Public Health England

Protecting and improving the nation's health

Local Alcohol Consumption Survey National Report

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Executive summary

At the local authority level, there is a lack of reliable information about alcohol consumption, primarily because of the prohibitive cost of collecting this data for all local authorities. In order to address the need for local data in a cost effective manner, Public Health England (PHE) commissioned Ipsos MORI through a competitive tendering process to collect data for a sample of local authorities which were chosen to provide coverage of all regions and types of local authority.

Data for 25 local authorities were collected between 29 February and 25 April 2016 using a postal survey methodology. Data were collected for 9,683 individuals, an average of 387 responses per authority.

In addition to the postal responses, in two local authorities (Middlesbrough and East Sussex) the survey was also conducted through 604 face-to-face interviews. Comparing results from the two modes of data collection suggests that postal surveys offer a more cost effective mechanism for data collection without any obvious detrimental impact on data quality.

To test the robustness of the survey data that had been collected at a local level, comparisons were made with results from published sources at a national level. This showed a high degree of consistency for both drinking frequency and levels of risk (measured via the Alcohol Use Disorders Identification Test[1] [AUDIT]).

Although the primary purpose of the survey was to provide local authority level data, there were a number of new questions asked in the survey which provide additional insight at a national level. In particular, the following results were observed:

- those with parental responsibility for children in their household were less likely to be drinking at increasing and higher risk
- average AUDIT scores reduced with increasing age
- adults in the highest AUDIT group (who show signs of possible alcohol dependence) drank on average 59 units of alcohol a week and were more likely to drink strong beer or cider. They were also more likely to drink most of their alcohol at home
- Awareness of Chief Medical Officer's guidelines on low risk drinking increases with age
- 10% of respondents had participated in a campaign to reduce alcohol consumption with Dry January the most frequently cited campaign.

[1] https://www.alcohollearningcentre.org.uk/Topics/Latest/AUDIT-Alcohol-Use-Disorders-Identification-Test/

Analysis of the results by local authority revealed a wide variation in behaviour between different local authorities. Even local authorities which were geographically close such as Leicester and Nottinghamshire had different profiles of drinking behaviour. This reinforces the need to provide intelligence at the local authority level and the limitations of averaged regional data for local action. However, the estimated cost of running a similar survey for all upper tier local authories is around £500,000 and it seems unlikely that any one body would be able to fund this in the foreseeable future.

It wasn’t possible to generalise the survey results for local authories included in the survey to areas which were not included. However, in order to understand how different combinations of demographic variables affect the likelihood of being a drinker and of drinking at increasing or higher risk, decision tree models have been built for abstainers and AUDIT category. These models illustrate that the most important factors determining levels of abstention are ethnicity, sex, employment status, age and the presence of children in the household. Among those who drink, the most important factors determining whether someone drinks at increasing or higher risk are age, sex, relationship status and the presence of children in the household.

1.0 Background and aims

In order to take effective action on alcohol-related harms and to ensure this action is appropriately targeted, we need to understand levels and patterns of alcohol consumption which can vary significantly between different sub-populations.

At a national and regional level we are able to use population surveys to measure these differences and consider the implications for policy and intervention. However, at local authority level, there is a lack of reliable information.

The local consumption survey was designed as a pilot covering a sample of local authorities which were chosen to provide coverage of all regions and type of local authority. The aims of the survey were:

- to provide reliable consumption estimates for a large, representative sample of local authorities
- to provide a mechanism for validating local authority estimates of dependent drinkers produced by Sheffield University under contract to PHE and other modelled estimates of alcohol consumption by local authority
- to assess the feasibility of using data from sampled local authorities to infer consumption patterns in local authorities which were not sampled

Data for 25 local authorities were collected by Ipsos MORI under a competitively tendered contract to Public Health England between 29 February and 25 April 2016.

This report summarises the results from the survey at a local and national level and discusses the use and relevance of the data for local planning.

2.0 Survey methodology

2.1 Mode of data collection

The majority of the data were collected via a postal survey as this is the most cost-effective data collection methodology[2]. However, in order to test the robustness of the postal data, for two local authorities (Middlesbrough and East Sussex) an identical face-to-face survey was undertaken in addition to the postal survey. A comparison of the results from the two modes of collection can be found in Appendix A.

2.2 Questionnaire development

Initial development of the questionnaire began in December 2015. Where possible, questions were adopted or adapted from existing national surveys. This had the advantage of ensuring that comparable data would exist to compare with survey estimates and that the questions had already been successfully tested and used elsewhere.

Five questions were adapted from the World Health Organization's Alcohol Use Disorders Identification Test (AUDIT). Other questions were adapted from the Health Survey for England (HSE). Where data had not been previously collected on certain topics, Ipsos MORI designed new questions which were cognitively tested.

Two rounds of cognitive interviews were undertaken in December 2015 and January 2016 to test the comprehension of the questions and the ease of recall of the information requested. As a result of feedback from the cognitive interviews some questions were simplified and adapted before the questionnaire was finalised. A copy of the final questionnaire can be found in Appendix B.

2.3 Sampling – postal survey

Twenty five upper tier and unitary authorities were selected for inclusion in the survey using a pragmatic approach to ensure all Government Office Regions and Office for National Statistics (ONS) local authority types[3] were included in the sample. The 25 local authorities that were surveyed are listed in Table 1.

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[2] The application of alternative modes of data collection on UK Government Social Surveys, Office for National Statistics, 2010

[3] The ONS area classification process places each of the 391 UK local authority districts into different groups based on their 2011 Census characteristics. The clustering process uses a range of socio-economic variables covering demographic structure, household composition, housing, socio-economic character and employment. For more information see: www.ons.gov.uk/methodology/geography/geographicalproducts/areaclassifications/2011areaclassifications/methodologyandvariables

Table 1. Local authorities selected to participate in the local consumption survey

Local authority name	Region	ONS area type
Leicester	East Midlands	Business and Education Centres
Nottinghamshire	East Midlands	N/A
Luton	East of England	Multicultural Suburbs
Norfolk	East of England	N/A
Peterborough	East of England	Growth Areas and Cities
Greenwich	London	London Cosmopolitan Suburbia
Hounslow	London	London Cosmopolitan Suburbia
Merton	London	London Cosmopolitan Suburbia
Middlesbrough	North East	Manufacturing Traits
South Tyneside	North East	Mining Heritage
Blackpool	North West	Coastal Resorts and Services
Cheshire West and Chester	North West	Rural England
Stockport	North West	Mining Heritage
East Sussex	South East	N/A
Medway	South East	Growth Areas and Cities
West Berkshire	South East	Prosperous England
Bath and North East Somerset	South West	Heritage Centres
Cornwall	South West	Rural Coastal and Amenity
Wiltshire	South West	Prosperous England
Staffordshire	West Midlands	N/A
Telford and Wrekin	West Midlands	Manufacturing Traits
Wolverhampton	West Midlands	Growth Areas and Cities
East Riding of Yorkshire	Yorkshire and The Humber	Rural Hinterland
Kingston upon Hull	Yorkshire and The Humber	Business and Education Centres
Rotherham	Yorkshire and The Humber	Mining Heritage

Predicted response rates for each participating local authority were estimated using response data from the GP Patient Survey[4] (GPPS), a national survey that also uses a postal methodology. These modelled estimates were used to identify how many addresses would need to be sampled in order to generate 500 responses from each local authority. Addresses were then selected from the Royal Mail's Postcode Address File (PAF) using a random start and fixed interval within each local authority.

The fieldwork for the postal survey ran from 29 February to 25 April 2016 and involved an initial questionnaire mailing with a cover letter explaining the research, a postcard reminder, and a full reminder pack containing a second copy of the questionnaire.

[4] https://www.england.nhs.uk/statistics/category/statistics/gp-patient-survey/

2.4 Sampling – face-to-face survey

Two local authorities out of the 25 selected for the postal sample were chosen for the face-to-face survey. These two areas (Middlesbrough and East Sussex) were specifically chosen because of their different population profiles and different patterns of drinking. East Sussex is more affluent with an older demographic compared with Middlesbrough where there are typically high levels of binge drinking.

The face-to-face sample was selected from the Postcode Address File. Nineteen sample points were selected within East Sussex and Middlesbrough and interviewers were provided with a list of all addresses in these areas. This list was cross-checked against the postal sample and an exclusion list created for each area. This ensured that face-to-face interviewers did not attempt to complete an interview at any address which had already been invited to participate in the postal survey. Interviewers were also provided with a quota sheet containing targets for age, sex and working status which were set according to the population profile of each local authority.

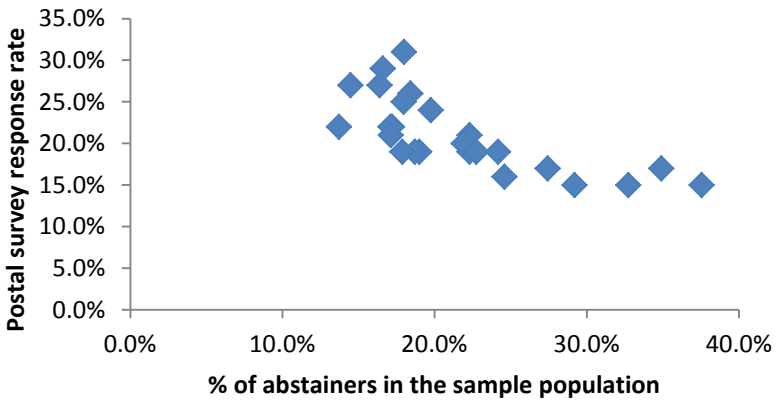
The face-to-face survey was administered within participant's homes by a member of Ipsos MORI's field team. It was administered using a Computer Assisted Personal Interviewing (CAPI) machine, with large sections of the interview being completed by the respondent themselves. Interviewers occasionally used showcards as aids to prompt participants. The use of self-completion for many of the questions helped to avoid issues around miscommunication between participants and interviewers, as well as allaying participant concerns around privacy or confidentiality of the information that they were providing. It also ensured that the face-to-face mode was as similar to the postal mode of the survey as possible.

2.5 Response rates

After data cleaning, 9,683 completed postal responses were achieved, a response rate of 20%. Despite sending more reminders than originally planned, the average number of postal responses for each local authority was 387, 23% lower than the original target number of 500.

Figure 1 compares the survey response rates with abstention levels. Areas with the lowest response rates tend to be areas with high levels of abstention. In the design of the questionnaire we did consider this issue and added a question to ask about reasons for abstention at the beginning of the questionnaire. It is perhaps understandable that communities which typically don't drink alcohol would be less inclined to complete a postal survey about alcohol consumption. The full list of response rates per local authority can be found in Appendix C.

Figure 1. Correlation between response rate and levels of abstainers



A target of 300 interviews was set for each local authority for the face-to-face survey with 305 valid surveys conducted in East Sussex and 299 in Middlesbrough.

2.6 Weighting

The analyses presented have been weighted using census data to adjust for differences between the profile of the achieved sample and the population profile in the local authority. Ipsos MORI provided local authority-level weights based on sex, age (in three groups) and ethnicity (white/non-white). In order to prevent over-weighting of some cases, which could skew the results, a capped maximum weight of five was applied to the data. PHE analysts calculated an England-level weight for the national analyses. The process followed is outlined in Appendix D.

2.7 Limitations

The chosen methodology has the following limitations which have the potential to affect the robustness of the results:

i) The data have been collected through a sample survey. The achieved sample was 20% overall but was higher for households with older people and lower for households with young people. The low response rate is particularly important when considering comparisons with other data sources, for example the Health Survey for England which achieves a response rate around 60%. Any systematic biases in non-response related to alcohol consumption will affect the robustness of comparative analyses.

ii) It is widely acknowledged that household surveys under-estimate population-level alcohol consumption with estimates suggesting UK surveys record between 55% and 60% of consumption compared with actual sales under-recorded in household surveys[5].

[5] Goddard E. Obtaining information about drinking through surveys of the general population. National Statistics Methodology Series No. 24. ONS, London, 2001

It is therefore reasonable to assume that the data collected for this survey will be an under-estimate.

