre and 2017 post-intervention survey drinkers in the reported mean drunkenness score at the time of the survey (pre SNTD 2014, 4.1; post DLEM 2017, 3.9; $p=0.228$), or on how drunk drinkers expected to be when leaving the city’s nightlife (pre SNTD 2014, 6.6; post DLEM 2017, 6.9; $p=0.314$). However, the perceived mean level of drunkenness of other patrons in the city’s nightlife was significantly lower in the post DLEM 2017 survey than in the pre (pre SNTD 2014, 8.6; post DLEM 2017, 8.0; $p<0.01$).

Figure 6: Proportion of participants reporting a high (6-10) drunkenness rating for selected statements on drunkenness; SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017



Alcohol consumption levels and behaviours

Due to the significant differences between survey waves in the time at which surveys were conducted, analyses were limited to include only surveys conducted between 10pm and 1.59am, to allow more accurate comparative and trend analysis of alcohol consumption across survey waves. Over 90% of nightlife users across all survey waves reported having consumed alcohol prior to survey participation (referred to here after as drinkers). There was a significant difference in the proportion of drinkers who reported preloading between survey waves, with the lowest proportion of preloaders in the 2016 survey (42.2%; Table 1). While there was no significant difference across all survey waves in the number of units consumed while preloading, there was an incremental decrease across survey years. Further, the number of reported units consumed by preloaders in the post 2017 survey was significantly lower than in the 2014 pre-intervention survey (pre 2014, 5.7; post 2017, 4.0; $p < 0.05$). There was a significant difference between survey waves in the proportion of drinkers having consumed alcohol in a city centre venue by the point of the survey, with higher proportions in the post-intervention surveys than the pre (pre 2014, 82.1%; post 2014, 84.8%; post 2015, 95.8%; post 2016, 94.2%; post 2017, 87.8%; $p < 0.001$).

There was a significant difference in the number of units consumed in venues in the city centre across survey waves, with the highest number of units reported in the 2014 post-intervention survey and the lowest in the post 2016 survey (post 2014, 7.7; post 2016, 5.0). There was no significant difference or discernible trend across survey waves in the proportion of drinkers who reported en route loading or consuming alcohol purchased in an off-licence while in the city centre.

There was a significant difference across survey waves in the number of units drinkers had consumed by the point of the survey, with the highest number of reported units in the 2014 post intervention survey and the lowest in the post 2016 survey (post 2014, 11.2; post 2016, 8.0; $p < 0.001$). There was no significant difference between survey waves in the number of units expected to be consumed after survey participation, or the estimated total number of units consumed over the course of the night out.

Table 1: Nightlife users' (surveyed between 10pm-1.59am only) alcohol consumption over the course of the night out; SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017

Alcohol consumption		SNTD		DLEM			<i>p</i>	
		Pre SNTD 2014	Post SNTD 2014	Post DLEM 2015	Post DLEM 2016	Post DLEM 2017	<i>between 5 surveys</i>	<i>between pre 2014 & post 2017</i>
Preloading*	%	63.0	53.1	62.9	42.2	51.6	<0.01	NS
	Units	5.7	5.1	4.5	4.4	4.0	NS	<0.05
En route loading*	%	20.4	23.4	23.8	22.2	15.6	NS	NS
	Units	4.0	4.0	5.1	3.7	2.0	NS	NS
City centre nightlife – purchased in pubs/bars/nightclubs*	%	82.1	84.8	95.8	94.2	87.8	<0.001	NS
	Units	6.0	7.7	6.1	5.0	6.0	<0.001	NS
City centre nightlife purchased from off-licences/ supermarkets*	%	4.3	3.4	2.8	1.3	4.4	NS	NS
	Units	8.0	8.7	6.5	4.0	7.4	NS	NS
Total units consumed prior to survey completion*	Units	9.0	11.2	11.0	8.0	9.0	<0.001	NS
Expected units consumed post survey^	Units	7.0	6.0	6.0	8.0	8.0	NS	NS
Total units consumed during night out+	Units	16.0	18.0	18.0	16.0	18.0	NS	NS

Note. Units presented are median value. NS = not significant. *Of those who had consumed alcohol pre survey only. ^Of those who reported that they would drink alcohol post survey only. +Including reported and, or expected alcohol consumption.

3.2 Key findings from the post-intervention 2017 evaluation wave

3.2.1 Pseudo-intoxicated actor test purchases (2017)

In November 2017, 101 alcohol test purchase attempts were made by pseudo-intoxicated actors across five nights (Wednesday, 14; Thursday, 22; Friday, 26; Saturday, 31; Sunday 8) in 92 randomly selected venues in Liverpool City Centre and in 9 premises that had served the actor during the test purchase attempt in the previous two test purchase studies (2015, 2016).

Just over two in ten (21.8%, n=22) purchase attempts resulted in the sale of alcohol to a pseudo-intoxicated actor. Two of the nine premises selected as they had served the actor repeatedly in previous attempts, also served the actor in this purchase attempt.