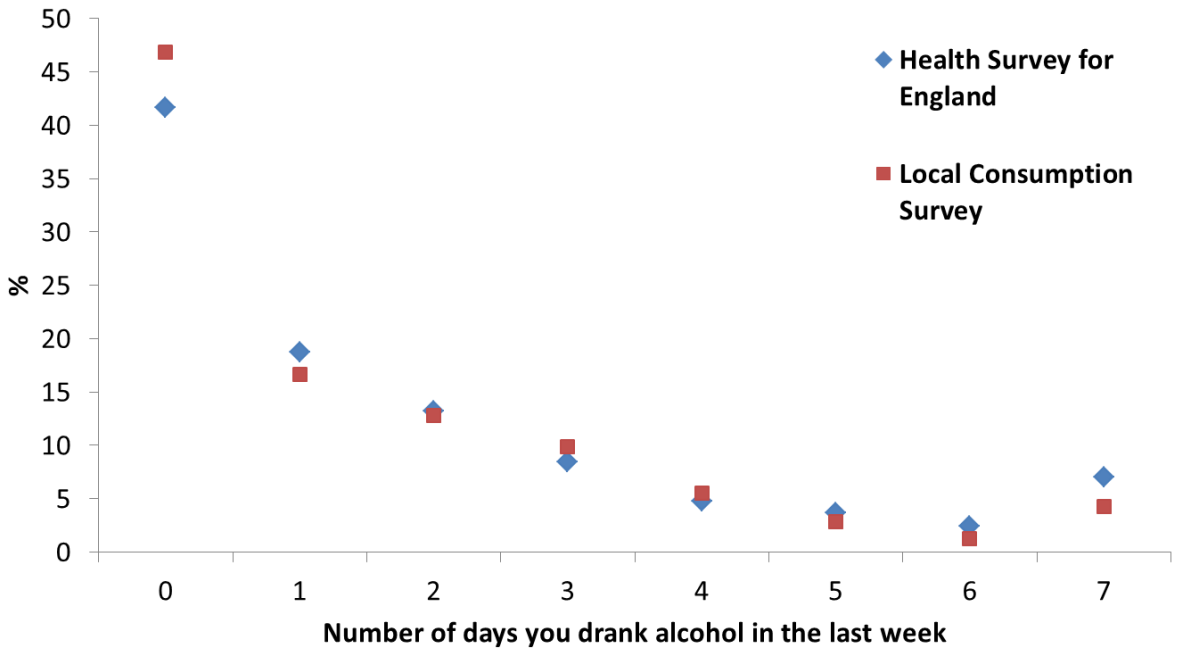
3.0 National analysis and results

Patterns of alcohol consumption at a national level are frequently reported through ongoing National Statistics surveys such as the Health Survey for England.[6] Therefore, in this section of the report, there is a focus on the data which is not routinely available through other sources. Where possible, a comparison of results from the local consumption survey and established sources is also provided to demonstrate the robustness of the local consumption survey results.

3.1 Drinking frequency

Figure 2 shows the distribution of responses to the survey question which asked how many days in the previous week the respondent drank alcohol. A comparison with the 2014 Health Survey for England data is provided and shows a close correlation. Almost half of respondents said that they didn't drink at all in the previous week.

Figure 2. Number of days when alcohol was consumed in the previous week, comparison of Health Survey for England 2014 and Local Consumption Survey data



Source: Health Survey for England 2014, PHE local consumption survey

[6] www.content.digital.nhs.uk/catalogue/PUB22610/HSE2015-Adult-alc.pdf

3.2 Abstention rates and reasons for abstaining from alcohol

Of those surveyed, 21% said that they never drank alcohol. This was fairly consistent across age groups with the exception of the oldest group (75+) where 35% were abstainers. Women were more likely to abstain than men (24% compared with 19%). These figures are slightly higher than equivalent data from the Health Survey for England (HSE) where 17% reported not drinking in 2015. However, the HSE asks an additional question which picks up very occasional drinkers. These drinkers may have been classified as abstainers in the local consumption survey.

Those who said that they never drank alcohol were asked why they abstain. The reasons that respondents said were very or extremely important factors behind their decision to abstain are shown in Table 2 and Table 3. Respondents had the option to select multiple reasons.

Almost two-thirds of respondents said that they didn't drink alcohol because they didn't want to act drunk and a similar proportion said that drinking made them feel vulnerable. Abstinence for medical reasons increased with age, while younger respondents were much more likely to say they abstained for religious or spiritual reasons.

Table 2. Very or extremely important reasons for abstaining, by sex

Reason	Men	Women	All
Don't want to act drunk	58%	65%	62%
Drinking makes me vulnerable and at risk of harm	51%	65%	59%
Don't like the taste or smell	37%	44%	41%
Medical reasons	35%	38%	37%
Spiritual or religious reasons	45%	25%	34%

Table 3. Very or extremely important reasons for abstaining, by age group

Reason	18-34	35-44	45-54	55-64	65+
Don't want to act drunk	67%	59%	57%	58%	64%
Drinking makes me vulnerable and at risk of harm	53%	62%	57%	62%	66%
Don't like the taste or smell	45%	49%	38%	38%	37%
Medical reasons	27%	32%	38%	43%	47%
Spiritual or religious reasons	46%	48%	27%	23%	20%

3.3. AUDIT scores

The local consumption survey includes the full Alcohol Use Disorders Identification Test (AUDIT). This questionnaire is used to identify possible or probable alcohol dependence. Scores can range from 0 to 40 but are typically grouped into four categories:

Group 1 - Score 0-7: low risk
Group 2 - Score 8-15: increasing risk
Group 3 - Score 16-19: higher risk
Group 4 - Score 20+: possible dependence

Figure 3 and Figure 4 show the distribution of AUDIT scores for men and women along with a comparison to the Adult Psychiatric Morbidity Survey[7] (APMS) 2014. This shows a very similar picture and is encouraging further evidence of the robustness of the results from the local survey. Overall, 72% of men and 87% of women from the local consumption survey fell into the low risk category.

Figure 3. Distribution of AUDIT scores for men

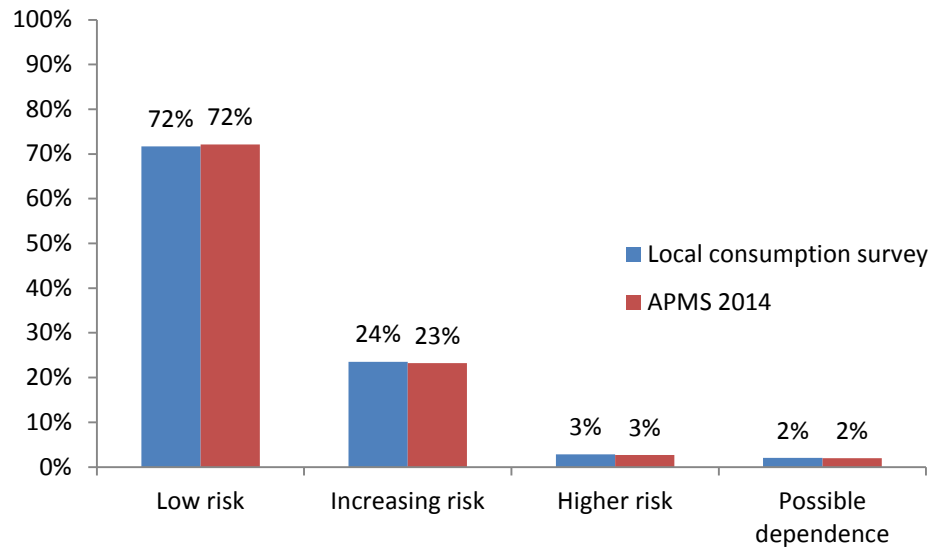
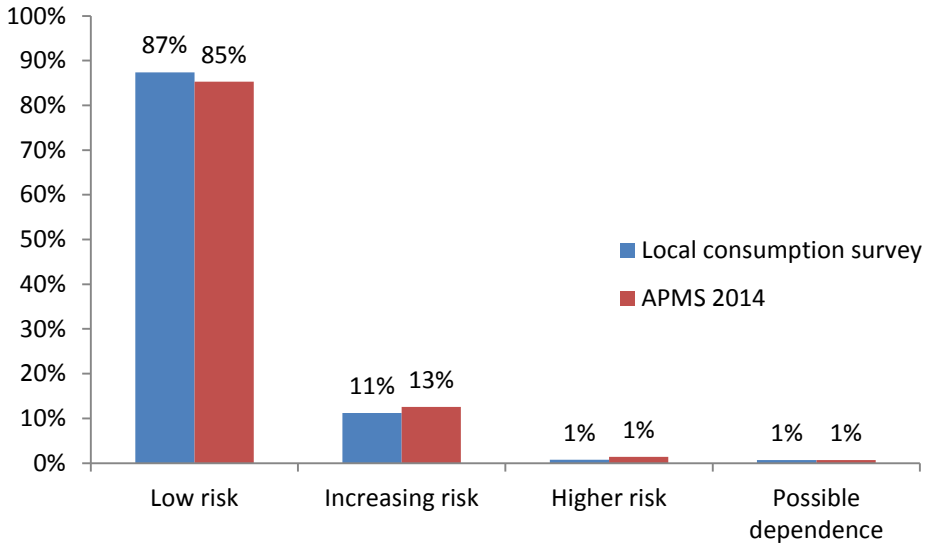


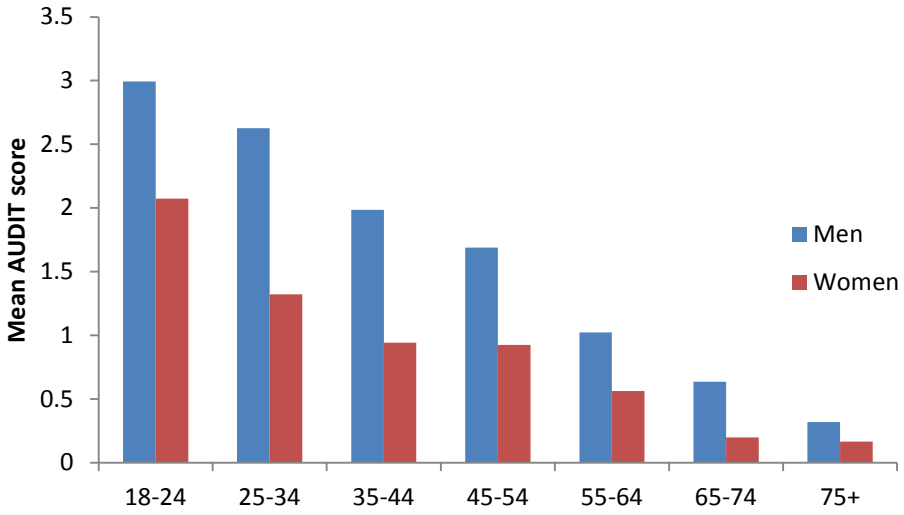
Figure 4.Distribution of AUDIT scores for women



[7] http://content.digital.nhs.uk/catalogue/PUB21748

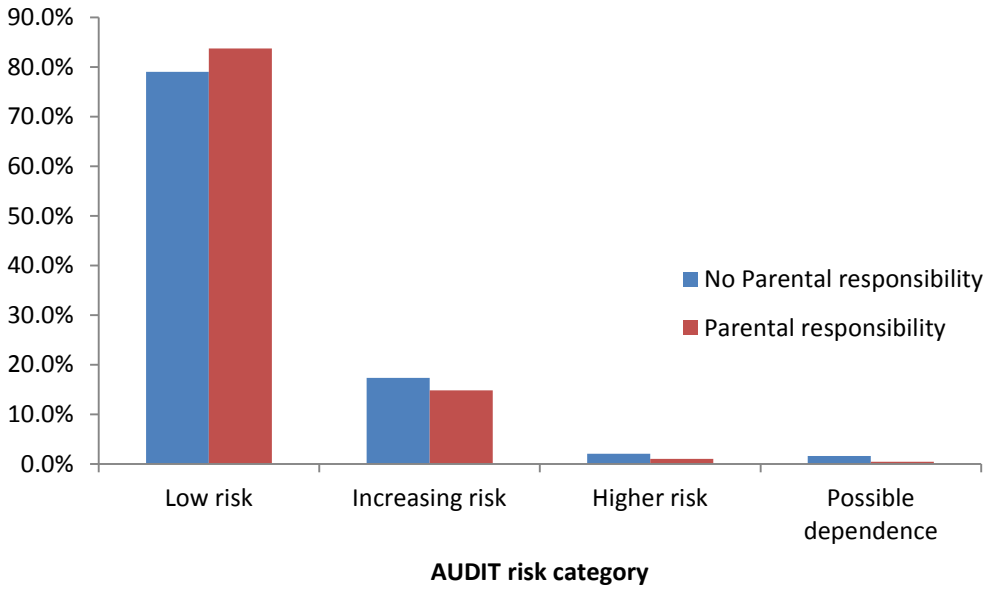
Figure 5 shows the mean AUDIT score for respondents who drank alcohol by sex and age group. The scores for women were consistently lower than the scores for men. The average score reduced in each age group with the mean score for men aged 18-24 being ten times higher than the average for men over 75.

Figure 5. Mean AUDIT score by age and sex



Adults with parental responsibility for children living in their household were less likely to have an AUDIT score over 7, so less likely to be drinking at increasing risk levels or above (Figure 6). Eighty four percent of respondents with parental responsibility were in the low risk AUDIT group compared with 79% in those without parental responsibility. The average AUDIT score for adults aged between 25 and 54 who drank alcohol was 2.1 for those without children living in the household compared with 1.1 for those who had children living in the household.