There was no significant difference in service rates by week night; 13.6% of services attempts on Wednesday resulted in the sale of alcohol, 22.7% on Thursday, 18.2% on Friday, 31.8% on Saturday and 13.6% on Sunday. There was also no significant difference in service outcome between purchase attempts made before or after midnight. Pseudo-intoxicated actors were offered a double measure of vodka by the bar server instead of the single requested in over half (54.5%) of all successful test purchase attempts. Of all successful test purchase attempts actors were asked to show ID at the bar in one fifth of them (18.2%).

Where actors were refused service, the majority (66.3%) of attempts involved the server directly refusing the sale of alcohol. Other tactics were also used to avoid the alcohol sale, these included offering a non-alcoholic drink (18.8%), using caring statements (5.0%), seeking the help of other staff (4.0%), and ignoring the patron (i.e. passive refusal; 6.9%) (see Box 2 for examples of such tactics used in exchanges with actors).

Box 2: Example extracts from actors' notes on exchanges with bar servers

Test purchases resulting in alcohol service:

- [The server] was very friendly, asked if I wanted a double.
- People at the bar were pointing and laughing at me. I ordered and the server said "Are you sure you're okay?" and laughed as they took the money.
- Bartender asked if I wanted a single or double measure. I said "single" the bar server gave me a double anyway and did not question my state.

Test purchases resulting in refusal of alcohol service:

- Straight refusal. "Had too much to drink, can't serve you".
- The server went to serve me, but looked at me again. The bar server then gave me a water and said I was "too drunk for vodka".
- Bartender was going to serve me, but colleague stopped the server and got me a water instead.
- The bartender asked me if the drink was for me. I said "Yes" the server said that if it was for me he would not serve me.
- I first got ignored for a few minutes and then the bar server told my sober friend "I can't serve your friend, they're too drunk."

Ten established markers of poorly managed and problematic (PMP)⁸ bars were drawn from the observational data using an established tool by Graham et al [10] and used in the previous Drink Less Enjoy More evaluations [7, 3]. There was no significant association between the total number of PMP markers, or any of the individual PMP markers, and the sale of alcohol to pseudo-intoxicated actors (Table 3).

Table 3: Service rates to pseudo-intoxicated actors in venues with and without markers of poorly managed and problematic (PMP) bars

PMP markers		n	% served	χ^2	p
Low seating	No	52	17.3	0.776	0.378
	Yes	49	26.5		
Drink promotions	No	58	17.2	1.082	0.298
	Yes	43	27.9		
Young bar staff	No	57	21.1	0.000	1.000
	Yes	44	22.7		
Young customers	No	73	19.2	0.569	0.451
	Yes	28	28.6		
Noisy bar	No	44	18.2	0.278	0.598
	Yes	57	24.6		
Crowded bar	No	63	23.8	0.150	0.699
	Yes	38	18.4		
Poor lighting	No	57	15.8	2.010	0.156
	Yes	44	29.5		
Rowdy bar	No	61	19.7	0.151	0.698
	Yes	40	25.0		
Dirty bar	No	72	16.7	2.877	0.090
	Yes	29	34.5		
Drunk customers	No	54	20.4	0.016	0.899
	Yes	11	23.4		
Number of PMP markers	None	10	20.0	4.572	0.334
	1 or 2	30	16.7		
	3 or 4	17	17.6		
	5-7	27	18.5		
	8-10	17	41.2		

⁸ PMP, poorly managed and problematic bars: low seating, <50% venue floor area with seating; young bar staff, >50% appear <age 25; young customers, most appear <age 25; drinks promotions, general and cheap drinks promotions; noisy bar, crowded bar, poor lighting, dirty bar, rowdy bar, drunk customers, ratings of five or over on scales of 0 to 9 grading the presences of the marker (e.g. noisy bar; 0=very quiet/easy to talk, 9=hurt ears/cannot talk).

3.2.2 Nightlife user survey (2017)⁹

Alcohol consumption, nightlife usage and drunkenness

Over the course of the entire night out, males, participants aged 22-29 years, non-students and non-Liverpool residents expected to consume significantly more total units of alcohol than their counterparts. Further, preloaders expected to consume significantly more units over the course of the entire night out than non-preloaders (preloaders, 20.8; non-preloaders, 15.0; $p < 0.01$). Preloaders had drunk significantly less units than non-preloaders in venues in the city centre by the point of the survey (preloaders, 2.1; non-preloaders, 7.0; $p < 0.001$). There was no significant difference between preloaders and non-preloaders in the number of units consumed by the point of participation in the survey (preloaders, 10.0; non-preloaders, 8.7; NS) or in the number of units intended to be consumed after the survey (preloaders, 8.8; non-preloaders, 6.0; NS). There was also no significant difference between preloaders and non-preloaders in the mean level of drunkenness they felt at the time of the survey (preloaders, 4.2; non-preloaders, 3.5; $p = 0.051$) or in how drunk they expected to be when leaving the city's nightlife (preloaders, 7.3; non-preloaders, 6.6; $p = 0.056$). There was no significant difference between preloaders and non-preloaders in the proportion who agreed it was easy to get in to city centre venues when you were drunk (preloaders, 50.9%; non-preloaders, 50.0%; $p = 0.914$).