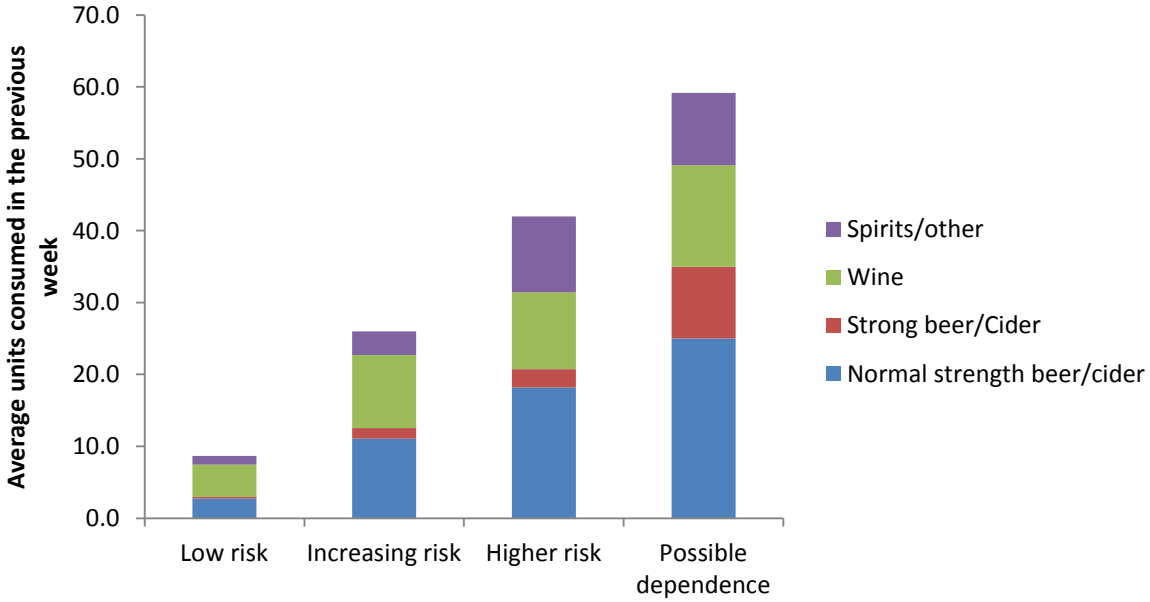
Figure 6. AUDIT category by parental status



Unsurprisingly, those in

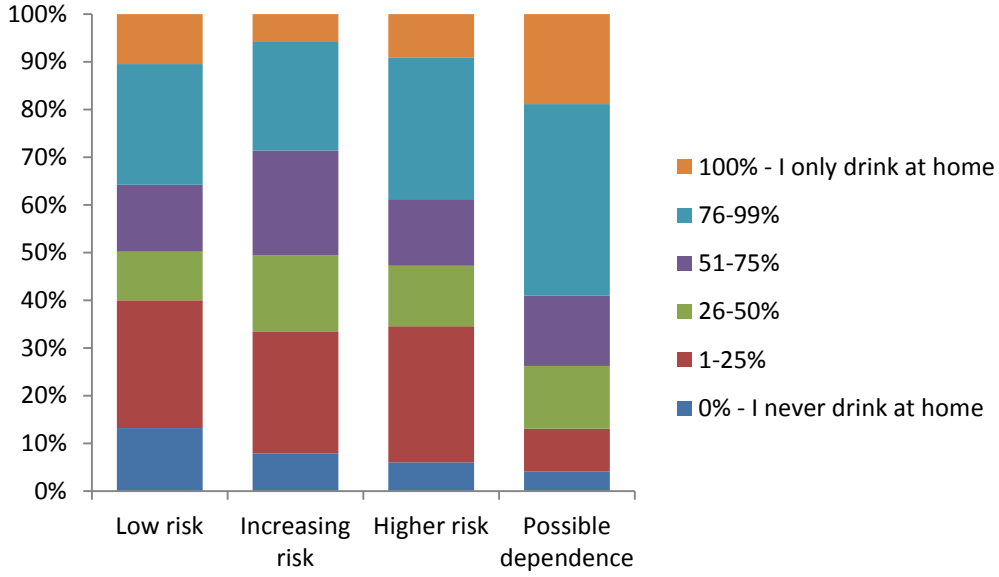
the highest AUDIT groups drank more units of alcohol per week. Figure 7 shows the average number of units consumed in the previous week for those who drank alcohol by AUDIT group and type of alcohol product. Respondents in the highest AUDIT category drank on average 59 units in the previous week compared with 9 for drinkers in the low risk category. Those in the highest groups were more likely to drink strong beer or cider and less likely to drink wine (as a proportion of all alcohol consumed).

Figure 7. Average units consumed in the last week by AUDIT group



Those in the highest AUDIT category were also more likely to consume the majority of their alcohol at home. Figure 8 shows the proportion of alcohol usually consumed at home by AUDIT category.

Figure 8. Proportion of alcohol usually drunk at home

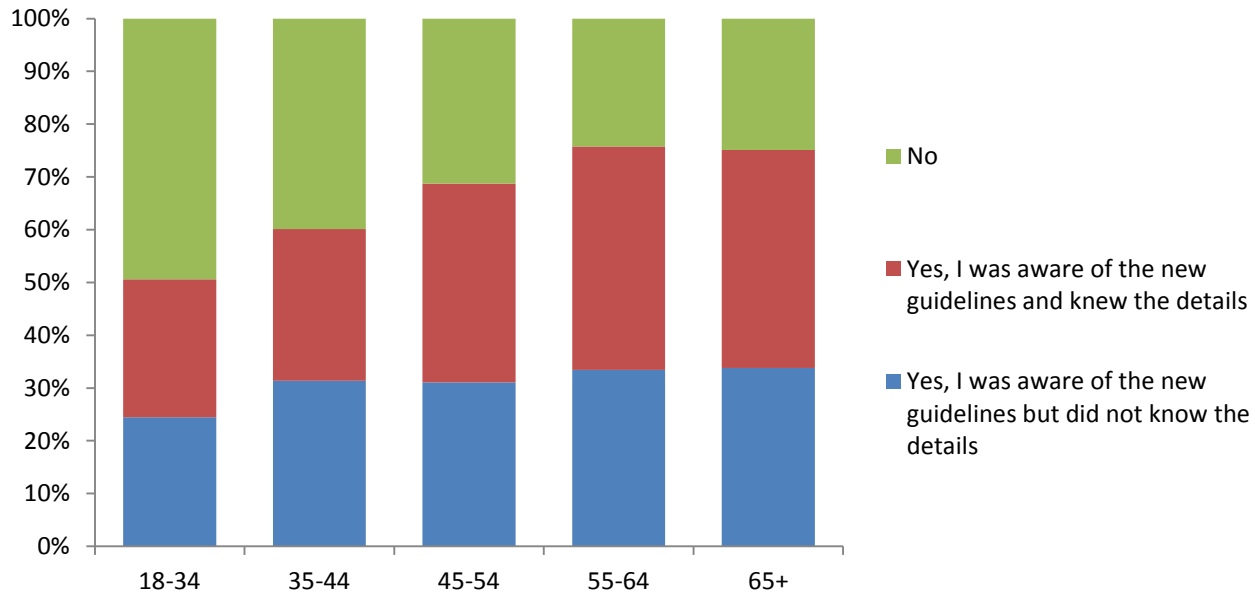


3.4 Government messaging and participation in campaigns

New Chief Medical Officer (CMO) guidelines on low-risk alcohol consumption were published in January 2016 [8]. Since the fieldwork for the local consumption survey was undertaken shortly after this announcement we took the opportunity to ask survey respondents about their awareness of the new guidelines and the likely impact they would have on their behaviour.

Figure 9 shows that awareness of the guidelines increased with age and that around 30% of respondents were aware of the guidelines but didn't know the details. Note: respondents were told in the question what the new guidelines were.

Figure 9. Awareness of the revised CMO guidelines by age group

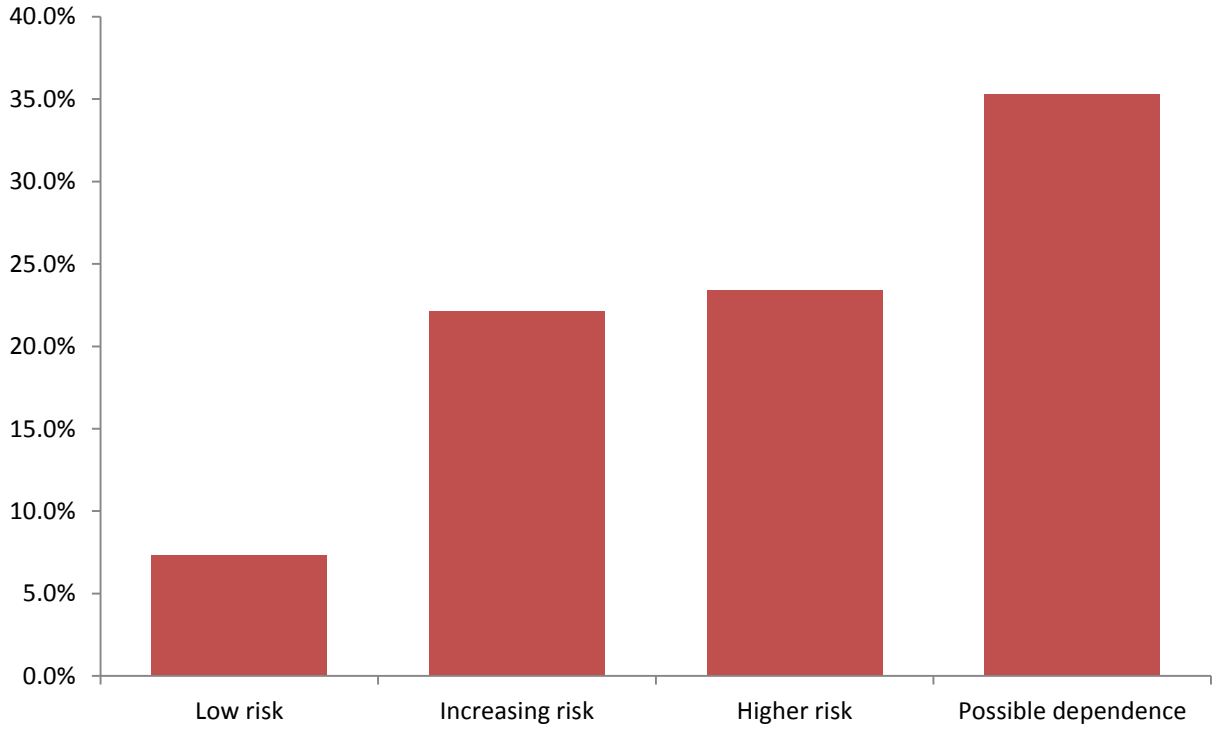


Respondents were also asked whether they had participated in any campaigns to reduce their drinking. Overall, 10.4% of respondents had participated in a campaign and 70% of those had specifically participated in Dry January[9]. The likelihood of participating in a campaign increased by AUDIT group. A third of respondents in the highest risk AUDIT category had participated in a campaign to reduce their drinking (Figure 10).

[8] https://www.gov.uk/government/consultations/health-risks-from-alcohol-new-guidelines

[9] https://www.alcoholconcern.org.uk/dry-january

Figure 10. The proportion of respondents who had participated in a campaign to reduce their drinking, by AUDIT category



4.0 Local authority analysis and results

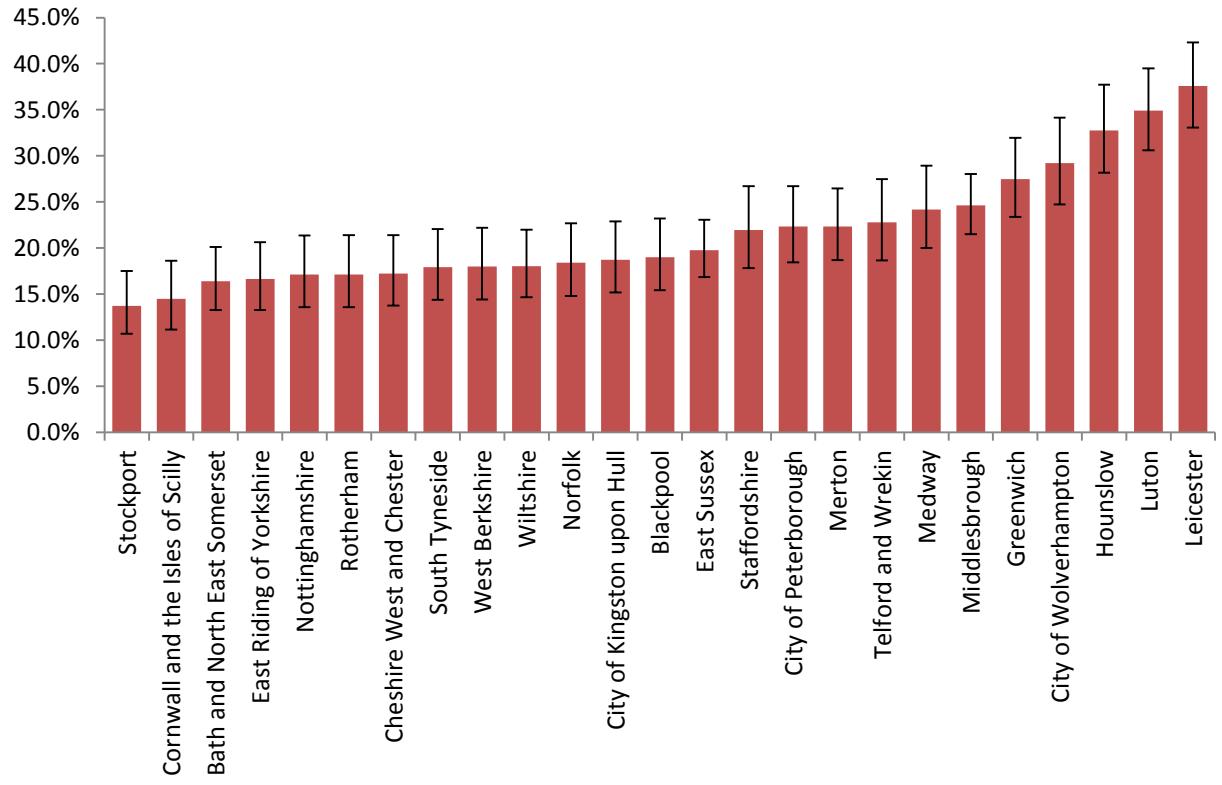
4.1 Variation between local authorities

The primary purpose of the local consumption survey was to collect data which was robust at a local authority level and to measure differences between local authorities. Each sampled local authority received a tailored analysis report and dataset for their area in September 2016. The charts below show the variation in responses between local authorities for core questions from the survey along with 95% confidence intervals (shown as error bars). The data presented in these charts is also provided in tabular form in Appendix E.

Figure 11 to 14 illustrate that significant variation existed between areas, even those that were geographically close such as Leicester and Nottinghamshire. It provides further evidence of the need to measure alcohol consumption at a local level and the limitations of averaged regional data to inform local planning.

Abstention rates varied from 14% in Stockport to 38% in Leicester (Figure 11).

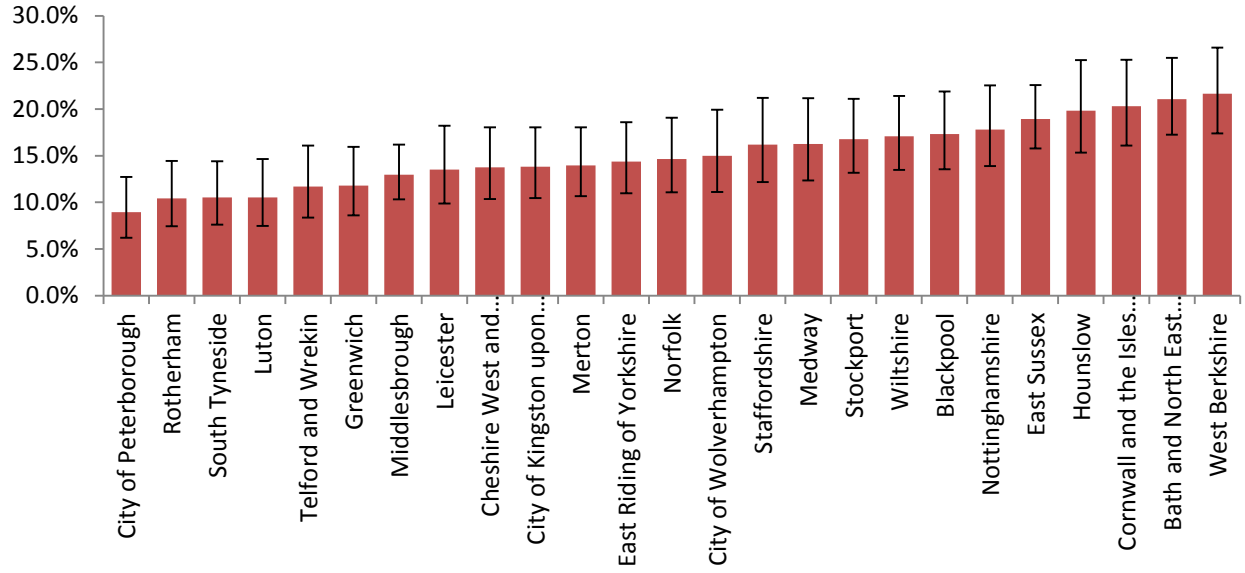
Figure 11. Rates of abstention by local authority



Error bars represent 95% confidence intervals

Rates of frequent drinking (amongst those who drink) varied from 9% in Peterborough to 22% in West Berkshire (**Error! Not a valid bookmark self-reference.**).

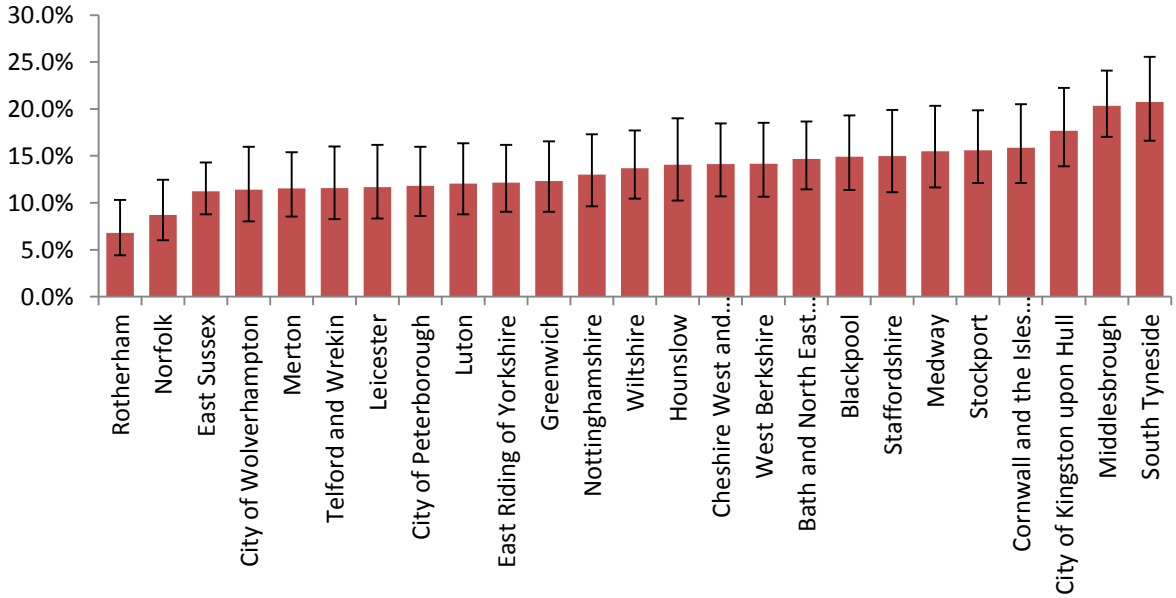
Figure 12. Percentage of drinkers who drink on 4 or more days a week by local authority



Error bars represent 95% confidence intervals

Binge drinkers (defined as women drinking more than 6 units and men more than 8 units in a single drinking occasion on a weekly basis or more often) ranged from 7% in Rotherham to 21% in South Tyneside (Figure 13).

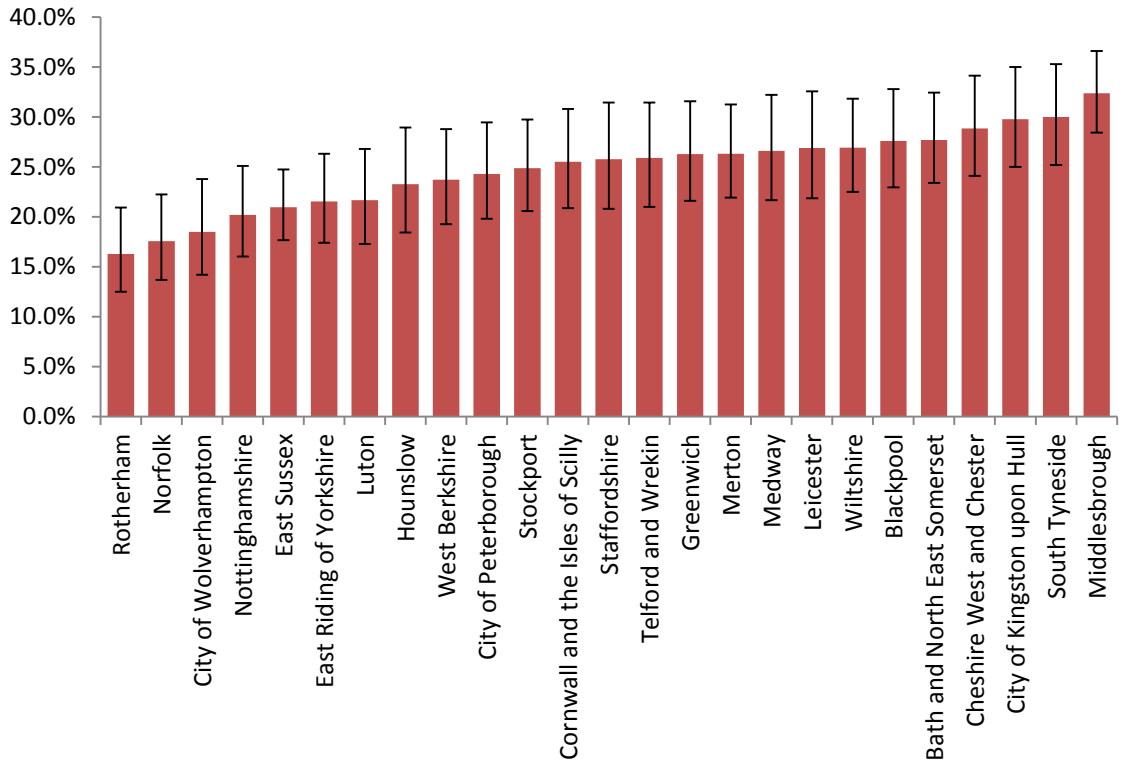
Figure 13. Binge drinkers by local authority (as a percentage of all drinkers)



Error bars represent 95% confidence intervals

The proportion of drinkers in AUDIT category 2 or more (increasing risk, higher risk or possible dependence) ranged from 16% in Rotherham to 32% in Middlesbrough (Figure 14).

Figure 14. Percentage of drinkers in AUDIT group 2 or more by local authority



Error bars represent 95% confidence intervals

4.2 Comparison with other sources

In March 2017 PHE published new data in the Local Alcohol Profiles for England [10] (LAPE) derived from the Health Survey for England (HSE). The HSE is a large annual household survey which asks questions on a range of health topics, including alcohol consumption. The sample size is insufficient to provide data below region level, however by combining four years of survey data from 2011 to 2014 we were able to construct three consumption measures for inclusion in LAPE at Upper Tier local authority level.

The measures included in LAPE are:

- % of abstainers

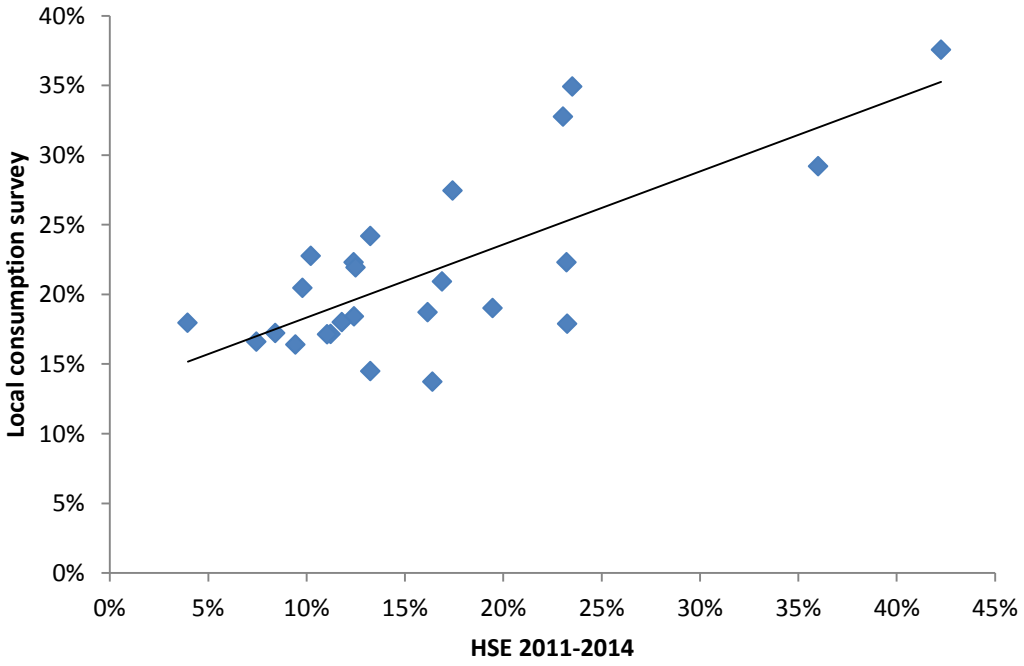
[10] https://fingertips.phe.org.uk/profile/local-alcohol-profiles

- % drinking more than 14 units per week
- % binge drinkers (women who drank more than 6 units and men who drank more than 8 units on their heaviest drinking day in the previous week)

The questions asked in the local consumption survey don't allow a direct comparison of usual drinking levels. However, we can compare abstention and binge drinking rates.