Alcohol-related harms

Nightlife users who participated in the 2017 post-intervention survey were asked a range of questions about harms they experienced whilst on, or after, a night out in Liverpool City Centre in the past three months. The number of participants reporting having experienced each alcohol-related harm varied with: 35.1% reporting vomiting; 30.6% having been so drunk they needed assistance to walk; 25.4%, a serious verbal argument; 15.7%, an injury; 14.2%, a sexual assault (including unwanted touching/harassment); and, 13.4%, a physical assault (i.e. fight). Half (50.0%) of all participants reported experiencing at least one alcohol-related harm while on a night out in Liverpool in the past three months. Of those participants who reported experiencing at least one alcohol-related harm, the average number of harms reported was 2.7.

There was a significant difference between age groups in the proportion of participants reporting at least one harm, with more participants aged 18-21 years reporting at least one harm (63.2%), than those aged 22-29 years (46.9%), or 30+ years (5.9%; $p < 0.001$). Students and Liverpool residents were also significantly more likely to report having experienced at least one alcohol-related harm in the past three months, compared to non-students (student, 62.9%; non-student, 39.4%; $p < 0.05$) and non-residents (Liverpool residents, 61.2%; non-residents, 38.8%; $p < 0.05$). Participants who regularly went on a night out in Liverpool City Centre once a month or more were also significantly more likely to have experienced at least one harm (59.8%) than those who had been out less than once a month (31.9%; $p < 0.01$). There was no significant difference between gender in the proportion reporting at least one harm (males, 48.3%; females,

⁹ Full findings from the post-intervention survey (2017) are provided in Appendix 2.

51.4%; $p=0.862$). There was also no significant difference in the proportion of preloaders and non-preloaders reporting at least one harm or any of the individual harms.

Drunkenness and behaviours in the night-time economy

Nightlife users were also asked a range of questions about their behaviours whilst drunk on a night out in Liverpool's night-time economy in the past three months. Approximately one ten survey participants reported having been refused entry to a venue (15.7%), refused service of alcohol at a bar (9.7%), or asked to leave a venue because they were too drunk (10.4%). One in twenty (4.5%) survey participants reported having asked a friend to purchase them alcohol because they were too drunk to buy it themselves whilst on a night out in Liverpool in the past three months. Over one third (36.6%) of participants reported trying to appear sober to gain entry to a venue whilst on a night out in Liverpool, while one quarter (26.9%) of participants reported trying to appear sober to get served at the bar.

Survey participants in the youngest age group (18-21 years) were significantly more likely than participants aged 22-29 or 30+ to be refused entry to a venue because they were too drunk (18-21, 25.0%; 22-29, 8.2%; 30+, 0.0%; $p<0.01$). Students, participants aged 18-21 years and Liverpool residents were significantly more likely to try to appear sober to gain entry to a venue than non-students (students, 48.4%; non-students, 26.8%; $p<0.05$), older participants (18-21, 54.4%; 22-29, 20.4%; 30+, 11.8%; $p<0.001$) and non-residents (residents, 49.3%; non-residents, 23.9%; $p<0.01$) respectively. Survey participants in the youngest age group (18-21 years) were also significantly more likely than older participants to try to appear sober to get served alcohol at the bar (18-21, 39.7%; 22-29, 14.3%; 30+, 11.8%; $p<0.01$). There were no significant differences between preloaders and non-preloaders for any of the behaviours.

4. Summary of key findings and conclusion

The pilot SNTD and the rebranded DLEM intervention have been implemented in Liverpool's nightlife and evaluated at several time points over the past three and a half years. To examine the longer-term impact of the intervention on public awareness of the law and bar staff adherence to it and cultures of nightlife drunkenness, this report presents a detailed comparison of research findings across evaluation waves from the nightlife user survey and pseudo-intoxicated actor test purchase attempts. Such information is critical to informing the continued development and implementation of DLEM in Liverpool, and other areas seeking to address sales of alcohol to drunks (e.g. Local Alcohol Action Areas). This wave of evaluation also collected some new baseline data on nightlife user experiences in the night-time economy, including alcohol-related harms. This new data in conjunction with the comparison data aims to inform future implementation and development of DLEM across Liverpool's nightlife.