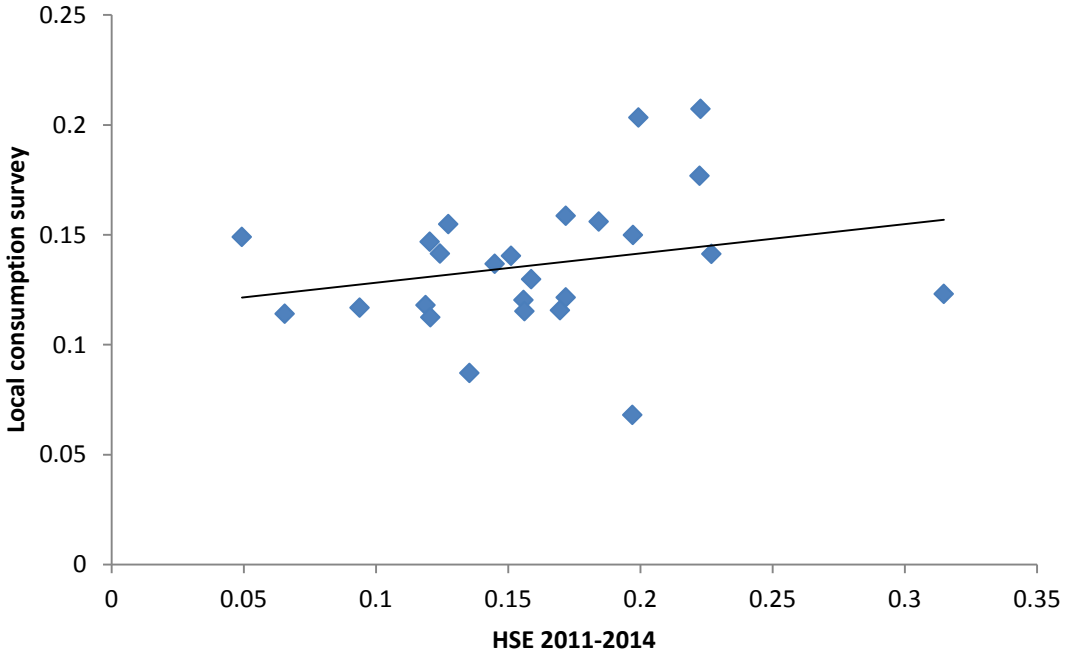
For abstainers there was a strong positive correlation between estimates from the HSE and the local consumption survey for the local authorities where we have data from both sources (Figure 15).

Figure 15. Correlation between the proportion of abstainers in the local consumption survey and Health Survey for England (2011-2014) – correlation coefficient 0.73



The definition of binge drinker differs between the two surveys. In the HSE data it is a measure of people who report actual binge drinking in the previous week whereas in the local consumption survey it is a measure of those who say they usually binge drink on a weekly basis. There is still a correlation between the two sources but it's weaker than the relation seen for abstainers (Figure 16).

Figure 16. Correlation between the proportion of binge drinkers in the local consumption survey and Health Survey for England (2011-2014) – correlation coefficient 0.24



4.3 Estimating consumption patterns for local authorities who weren't surveyed in the local consumption survey

One of the aims of the survey was to determine whether information about the local authorities who were included in the survey could be used to estimate consumption patterns in local authorities which weren't included.

It is well reported that alcohol consumption varies by demographic group.[11] For example men drink more than women and older people drink more frequently but are less likely to binge drink than young people. In certain ethnic groups a very small proportion of adults drink alcohol and there is also an income link with those in the highest income groups being more likely to drink and more likely to drink at increasing or higher risk levels.

The original intention was to try and develop a model using demographic information to estimate the proportion of adults in the population who would be drinkers and then the proportion of drinkers with an AUDIT score of 8 or more (category 2 or higher). We would then test the robustness of the model using the local authorities where we have direct estimates.

[11] www.content.digital.nhs.uk/catalogue/PUB22610/HSE2015-Adult-alc.pdf

A logistic regression model, using variables collected in the survey only, was built using backwards selection in R, first to estimate abstainers and then AUDIT group. Although several variables were found to be significant in both models, the overall explanatory power of the models was poor therefore making them unsuitable for estimating values in non-sampled local authorities.

Although we concluded that modelled estimates by local authority can't be reliably derived from the Local Consumption Survey data, we still wanted to use the information about the interaction between variables to analyse the likelihood of an adult being an abstainer or having an AUDIT score of 8 or more based on combinations of demographic variables. This information can then be used to highlight potential target segments in the local population.

SPSS was used to develop CHAID decision trees [12] for both abstainers and drinkers in the AUDIT categories 2+. CHAID analysis builds a predictive model, or tree, to help determine how variables best merge to explain the outcome in the given dependent variable. The development of the classification tree starts with identifying the target variable which can be considered the root of the tree. Using the chi-square test the CHAID analysis then splits the target into two or more categories that are called the initial, or parent nodes. Those nodes are further split until no additional statistically significant splits can be made.

The results from modelling abstainers and AUDIT category 2+ are shown in Appendix F.

The subgroup most likely to be an abstainer was non-white adults who were in a relationship and had children in the household, with 58.7% of this group abstaining compared with the survey average of 21.1%.

Overall, 20.1% of drinkers were assessed to be in AUDIT categories 2, 3 or 4. The sub-group with the highest proportion of drinkers in these groups were 18-34 year old men with no children in the household. Of this group, 54.2% were in AUDIT category 2 or higher.

[12] Chi-square Automatic Interaction Detector (CHAID) was a technique created by Gordon V. Kass in 1980. CHAID is a tool used to discover the relationship between variables. CHAID analysis builds a predictive model, or tree, to help determine how variables best combine to explain an outcome of interest.

5.0 Discussion

The original aims of the local consumption survey were:

- to provide reliable consumption estimates for a large, representative sample of Local Authorities
- to provide a mechanism for validating Local Authority estimates of dependent drinkers produced by Sheffield University under contract to PHE and other modelled estimates of alcohol consumption by local authority
- to assess the feasibility of using data from sampled local authorities to infer consumption patterns in local authorities which were not sampled

The first aim has been fully achieved and the collected data has provided useful and new intelligence for the 25 local authorities who were included in the survey. We have also established that a postal survey is a valid method of data collection for this type of data.

The validity checks conducted against established National Statistics sources have suggested that the collected data is of good quality and can therefore be used as an appropriate comparator for any future modelled results. For example estimates of the population in the “possible dependence” group can be compared with the dependence estimates from Sheffield University.

The results from the survey have provided clear evidence of variability between local authorities and the need to have intelligence at that level. However, attempts to model this data to enable estimates to be generated for local authorities that weren’t included in the survey were unsuccessful. This is not to say that other modelling approaches using different techniques and different datasets would not be valid.

The cost of running a survey similar in nature to the local consumption survey but covering all local authorities would be large (circa £500K) and it seems unlikely that any one body would be able to fund this in the foreseeable future. However, if individual local authorities had sufficient budget to survey their own populations, a tested questionnaire and methodology now exists which could be replicated locally. By using the same questionnaire as used for this survey, comparison could be made with results for other similar local authorities hence increasing the value of the local data.

In the absence of local authority-specific data, local authority public health teams can use information in the decision tree models (Appendix E) to target particular segments of their population where they might expect to find a high proportion of increasing and higher risk drinkers.

List of appendices

Appendix A – Comparison of face-to-face versus postal survey responses
Appendix B – Survey questionnaire
Appendix C – Response rates by local authority
Appendix D – Methodology for constructing an England weight
Appendix E – Statistical tables by local authority
Appendix F – Decision tree results for abstainers and AUDIT categories 2+

Appendix A. Comparison of postal and face-to-face survey responses

In Middlesbrough and East Sussex the questionnaire was administered both via a face-to-face and postal survey. In common with the other local authorities who were surveyed using the postal method, the postal responses were disproportionately represented by older people. The face-to-face survey was a quota sample and hence had a more representative spread of age groups in the achieved sample. Both samples have been weighted back to the local authority population to enable a fair comparison of results.

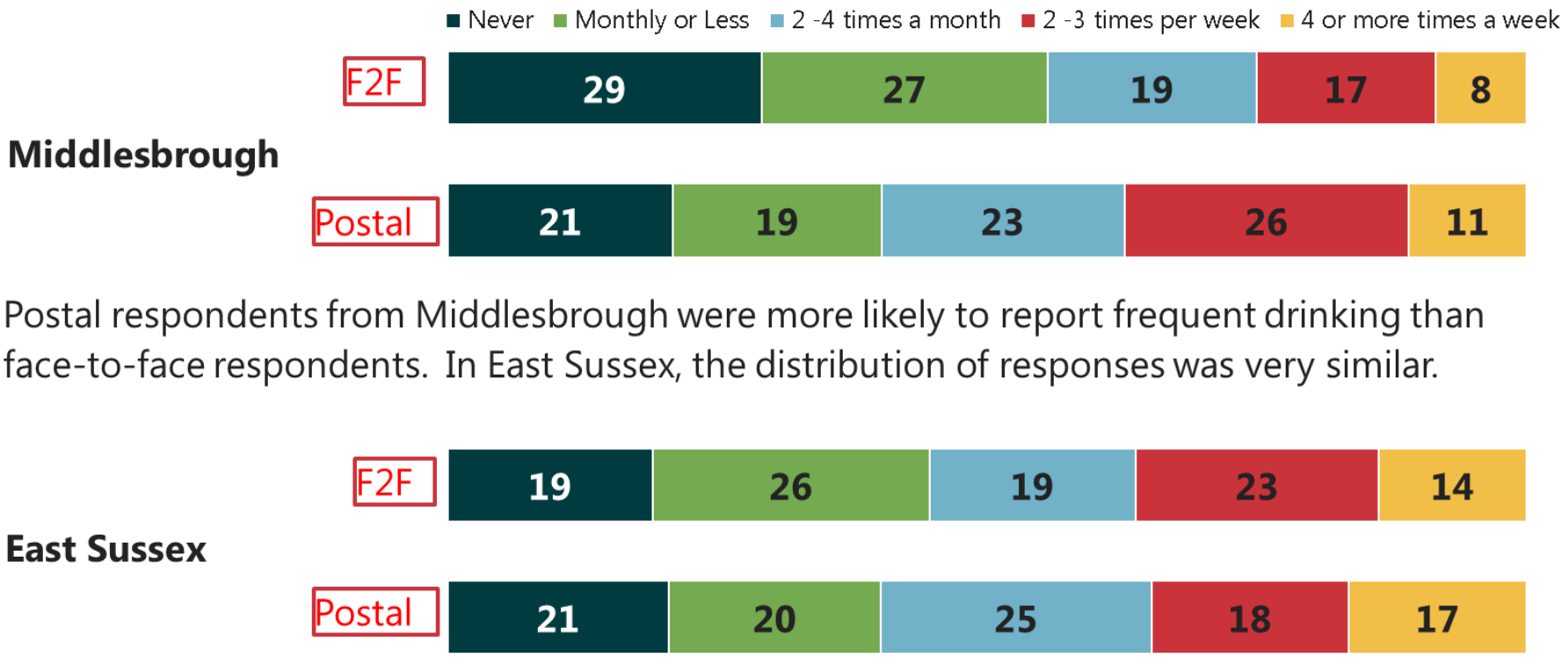
Figures 17 to 20 below illustrate the differences seen between the two data collection modes for the key questions of interest.

In summary, the responses are similar from the two data collection modes. For Middlesbrough there may have been some desirability bias in the face-to-face results with respondents being less likely to say that they drank very frequently. However, this wasn't seen across all questions and wasn't seen for East Sussex.

As this was a fairly small scale comparison of data collection methods it is not possible to conclude which mode provides the most robust responses. However, in light of the vast difference is data collection costs, it is interesting to note that the results were broadly in line across the majority of the survey; this suggests that postal surveys do provide a more cost effective mechanism for data collection.

Figure 17. Comparison of drinking frequency responses across face-to-face (F2F) and postal survey approaches in two local authorities

Q7. *How often do you have a drink containing alcohol?* Base: East Sussex 303 F2F, 330 postal. Middlesbrough 298 F2F, 367 postal.



Postal respondents from Middlesbrough were more likely to report frequent drinking than face-to-face respondents. In East Sussex, the distribution of responses was very similar.

Figure 18. Comparison of units drunk on a typical drinking day across face-to-face (F2F) and postal survey approaches in two local authorities

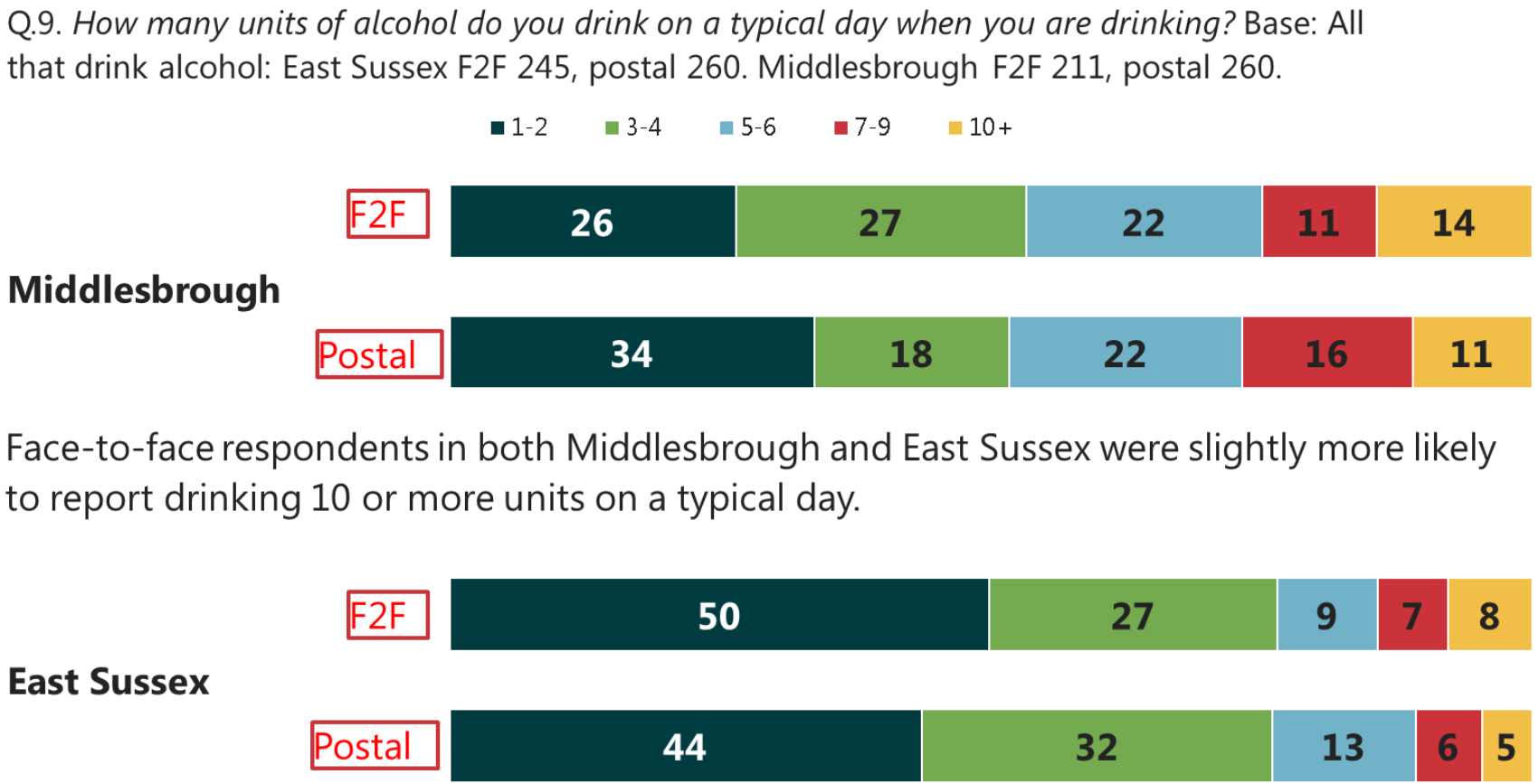
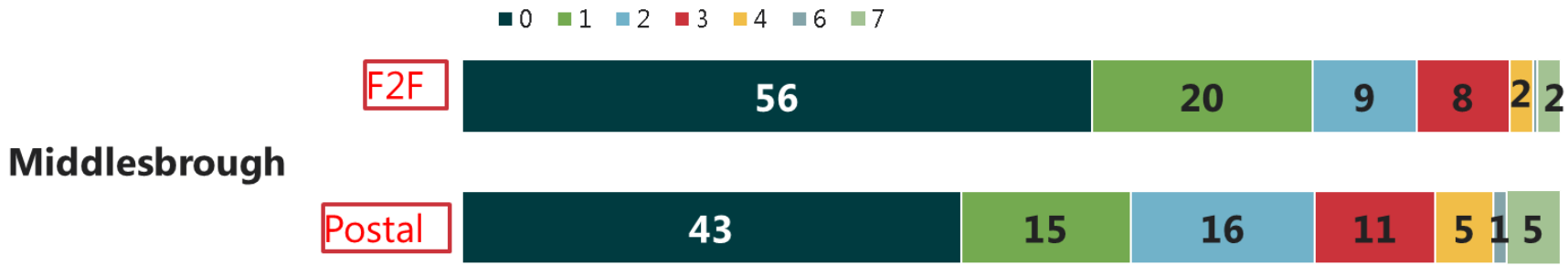


Figure 19. Number of days alcohol was drunk in previous week

Q11. *Thinking about the last seven days, ending yesterday, on which days, if any, did you have an alcoholic drink?* Base: All that drink alcohol: East Sussex 305 F2F, 346 postal. Middlesbrough 299 F2F, 373 postal.



Face-to-face respondents from Middlesbrough were less likely to report drinking in the previous week than postal respondents. In East Sussex, the distribution of responses was very similar.

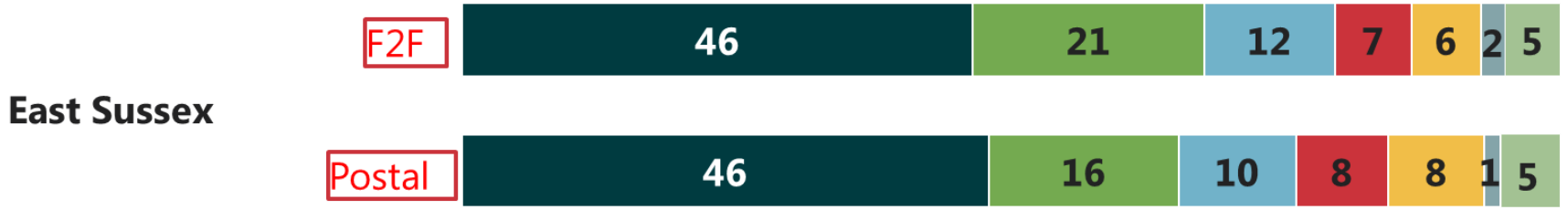
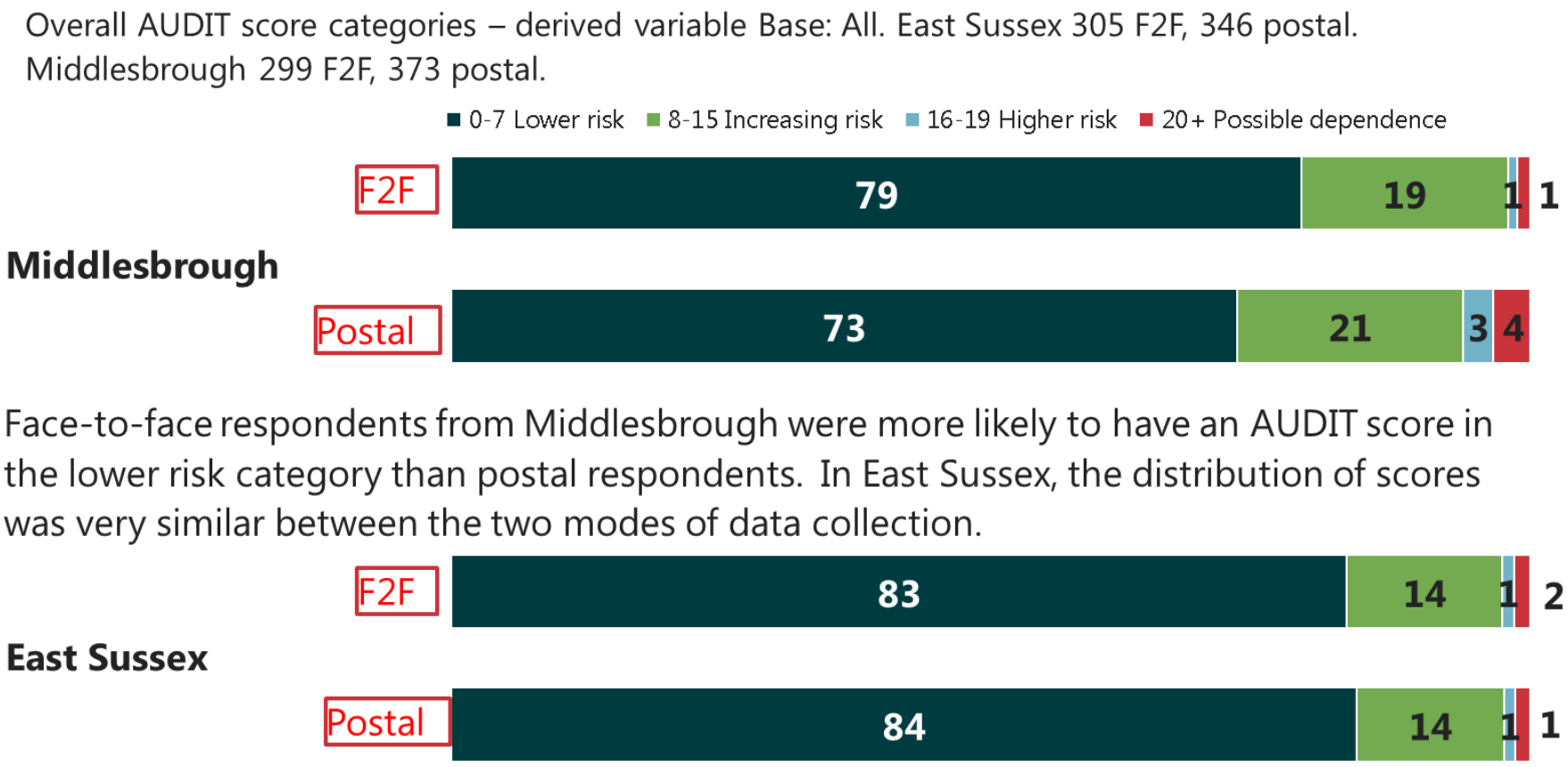


Figure 20. Distribution of AUDIT scores



Appendix B. Survey Questionnaire

Public Health England

Ipsos MORI

INSTRUCTIONS

1. Most of the questions can be answered by putting a tick in the box next to the answer that you want to give. Please use black or blue pen and make sure that your tick is inside the box.
2. If you make a mistake, fill in the box that was wrong and tick the box for the right answer.
3. The box you tick may instruct you to miss out a few questions. If there is no instruction, please continue to the next question.
4. Note that you may be asked to tick more than one box (as many boxes as are needed). Some of the questions will ask you to tick one box only.
5. Where you are asked to write any comments, please only do so within the comment boxes provided. Any other comments that you write outside these boxes will not be seen.

Please answer truthfully, and remember that anything you say will be completely confidential.

ABOUT YOU

We would like to know a little bit about you.

Q.1. How old are you?
PLEASE ✔ ONE BOX ONLY

- ☐ 18 – 24 years
- ☐ 25 – 34
- ☐ 35 – 44
- ☐ 45 – 54
- ☐ 55 – 64
- ☐ 65 – 74
- ☐ 75+

Q.2. And are you...
PLEASE ✔ ONE BOX ONLY

- ☐ Male
- ☐ Female

Q.3. Which of the following best applies to you?
PLEASE ✔ ONE BOX ONLY

- ☐ Married
- ☐ In a registered same-sex civil partnership
- ☐ Living together
- ☐ Single
- ☐ In a relationship
- ☐ Widowed
- ☐ Divorced
- ☐ Separated

Q.4. What is the total number of adults aged 18 and over living in your household (including yourself)?
PLEASE ✔ ONE BOX ONLY

- ☐ 1 – myself only
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9+

Q.5. What is the total number of children aged 17 and under living in your household?
PLEASE ✔ ONE BOX ONLY

- ☐ None — GO TO Q7
- ☐ 1 — GO TO Q6
- ☐ 2 — GO TO Q6
- ☐ 3 — GO TO Q6
- ☐ 4 — GO TO Q6
- ☐ 5 — GO TO Q6
- ☐ 6 — GO TO Q6
- ☐ 7 — GO TO Q6
- ☐ 8 — GO TO Q6
- ☐ 9+ — GO TO Q6

Q.6. Are you the parent / guardian of at least 1 child in your household?
PLEASE ✔ ONE BOX ONLY

- ☐ Yes
- ☐ No

YOUR USUAL DRINKING BEHAVIOURS

We would now like to ask you a few questions about drinking alcoholic drinks.
Your responses are important, even if you never drink alcohol.

Q.7. How often do you have a drink containing alcohol?

PLEASE ✔ ONE BOX ONLY

☐ Never	GO TO Q8
☐ Monthly or less	GO TO Q9
☐ 2 – 4 times a month	GO TO Q9
☐ 2 – 3 times per week	GO TO Q9
☐ 4 or more times a week	GO TO Q9

Q.8. The following items are reasons given by people for not drinking alcoholic beverages on a particular occasion or for not drinking alcohol at all. Please indicate how important each statement is to you personally as a reason for not drinking, by choosing the appropriate response.

PLEASE ✔ ONE BOX ON EACH LINE

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
I do not like the taste or smell of alcoholic drinks	☐	☐	☐	☐	☐
I don't want to act like people I've encountered who were drunk	☐	☐	☐	☐	☐
Being intoxicated or drunk may make me vulnerable and put me at risk for harm	☐	☐	☐	☐	☐
I do not drink alcoholic drinks for medical reasons	☐	☐	☐	☐	☐
I have or used to have a drinking problem	☐	☐	☐	☐	☐
Drinking alcoholic drinks is against my spiritual and religious beliefs	☐	☐	☐	☐	☐

IF YOU NEVER DRINK ALCOHOL (CODE 1 AT Q7) PLEASE GO TO Q20

One unit is:

			
Half a pint of regular beer, lager or cider	A single measure of spirits...	...with or without a mixer	A small glass of sherry

Each of these is more than one unit:

 = 2	 = 3	 = 1.5	 = 2	 = 4	 = 2	 = 9
A pint of 3.5% beer, lager or cider	A pint of 5% beer, lager or cider	A 330ml bottle or can of 4.5% alcopop or lager	A 500ml can of 4% lager or strong beer	A 500ml can of 8% lager	A medium (175ml) glass of 11% wine	A bottle of 12% wine

Q.9. How many units of alcohol do you drink on a typical day when you are drinking?

PLEASE ✔ ONE BOX ONLY

- ☐ 1 – 2
- ☐ 3 – 4
- ☐ 5 – 6
- ☐ 7 – 9
- ☐ 10 or more times a week

Q.10. How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?

PLEASE ✔ ONE BOX ONLY

- ☐ Never
- ☐ Less than monthly
- ☐ Monthly
- ☐ Weekly
- ☐ Daily or almost daily

LAST WEEK

The next few questions ask about what you have drunk in the last week. We would like you to think about what you have drunk in the **last seven days, ending yesterday.**

Q.11. Thinking about the last seven days, ending yesterday, on which days, if any, did you have an alcoholic drink?