The first pseudo-intoxicated actors study, conducted in Liverpool in 2013, found that 84% of test purchase attempts in nightlife venues resulted in the sale of alcohol to the actor. This suggested the law prohibiting the sale of alcohol to intoxicated individuals was not being adhered to [11]. Crucially, since the implementation of the DLEM intervention, there has been a significant and sustained reduction in sales of alcohol over each of the post-intervention test purchase waves (DLEM 2015, 26% of attempts resulted in the sale of alcohol; DLEM 2016, 36%; DLEM 2017, 22%). The difference in post-intervention service rate across evaluation waves may be due to differences in the level of police engagement with licensing premises regarding sales of alcohol to drunks. When the post-intervention service rate was at its highest in 2016 (36%), only standard police enforcement was implemented, however, the service rate was significantly lower when enhanced police enforcement was implemented as part of the intervention in 2015. Standard police enforcement has continued to be in operation in 2017. Findings from the most recent wave of evaluation however, showed the service rate to be significantly lower than both 2015 and 2016. While enhanced police enforcement may be an important factor in the initial stages of implementing the intervention to ensure compliance, sustained standard enforcement may be equally effective in reducing and maintaining a low service rate. Evidence from elsewhere suggests that enforcement may be the most crucial element of a multi-component intervention [12]. Evidence from our studies suggest that the level of this enforcement may also be important, but crucially, reduction in over service is maintained even when standard enforcement is implemented over a sustained period of time. This is an important finding as it suggests that while resource intensive efforts may be necessary in the initial stages of intervention implementation, fewer resources (i.e. standard enforcement) are required to maintain a low level of service of alcohol to drunks if they are implemented over a sustained period of time.

Nightlife user awareness levels of the rebranded DLEM intervention were similar across evaluation years, with approximately one third of survey participants reporting being aware of the intervention. This sustained level of awareness is a positive finding, considering the fluidity of Liverpool's nightlife, with tourists, who are less likely to have been exposed to community level DLEM messages making up a large proportion of nightlife users. When analyses were

limited to include only local Liverpool residents, four in ten survey participants reported being aware of the intervention. There was also an increase in positive perceptions about the DLEM intervention compared to SNTD. Crucially, knowledge of the law around the service of alcohol to, or purchase of alcohol for, drunks has shown an approximate incremental increase over evaluation waves, with an average of two thirds of participants correctly reporting that such behaviour is illegal. This continued increase in the public's knowledge is important in changing cultures and acceptability of drunkenness, and communicating that severely intoxicated individuals will not be served more alcohol.

Despite these positive findings, there was no discernible pattern, or decrease in alcohol consumption at any point of the night between survey waves. Further, there was no differences across survey waves in drunkenness levels, with similar proportions of participants across survey waves reporting high levels of drunkenness at the time of the survey and expecting to have a high level of drunkenness by the time they were leaving the city's nightlife. The majority of participants in every evaluation wave also perceived other nightlife patrons as typically reaching a high level of drunkenness. Social norms and acceptability of drunkenness in the night-time economy also remain at a high level, with over 90% of participants in the 2017 survey wave, agreeing that getting drunk is socially acceptable in Liverpool's nightlife, while half of participants agreed that a good night out means getting drunk. Further, over half of participants agreed that it is easy for people who are drunk to enter venues and that bar staff will serve drunk patrons.

While patterns of drinking behaviours and cultures of drunkenness can take many years to change, a useful means of informing intervention refinement and development may be to examine nightlife user drinking patterns and behaviours. Findings from the most recent nightlife user survey (2017) showed that males, individuals aged 22-29 years, non-students and non-Liverpool residents expected to consume the highest number of alcohol units over the course of the entire night out. However, there were no sociodemographic differences in drinking patterns or behaviours (i.e. preloading at home or a friend's house, or in city centre venues), making it less clear where best to target such individuals. While these individuals will be targeted more broadly as part of the media awareness campaign, it may be possible to target them with specific messages also. For example, tourists from outside the region could potentially be made aware of DLEM messages through distribution of materials to hotels etc. The recent expansion of DLEM to other areas in Cheshire and Merseyside may also increase awareness of the intervention among individuals who are not Liverpool residents but who still frequent its night-time economy.

Examining patterns of drinking behaviour may also inform intervention targeting and development. Findings from the most recent nightlife user survey in 2017, showed that there was no significant difference between preloaders (i.e. those who drank at home or a friend's house prior to entering the night time economy) and non-preloaders in the number of units consumed by point of participation in the survey (10.0 vs. 8.7), or in the number of units intended to be consumed after the survey (8.8 vs. 6.0). Notably, however, preloaders had drunk significantly less units (2.1) in city centre venues by the point of participation in the survey than non-preloaders (7.0). This suggests two distinct types of drinkers in the night-time economy, preloaders who consume the majority of their alcohol outside of the night-time economy and

city drinkers who consume alcohol primarily within city centre venues. Findings from the current survey show a relatively equal proportion of each of these types with 50% of drinkers reporting preloading. With the high levels of alcohol consumed by both types of drinkers, intervention approaches should be targeted at both groups. Within venues, vigilant door and bar staff who monitor levels of intoxication amongst patrons entering venues and whilst they are inside, and safely refuse entry or escort the person out of the venue, may be as important as refusing service at the bar. Such vigilance and staff intervention at these points could provide a deterrent to patrons from consuming excessive amounts of alcohol elsewhere, and reduce potential risks for alcohol-related harms amongst nightlife users.

Previous research has suggested that preloaders perceive drinking at home prior to a night out as a means of saving money [13] due to price disparity between on and off-licence premises [14]. While price disparity may be a motivating factor to consume excessive amounts of alcohol at home instead of purchasing drinks in on-licensed premises, in our study we found preloaders did not consume much less alcohol in the city centre than non-preloaders. Therefore it is reasonable to assume that not only do preloaders consume a higher total number of units over the course of the entire night out than non-preloaders but inevitably with the combined cost of on and off-license sales they may also have spent more money. Such information may be useful to inform awareness campaigns run as part of DLEM. With preloaders as a group consuming the highest number of units while on a night out, such measures like enforcement and education specifically targeted at this behaviour may have a positive impact on the overall level of drunkenness within Liverpool's night-time economy.