PLEASE ✔ ALL BOXES THAT APPLY

☐ Monday	GO TO Q12
☐ Tuesday	GO TO Q12
☐ Wednesday	GO TO Q12
☐ Thursday	GO TO Q12
☐ Friday	GO TO Q12
☐ Saturday	GO TO Q12
☐ Sunday	GO TO Q12
☐ I did not have an alcoholic drink in the last seven days	GO TO Q14

The next question asks about what you drank in the last seven days. Please complete this question by entering the number and types of drinks you had in the last week. For example, if you have drunk four pints of normal strength lager, and two half-pints of cider in the last week, enter '02' in the boxes under Half pints and '04' in the boxes under 'Pints' on the appropriate row, as in the example below

	Half pints		Pints		Small cans or bottles		Large cans or bottles	
Normal strength beer, lager, stout, cider or shandy (less than 6% alcohol)-exclude bottles/cans of shandy.	0	2	0	4				

Q.12. **How many of the following did you drink in the last week? Please think about what you have drunk in the last seven days, ending yesterday.**

PLEASE WRITE IN THE NUMBER OF DRINKS

Normal strength beer, lager, stout, cider or shandy (less than 6% alcohol)-exclude bottles/cans of shandy.	Half pints		Pints		Small cans or bottles		Large cans or bottles	
Strong beer, lager, stout or cider (6% alcohol or more, such as Tennents Super, Special Brew, Diamond White)	Half pints		Pints		Small cans or bottles		Large cans or bottles	
Spirits or liqueurs, such as gin, whisky, rum, brandy, vodka, or cocktails	Single measure		Double measure					
Alcoholic soft drink ('alcopop') or a pre-mixed alcoholic drink such as Bacardi Breezer, WKD or Smirnoff Ice	Small Cans		Standard Bottles (275ml)		Large Bottles (700ml)			
Wine (including prosecco, cava and champagne)	Small glasses (125ml)		Standard glasses (175ml)		Large glasses (250ml)		Bottles (750ml)	
Sherry or martini (including port, vermouth, Cinzano, Dubonnet)	Small glasses (50ml)		Large glasses (70ml)					
Other kinds of alcoholic drink WRITE IN NAME OF DRINK					Number of drinks			
1.								
2.								

Q.13. **Thinking about the last seven days, would you say your alcohol consumption was...**

PLEASE ✓ ONE BOX ONLY

- ☐ Much higher than usual
- ☐ A little higher than usual
- ☐ The same as usual
- ☐ A little lower than usual
- ☐ A lot lower than usual
- ☐ Don't know

Q.14. **Compared to a year ago, would you say that on the whole you drink more, about the same or less nowadays?**

PLEASE ✓ ONE BOX ONLY

- ☐ More nowadays — GO TO Q16.
- ☐ About the same — GO TO Q16.
- ☐ Less nowadays — GO TO Q15.
- ☐ I hadn't had my first alcoholic drink a year ago — GO TO Q16.
- ☐ Don't know — GO TO Q16.

Q.15. For which, if any, of the following reasons do you drink less compared to a year ago?

PLEASE ✔ ALL BOXES THAT APPLY

- ☐ Health or medical reasons
- ☐ Financial reasons
- ☐ Work reasons
- ☐ Pregnancy
- ☐ Influence of friends and family
- ☐ Campaign or challenge (for example Dry January or Going Sober for October)
- ☐ Other (please specify)

☐ No reason

DRINKING LOCATIONS

The next few questions ask about the different places where you drink and where you buy alcohol.

Q.16. Roughly what proportion of the alcohol you consume do you drink at home?

PLEASE ✔ ONE BOX ONLY

- ☐ 0% - I never drink at home
- ☐ 1-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76-99%
- ☐ 100% - I only drink at home
- ☐ Don't know

Q.17. Where did you drink alcoholic drinks in the in the last month?

PLEASE ✔ ALL BOXES THAT APPLY

☐ At home	GO TO Q.18.
☐ At other people's homes	GO TO Q.20.
☐ In pubs	GO TO Q.20.
☐ In restaurants	GO TO Q.20.
☐ In nightclubs / bars	GO TO Q.20.
☐ At events (eg sport, concerts)	GO TO Q.20.
☐ Outside in a public place (eg park, street)	GO TO Q.20.
☐ Other (please specify)	GO TO Q.20.
☐ Don't know	GO TO Q.20.

Q.18. Thinking about when you drink alcoholic drinks at home, where do you usually buy these drinks?

PLEASE ✔ ALL BOXES THAT APPLY

- ☐ Supermarket (in person)
- ☐ Supermarket (online)
- ☐ Off-license/ convenience store/ corner shop
- ☐ Abroad/ from a duty-free shop
- ☐ Petrol station
- ☐ From a delivery service
- ☐ Other location (please specify)
- ☐ Don't know

Q.19. Thinking about the place where you most frequently buy alcoholic drinks to drink at home, would you say this was...

PLEASE ✔ ONE BOX ONLY

- ☐ Within walking distance of your home (10 minutes)
- ☐ Not within your local area (further away than a 10 minute walk)
- ☐ Don't know

CUTTING DOWN

Q.20. Have you ever taken part in a campaign or challenge aimed at cutting down or stopping drinking (for example Dry January or Going Sober for October)? Please include all attempts even if you only had a go for a short time.

PLEASE ✔ ALL BOXES THAT APPLY

☐ Yes, Dry January	GO TO Q.21.
☐ Yes, Going Sober for October	GO TO Q.21.
☐ Yes, another campaign (please specify)	GO TO Q.23.
☐ No	GO TO Q.23.
☐ Don't know	GO TO Q.23.

Q.21. When did you take part in Dry January and / or Going Sober for October?

PLEASE ✔ ALL BOXES THAT APPLY

	Dry January	Going Sober for October	
Before 2014	☐	☐	GO TO Q.22.
2014	☐	☐	GO TO Q.22.
2015	☐	☐	GO TO Q.22.
2016	☐	☐	GO TO Q.23.
Don't know	☐	☐	GO TO Q.23.
I have not participated in this	☐	☐	GO TO Q.23.

Q.22. Thinking about the last time when you took part in Dry January and / or Going Sober for October, what was the long-term impact on your drinking afterwards?

PLEASE ✔ ALL BOXES THAT APPLY

	Dry January	Going Sober for October
I cut down a little on my drinking for a limited period of time	☐	☐
I cut down a little on my drinking on a permanent basis	☐	☐
I cut down significantly on my drinking for a limited period of time	☐	☐
I cut down significantly on my drinking on a permanent basis	☐	☐
I stopped drinking alcohol altogether	☐	☐
None of the above	☐	☐
Don't know	☐	☐
I have not participated in this	☐	☐

Q.23. **In January 2016, the government released new guidelines on low-risk drinking. The guidelines advise both men and women not to regularly drink more than 14 units of alcohol per week. People are also advised not to 'save up' the 14 units for 1 or 2 days, but to spread them over 3 or more days.**

Until now, were you previously aware of these new alcohol guidelines?

PLEASE ✔ ONE BOX ONLY

- ☐ Yes, I was aware of the new guidelines but did not know the details — GO TO Q.24.
- ☐ Yes, I was aware of the new guidelines and knew the details — GO TO Q.24.
- ☐ No, I was not aware — GO TO Q.25.
- ☐ Don't know — GO TO Q.25.

IF YOU NEVER DRINK ALCOHOL (CODE 1 AT Q7) PLEASE GO TO Q27

Q.24. **What impact, if any, do you think these new alcohol guidelines will have on your drinking?**

PLEASE ✔ ALL BOXES THAT APPLY

- ☐ When I drink, I will drink less alcohol
- ☐ I will drink alcohol less often
- ☐ The new guidelines won't change my drinking
- ☐ Don't know

THE IMPACT OF DRINKING

The following questions ask about the impact that drinking can sometimes have on people's lives. Please remember that anything you say will be completely confidential.

Q.25. PLEASE ✔ ONE BOX ON EACH LINE

	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
How often during the last year have you found that you were not able to stop drinking once you had started?	☐	☐	☐	☐	☐
How often during the last year have you failed to do what was normally expected from you because of your drinking?	☐	☐	☐	☐	☐
How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?	☐	☐	☐	☐	☐
How often during the last year have you had a feeling of guilt or remorse after drinking?	☐	☐	☐	☐	☐
How often during the last year have you been unable to remember what happened the night before because you had been drinking?	☐	☐	☐	☐	☐

Q.26. PLEASE ✔ ONE BOX ON EACH LINE

	No	Yes, but not in the last year	Yes, during the last year
Have you or somebody else been injured as a result of your drinking?	☐	☐	☐
Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?	☐	☐	☐

MORE ABOUT YOU

Finally, we would like to know a little more about you.

Q.27. Which ethnic group do you consider you belong to?

PLEASE ✔ ONE BOX ONLY

WHITE

- ☐ British
- ☐ Irish
- ☐ Any other white background

MIXED

- ☐ White and Black Caribbean
- ☐ White and Black African
- ☐ White and Asian
- ☐ Any other mixed background

ASIAN OR ASIAN BRITISH

- ☐ Indian
- ☐ Pakistani
- ☐ Bangladeshi
- ☐ Any other Asian background

BLACK OR BLACK BRITISH

- ☐ Caribbean
- ☐ African
- ☐ Any other black background

CHINESE OR OTHER ETHNIC GROUP

- ☐ Chinese
- ☐ Any other background
- ☐ Prefer not to answer

Q.28. Which of the following best describes your employment status?

PLEASE ✔ ONE BOX ONLY

- ☐ Employed full-time (more than 30 hours)
- ☐ Employed part-time (less than 30 hours)
- ☐ Self-employed
- ☐ Unemployed but looking for a job
- ☐ Unemployed and not looking for a job / Long-term sick or disabled / Housewife
- ☐ Retired
- ☐ Pupil / Student / In full time education

Appendix C. Postal survey response rates

Local Authority	No. survey responses	Response rate
Bath and North East Somerset	453	27%
Blackpool	396	19%
Cheshire West & Chester	377	22%
City of Kingston upon Hull	399	19%
City of Peterborough	392	21%
City of Wolverhampton	359	15%
Cornwall & Isles of Scilly	348	27%
East Riding	396	29%
East Sussex	346	24%
Greenwich	419	17%
Hounslow	372	15%
Leicester	424	15%
Luton	451	17%
Medway	355	19%
Merton	438	19%
Middlesbrough	373	16%
Norfolk	377	26%
Nottinghamshire	366	22%
Rotherham	365	21%
South Tyneside	389	19%
Staffordshire	336	20%
Stockport	399	22%
Telford & Wrekin	350	19%
West Berkshire	378	25%
Wiltshire	425	31%
TOTAL	**9683**	**20%**

Appendix D. Methodology for constructing an England weight

Profile of the 25 selected local authorities compared with England

In order to assess how representative of England the selected local authorities were as a group, we compared the population profile of the 25 local authorities when combined with an England average using 2011 census data. The charts below show how the sampled local authorities compare to England by age, economic activity status and ethnicity (only non-white groups are shown in the chart).

The only significant differences are by ethnicity although there is a slight over-representation of retired people. Since ethnicity is a key driver of alcohol consumption patterns it was important that these differences were adjusted for in the England weighting.

Figure 21. Distribution of the sampling frame population by age

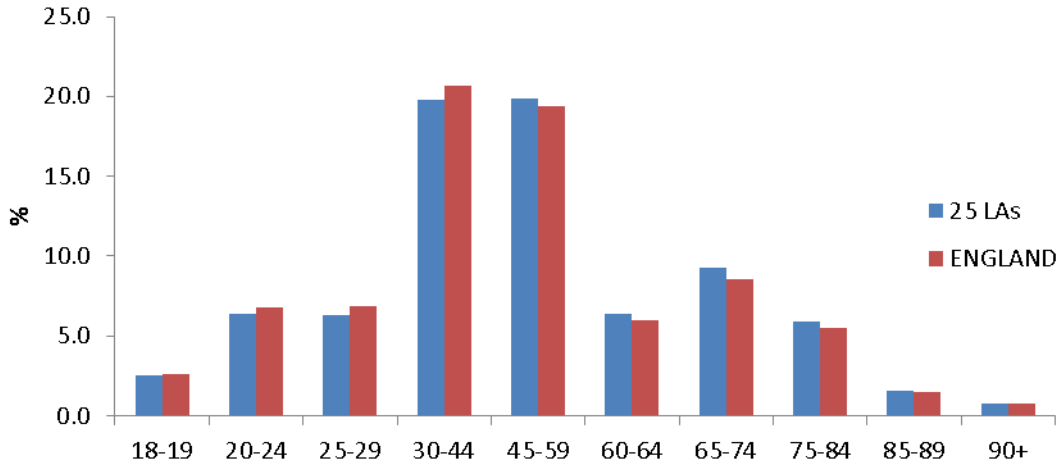


Figure 22. Distribution of the sampling frame population by ethnicity (non-white groups only)