Conclusion

Liverpool's DLEM intervention has shown positive findings throughout evaluation time points over the past three and a half years. Crucially, improvements have been made and sustained in key areas such as reduced bar staff propensity to serve alcohol to pseudo-intoxicated actors and improved nightlife user knowledge of associated alcohol legislation. To date, wider impacts on nightlife alcohol consumption and drinking behaviours, and social acceptability of drunkenness have not been observed. However, changing cultures is a complex task that will inevitably be influenced by various factors at both a local and national level. Reducing alcohol access within on-licensed premises in what is a large diverse nightlife setting is a positive step in working towards achieving this goal. Continued intervention should aim to maintain reductions in alcohol access, and continue to work towards changing community level alcohol and nightlife cultures, reducing tolerance and expectations of nightlife drunkenness, and promoting a diverse, inclusive and healthy nightlife setting.

5. References

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6. Appendices

Appendix 1: Comparisons and trends across SNTD and DLEM evaluation waves; additional data tables

Table A1: Sample characteristics across nightlife user survey waves; SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017

Sample characteristic	SNTD (%)		DLEM (%)			<i>p</i>	
	Pre 2014	Post 2014	Post 2015	Post 2016	Post 2017	between 5 surveys	between pre 2014 & post 2017
(N)	214	186	202	211	135		
Age group (years)							
18-21	40.8	34.9	36.3	37.9	50.4		
22-29	39.9	39.2	39.3	41.2	37.0		
30+	19.2	25.8	24.4	20.9	12.6	NS	NS
Male	50.0	60.3	54.5	54.0	45.2	NS	NS
Liverpool resident	49.3	54.3	50.2	61.1	49.6	NS	NS
Student	32.9	27.3	30.7	35.4	46.3	<0.01	<0.05
Regular nightlife user ^c	57.0	62.4	53.0	55.7	65.2	NS	NS

Note. NS = not significant. ^cUsually go on a night out in the city centre at least once a month.

Table A2: Proportion of surveys conducted by time group; SNTD pre and post 2014, and DLEM post 2015, 2016 and 2017

Survey time	SNTD (%)		DLEM (%)			<i>p</i>	
	Pre 2014	Post 2014	Post 2015	Post 2016	Post 2017	between 5 surveys	between pre 2014 & post 2017
8-9.59pm	0.0	7.2	20.4	24.0	25.0		
10-11.59pm	51.6	53.0	44.8	63.9	51.5		
12-1.59am	27.7	30.4	32.3	12.0	23.5		
2-4.59am	20.7	9.4	2.5	0.0	0.0	<0.001	<0.001

Appendix 2: Post-intervention (2017) nightlife user survey findings

Sample characteristics

One hundred and thirty five nightlife users completed the post-intervention survey. Just over half (51.5%) were conducted between the hours of 10pm and 11.59pm. Over half (54.8%) of participants were female and participants ranged in age from 18 to 49 years, with a mean age of 23 years. Just over four in ten (46.3%) reported being current students and almost half (49.6%) described themselves as being Merseyside residents.

Nightlife usage

Seven in ten (70.1%) participants had arrived in Liverpool city centre for their night out before 10pm. One fifth (22.4%) reported entering between the hours of 10pm and 11.59pm, while 7.5% reported coming into the city centre past midnight. Participants also reported the time they intended to leave the city's nightlife. Over half (58.9%) of all participants intended to leave the city's nightlife between the hours of 12am and 3.59am, while 23.9% anticipated they would go home after 4am. On average, from the time of entry until anticipated home time, survey participants expected to spend six hours in Liverpool's nightlife. At the time of the survey, participants had visited on average two venues (range: zero to eight); 5.2% of participants had not visited any city centre venues. One third (35.1%) of nightlife users reported that they typically go on a night out in Liverpool city centre once a week or more, with 11.9% reporting going on a night out 2-3 times per month and 43.3% once a month or less. Approximately one in ten (9.7%) nightlife users were on their first night out in the city.

Alcohol consumption

Prior to participating in the survey, the majority (92.6%) of nightlife users had consumed alcohol (referred to as drinkers). Three in ten (30.3%) drinkers consumed their first drink before 6pm, whilst 62.2% started drinking between 6pm and 9.59pm, and 7.6% after 10pm. Nearly half (47.2%) of drinkers consumed alcohol at home or a friend's house before coming into the city centre for their night out (preloading). There was no significant difference between age, gender, residency status or student status in the proportion of respondents who reported preloading (see Table A1). There was also no association between sociodemographics and the number of units consumed while preloading. One sixth (16.9%) of drinkers reported consuming alcohol after leaving home or a friend's house, but prior to arriving in the city centre (en route loading). Approximately one third of participants reporting en route loading consumed alcohol on transport/within transport settings (e.g. taxi, train, airport) (36.8%) and/or at a licensed premise outside of the city centre (e.g. local pub) (31.6%). There was no significant differences between age, gender, residential or student status in the proportion of individuals who reported en route loading, or the number of units drank while en route loading. The majority (87.9%) of drinkers had consumed alcohol in a city centre bar, pub or nightclub prior to survey participation. The number of units consumed in pubs, bars and nightclubs was significantly

lower for students than non-students (students, 4.0; non-students, 8.0; $p < 0.01$). Only five drinkers (4.0%) reported having consumed alcohol purchased from an off-licence or supermarket prior to participation in the survey (including alcohol they had brought into the city centre with them). There was no significant association between sociodemographics and the proportion of individuals who reported consuming alcohol purchased from an off-licence, or the number of units consumed. By the point of the survey, drinkers had consumed a median of 10 units, with students and Liverpool residents having consumed significantly less units than non-students and non-residents (students, 8.0; non-students 11.0; $p < 0.01$; residents, 8.0; non-residents, 10.7; $p < 0.05$) respectively. The median number of units drinkers consumed over the course of the night out was: 4.2 units while preloading; 2.0 units during en route loading; 6.0 units in bars, pubs and nightclubs in Liverpool City Centre; and 8.0 units of alcohol which were purchased from an off-license and consumed in the nightlife area. By the time of the survey participation, almost two thirds (61.8%) of drinkers had consumed spirits, four in ten (39.8%) beer or lager, 26.8% wine, 8.1% cider and 3.3% alcopops.

Participants were then asked about their intention to drink any alcohol after survey participation, during the rest of their night out. The majority (93.5%) of those who had already consumed alcohol intended to consume more during the remainder of their night out (92.5% of all participants). Of those who intended to consume more alcohol, the median number of units expected to be consumed was 8.0, with males expecting to consume a significantly higher number of more units than females (males, 10.0; females, 6.2; $p < 0.01$). Participants aged 30+ years expected to consume significantly less units after taking part in the survey during the course of the rest of their night out than participants in younger age groups (18-21, 8.0; 22-29, 9.0; 30+, 4.0; $p < 0.05$). Overall, the median expected alcohol consumption over the entire night, including alcohol already consumed and expected to be consumed, was 18.0 units, with males expecting to consume significantly more units than females (males, 20.0; females, 16.5; $p < 0.05$). Merseyside residents expected to consume significantly less total units over the course of the night out than their counterparts (residents, 15.0; non-residents, 20.4; $p < 0.01$). Compared to non-students, students intended to consume a significantly lower total number of units over the course of the night out (students, 15.0; non-students, 20.0; $p < 0.05$). There was also a significant difference in the estimated total number of units consumed over the course of the night out by participants in different age groups, with those aged 30+ reporting the lowest number of total units (18-21, 17.0; 22-29, 20.3; 30+, 14.8; $p < 0.05$). In total, almost one fifth (18.9%) of alcohol estimated to be consumed over the course of the entire night out was drunk prior to entering the city centre's nightlife, while preloading or en route loading. After leaving the city's nightlife 13.0% of all participants (13.3% of drinkers) intended to consume more alcohol (i.e. at home/or a friend's house).

Table A1: Alcohol consumption over the course of the night out, post-intervention (2017) survey

Alcohol consumption		All	Sex			Age (years)				Student status			Liverpool resident		
			Male	Female	<i>p</i>	18-21	22-29	30+	<i>p</i>	No	Yes	<i>p</i>	No	Yes	<i>p</i>
Preloading*	%	47.2	48.2	46.4	NS	54.1	39.6	43.8	NS	40.3	56.1	NS	44.6	50.0	NS
	Units	4.2	4.0	4.2	NS	4.2	4.0	4.2	NS	4.0	4.4	NS	5.1	4.0	NS
En route loading*	%	16.9	19.6	14.7	NS	16.7	14.6	25.0	NS	17.9	16.1	NS	18.5	15.3	NS
	Units	2.0	2.0	2.5	NS	2.0	2.0	5.5	NS	2.0	2.0	NS	2.0	2.0	NS
City centre nightlife - purchased in pubs/bars/nightclubs*	%	87.9	83.6	91.3	NS	85.2	87.2	100.0	NS	92.4	82.5	NS	90.6	85.0	NS
	Units	6.0	6.0	6.0	NS	4.1	8.5	5.3	NS	8.0	4.0	<0.01	6.2	5.0	NS
City centre nightlife - purchased from off-licences/supermarkets*	%	4.0	9.1	0.0	<0.05	4.9	4.3	0.0	NS	4.5	3.5	NS	4.7	3.3	NS
	Units	8.0	8.0	-	- ¹	8.0	8.5	-	NS	8.0	4.5	NS	8.0	4.5	NS
Total units consumed prior to survey completion*	Units	10.0	10.0	9.0	NS	8.0	10.1	11.6	NS	11.0	8.0	<0.01	10.7	8.0	<0.05
Expected units consumed post survey[^]	Units	8.0	10.0	6.2	<0.01	8.0	9.0	4.0	<0.05	9.0	8.0	NS	9.0	8.0	NS
Total units consumed during night out⁺	Units	18.0	20.0	16.5	<0.05	17.0	20.3	14.8	<0.05	20.0	15.0	<0.05	20.4	15.0	<0.01

Note. Units presented are median value. NS = not significant. *Of those who had consumed alcohol pre survey only. ^Of those who reported that they would drink alcohol post survey only. +Including reported and, or expected alcohol consumption. ¹ Significant test not performed as no participants in one group.

Drunkenness

Using a scale of 1 (completely sober) to 10 (very drunk), participants were asked: how drunk they felt at the time of survey; how drunk they thought they would be when they left the city's nightlife that evening and what they thought the typical level of drunkenness was that people reach on a night out in the city centre (Figure A1). Of those who had drunk prior to survey participation over one sixth (16.1%) reported feeling completely sober. The mean score for how drunk drinkers felt at the time of the survey was 3.9. The mean score for how drunk drinkers (including those who had not drunk alcohol prior to the survey but intended to do so on the remainder of their night out) felt they would be when they left the city's nightlife that night was 6.9. The mean score reported by participants for the perceived level of drunkenness that people reach on a night out in the city centre was 8.0.

These scales of drunkenness were grouped into two levels: low (scores one to five) and high (scores six to ten). The majority (92.5%) thought people on a night out in the city centre typically reached a high level of drunkenness. At the time of the survey, under a quarter (21.8%) of drinkers reported their current level of drunkenness as high, while 74.0% of drinkers (including those who had not drunk prior to survey participation but intended to do so during the remainder of the night) expected their level of drunkenness to be high when they left the city's nightlife that night.

Figure A2 shows the median alcohol units drunk prior to survey participation by drinkers reporting low and high scores for each drunkenness statement. Those who reported high scores for each of the following drunkenness statements drank significantly more units than those reporting low scores: current drunkenness (high, 15.7 units; low, 8.0; $p < 0.001$); expected drunkenness upon leaving the city's nightlife (high, 10.2; low, 5.1; $p < 0.001$); and other nightlife users level of drunkenness (high, 10.0; low, 4.5; $p < 0.05$).

Participants were then asked how much they agreed or disagreed with a range of statements relating to drunkenness using a five point scale from strongly agree to strongly disagree. The majority (95.5%) of participants agreed (strongly agree and agree) that getting drunk is socially acceptable in Liverpool's nightlife. Nearly nine in ten (88.7%) participants agreed most nightlife users drink at home/a friend's home before a night out. Approximately half of participants agreed that a good night out means getting drunk (47.7%) and that drunk people should be able to obtain more alcohol (48.1%). Approximately half of all participants also agreed that it is easy for people who are drunk to enter nightlife venues (50.4%) and that bar staff will serve alcohol to someone who is already drunk (55.1%). Seven in ten (69.2%) participants agreed the city centre was a safe place to go for a night out, while half of all participants agreed that the authorities do not tolerate drunken behaviour in the city's nightlife (48.9%). Over four in ten (44.7%) participants agreed that not providing people who are drunk with more alcohol would improve nights out and that people who get drunk ruin the night out for other people (43.2%).

Figure A1: Participants' perceptions on their and other nightlife users' level of drunkenness, post-intervention survey 2017

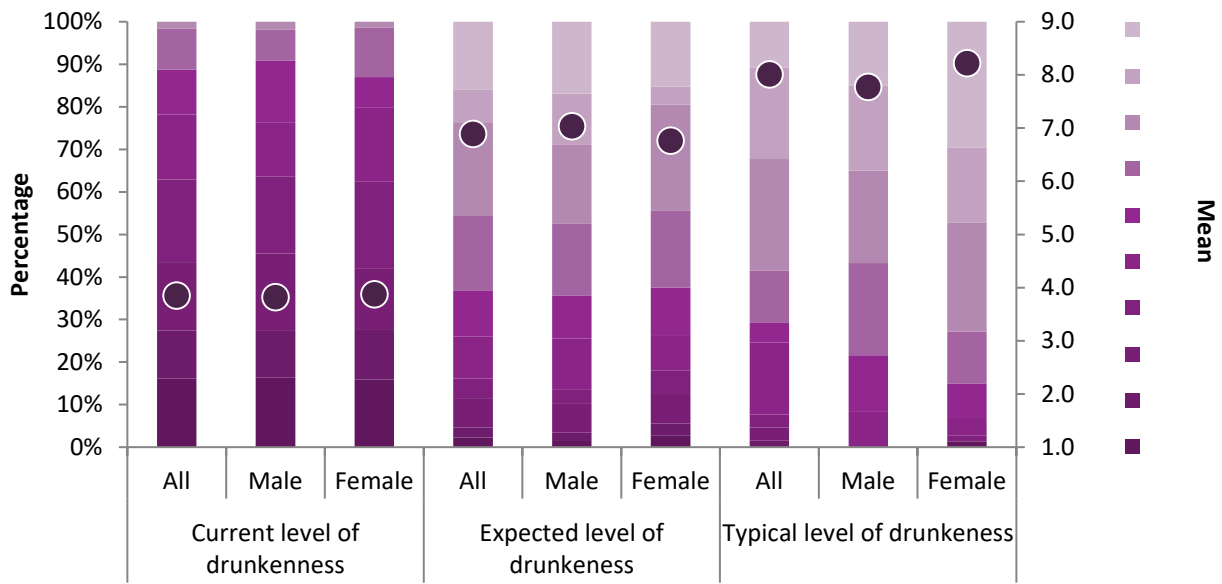
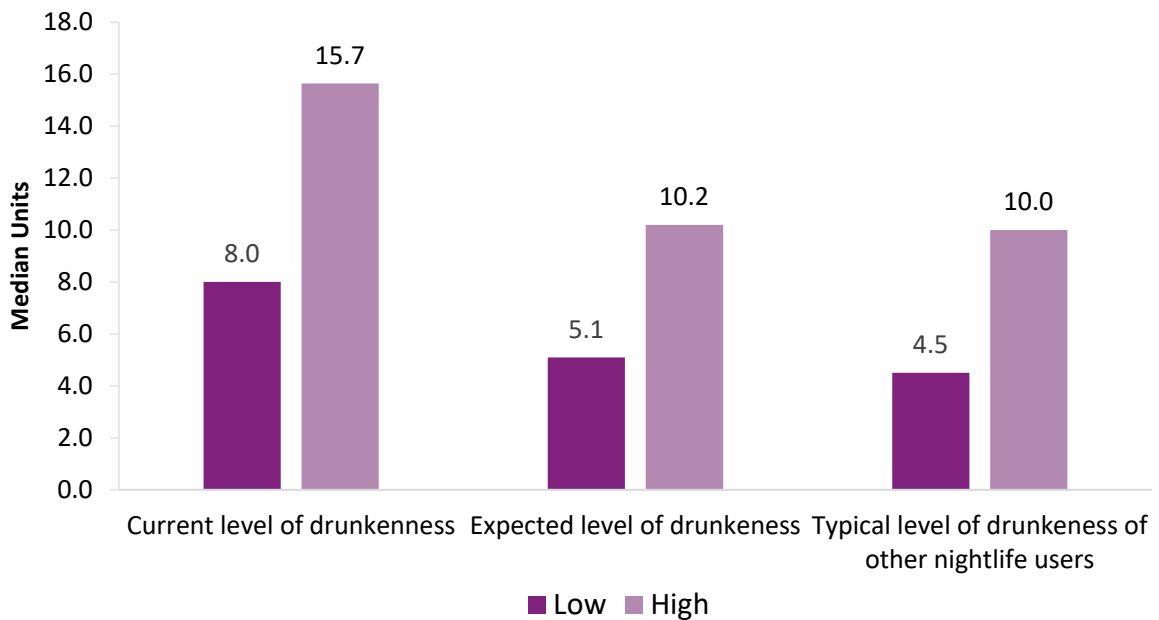


Figure A2: Median alcohol units consumed up to the point of the survey by drinkers reporting a low (1-5) or high (6-10) level of drunkenness¹⁰ for each statement, post-intervention survey 2017



¹⁰ Drunkenness was rated on a scale of one to 10, with one being completely sober and 10 being very drunk. Ratings of one to five were classified as a low rating and ratings of six to 10 as a high rating.

Perceptions and awareness of DLEM intervention 2017

One fifth (20.5%; n=27) of post-intervention survey participants reported being aware of the Drink Less Enjoy More intervention. All participants were then shown a campaign poster, informed about the intervention, and asked whether they had seen the posters anywhere. An additional 18 participants recognised the posters and reported being aware of the intervention, thus overall, 34.1% of respondents were aware of the intervention (compared to 17.2% following the 2014 pilot phase, and increased from 2016 awareness levels). Of the respondents who were aware of the intervention, the majority reported having seen the intervention posters (22.2% in a venue; 4.4% at a bus stop; 55.6% elsewhere). One quarter of participants who were aware of the intervention had seen the campaign on social media (26.7%) or heard a radio advert/discussion (24.4%). Participants reported also being made aware of the intervention via bar runners (11.1%), staff badges, stickers or t-shirts (6.7%), and newspaper or magazine articles (2.2%).

Participants who were aware of the intervention were asked how much they agreed with a range of statements about the intervention (Figure A3). Seven in ten (70.3%) respondents agreed (strongly agreed/agreed) that the campaign demonstrated that people who were drunk in venues would not get served more alcohol. Four in ten (45.9%) participants agreed that the intervention would make them more likely to come on a night out in Liverpool City Centre, with over half (56.8%) of participants aware of the intervention reporting the campaign would make them feel safer on a night out in Liverpool. Further, over four in ten participants agreed the campaign would make them drink less alcohol before coming on a night out (43.2%) and while in bars on a night out in Liverpool City Centre (45.9%).

Figure A3: Participants’ perceptions of the Drink Less Enjoy More intervention, post-intervention survey (2017)