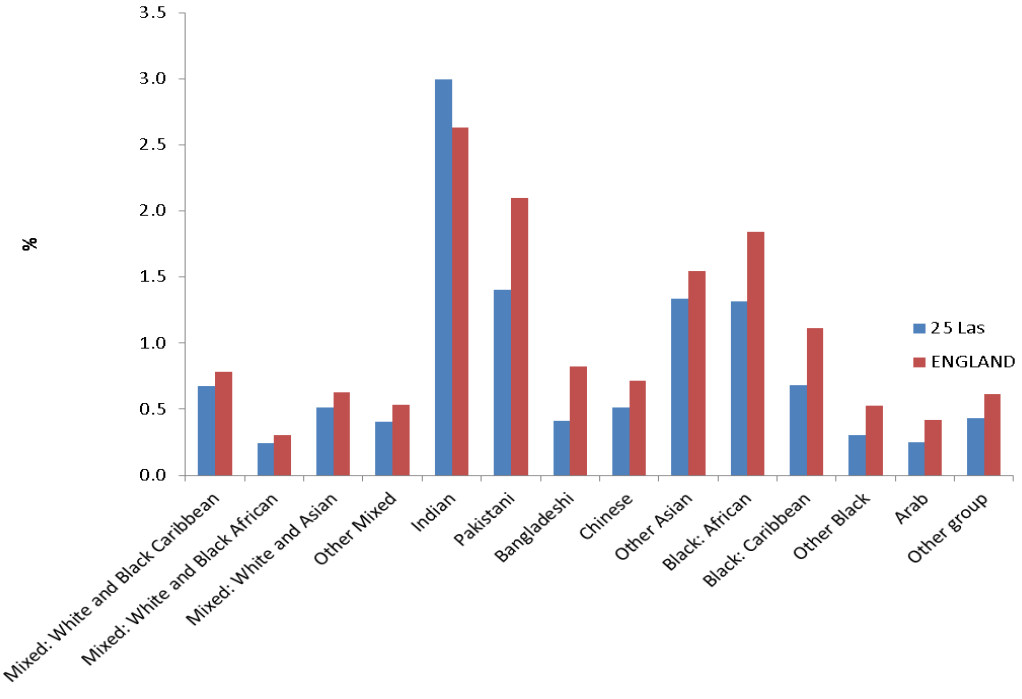
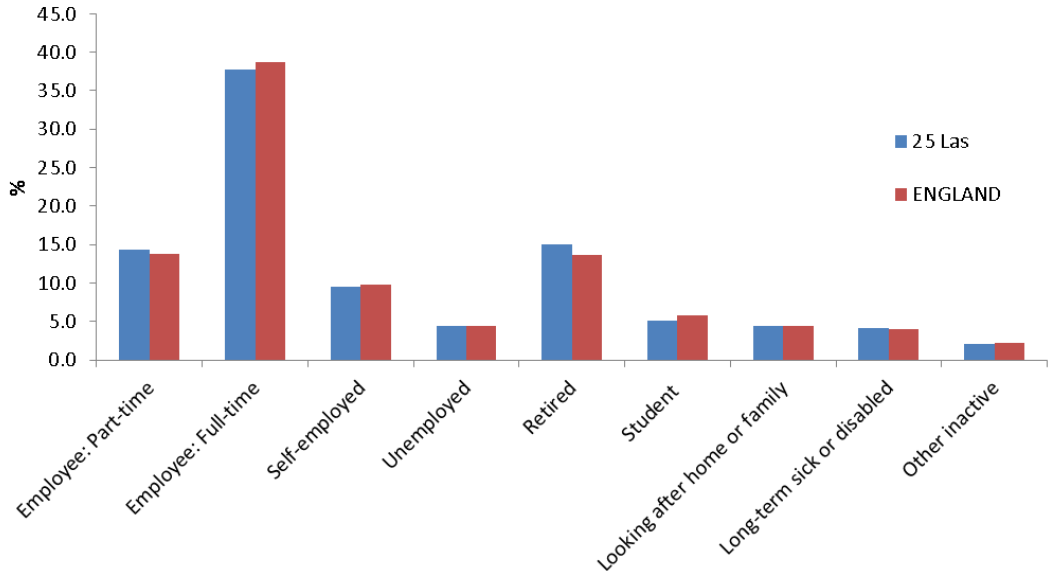


Figure 23. Distribution of the sampling frame population by economic activity group



Calculation of the England weights through iteration

Step 1 – Compare the sample population with the England population by age (in three groups) and sex.
Step 2 – Produce weights to adjust for under/over representation by age and sex
Step 3 – After applying the age/sex weight, compared the weighted sample distribution by ethnicity with the England profile
Step 4 – Add a second iteration to the weighting to adjust for under/over representation by ethnicity (groupings used – white, Indian, Pakistani, black, other – as these were the groups which analysis showed were disproportionately represented in the 25 sampled local authorities. Hence the weighting has adjusted for both the population distribution differences and the response effects at the same time)
Step 5 – After applying the adjusted weight, check that the age/sex distribution of the weighted sample still matches England. It matched within 2% and hence no further iterations were made.

Appendix E: Statistical tables by local authority

Table E1. Percentage of respondents who abstain from drinking alcohol

Local Authority	Percentage	Lower 95% confidence interval	Upper 95% confidence interval
Stockport	13.7%	10.7%	17.5%
Cornwall and the Isles of Scilly	14.5%	11.2%	18.6%
Bath and North East Somerset	16.4%	13.3%	20.1%
East Riding of Yorkshire	16.6%	13.3%	20.6%
Nottinghamshire	17.1%	13.6%	21.3%
Rotherham	17.1%	13.6%	21.4%
Cheshire West and Chester	17.2%	13.7%	21.4%
South Tyneside	17.9%	14.4%	22.1%
West Berkshire	18.0%	14.4%	22.2%
Wiltshire	18.0%	14.6%	22.0%
Norfolk	18.4%	14.8%	22.7%
City of Kingston upon Hull	18.7%	15.2%	22.9%
Blackpool	19.0%	15.4%	23.2%
East Sussex	19.8%	16.9%	23.0%
Staffordshire	21.9%	17.8%	26.7%
City of Peterborough	22.3%	18.4%	26.7%
Merton	22.3%	18.7%	26.5%
Telford and Wrekin	22.8%	18.7%	27.5%
Medway	24.2%	20.0%	28.9%
Middlesbrough	24.6%	21.5%	28.0%
Greenwich	27.5%	23.4%	32.0%
City of Wolverhampton	29.2%	24.7%	34.1%
Hounslow	32.8%	28.2%	37.7%
Luton	34.9%	30.6%	39.5%
Leicester	37.6%	33.1%	42.3%

Table E2. Percentage of drinkers who drink more than 6/8 units of alcohol in a single occasion weekly or daily

Local Authority	Percentage	Lower 95% confidence interval	Upper 95% confidence interval
Rotherham	6.8%	4.4%	10.3%
Norfolk	8.7%	6.0%	12.4%
East Sussex	11.2%	8.8%	14.3%
City of Wolverhampton	11.4%	8.0%	16.0%
Merton	11.5%	8.5%	15.4%
Telford and Wrekin	11.6%	8.3%	16.0%
Leicester	11.7%	8.3%	16.2%
City of Peterborough	11.8%	8.6%	16.0%
Luton	12.0%	8.8%	16.3%
East Riding of Yorkshire	12.2%	9.0%	16.2%
Greenwich	12.3%	9.1%	16.5%
Nottinghamshire	13.0%	9.6%	17.3%
Wiltshire	13.7%	10.4%	17.7%
Hounslow	14.1%	10.2%	19.0%
Cheshire West and Chester	14.1%	10.7%	18.5%
West Berkshire	14.1%	10.7%	18.5%
Bath and North East Somerset	14.7%	11.4%	18.7%
Blackpool	14.9%	11.4%	19.3%
Staffordshire	15.0%	11.1%	19.9%
Medway	15.5%	11.6%	20.3%
Stockport	15.6%	12.1%	19.9%
Cornwall and the Isles of Scilly	15.9%	12.1%	20.5%
City of Kingston upon Hull	17.7%	13.9%	22.3%
Middlesbrough	20.3%	17.0%	24.1%
South Tyneside	20.7%	16.6%	25.6%

Table E3. Percentage of drinkers who drink on 4 or more days each week

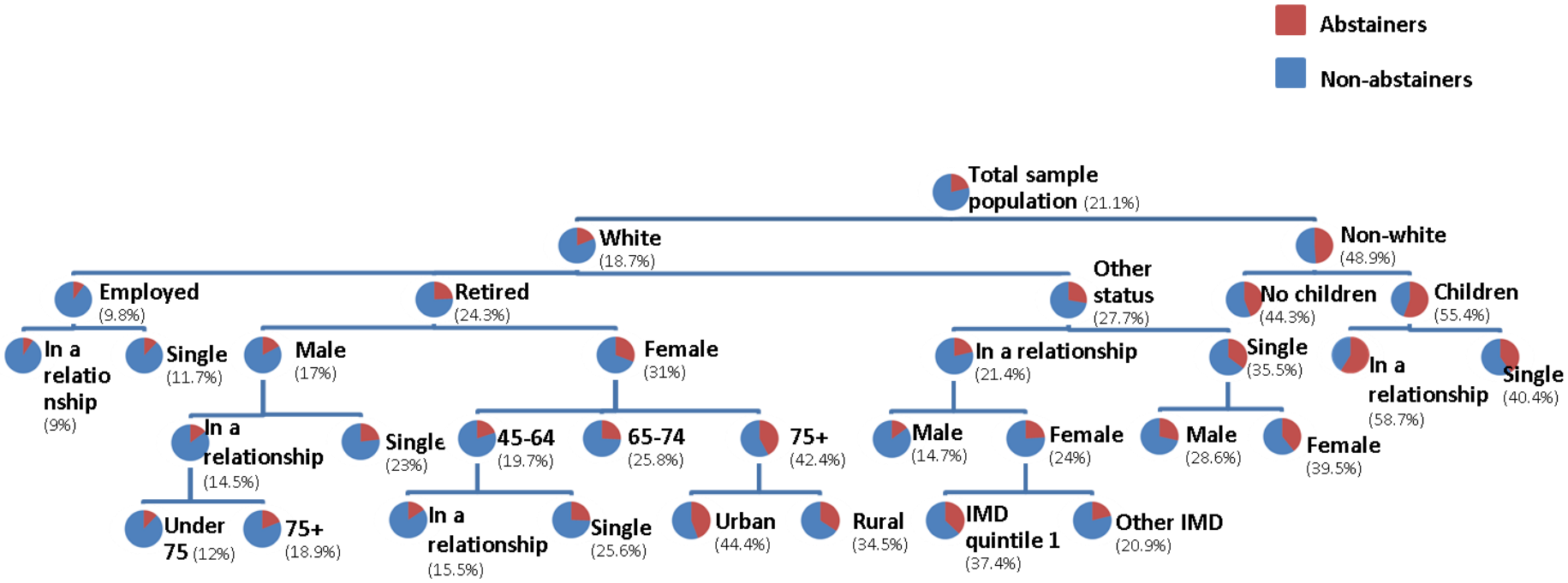
Local Authority	Percentage	Lower 95% confidence interval	Upper 95% confidence interval
City of Peterborough	8.9%	6.2%	12.7%
Rotherham	10.4%	7.4%	14.4%
South Tyneside	10.5%	7.6%	14.4%
Luton	10.5%	7.5%	14.6%
Telford and Wrekin	11.7%	8.4%	16.1%
Greenwich	11.8%	8.6%	15.9%
Middlesbrough	13.0%	10.3%	16.2%
Leicester	13.5%	9.9%	18.2%
Cheshire West and Chester	13.8%	10.4%	18.0%
City of Kingston upon Hull	13.8%	10.5%	18.1%
Merton	14.0%	10.7%	18.1%
East Riding of Yorkshire	14.4%	11.0%	18.6%
Norfolk	14.6%	11.1%	19.1%
City of Wolverhampton	15.0%	11.1%	19.9%
Staffordshire	16.2%	12.2%	21.2%
Medway	16.3%	12.3%	21.2%
Stockport	16.8%	13.2%	21.1%
Wiltshire	17.1%	13.5%	21.4%
Blackpool	17.3%	13.5%	21.9%
Nottinghamshire	17.8%	13.9%	22.5%
East Sussex	18.9%	15.8%	22.6%
Hounslow	19.8%	15.3%	25.2%
Cornwall and the Isles of Scilly	20.3%	16.1%	25.3%
Bath and North East Somerset	21.1%	17.2%	25.5%
West Berkshire	21.6%	17.4%	26.6%

Table E4. Percentage of drinkers with an AUDIT score of 8 or more (AUDIT group 2+)

Local Authority	Percentage	Lower 95% confidence interval	Upper 95% confidence interval
Rotherham	16.3%	12.5%	20.9%
Norfolk	17.6%	13.7%	22.2%
City of Wolverhampton	18.5%	14.2%	23.8%
Nottinghamshire	20.2%	16.0%	25.1%
East Sussex	21.0%	17.7%	24.7%
East Riding of Yorkshire	21.5%	17.4%	26.3%
Luton	21.7%	17.3%	26.8%
Hounslow	23.3%	18.4%	28.9%
West Berkshire	23.7%	19.3%	28.8%
City of Peterborough	24.3%	19.8%	29.5%
Stockport	24.9%	20.6%	29.7%
Cornwall and the Isles of Scilly	25.5%	20.9%	30.8%
Staffordshire	25.7%	20.8%	31.4%
Telford and Wrekin	25.9%	21.0%	31.4%
Greenwich	26.3%	21.6%	31.5%
Merton	26.3%	21.9%	31.2%
Medway	26.6%	21.6%	32.2%
Leicester	26.9%	21.8%	32.6%
Wiltshire	26.9%	22.5%	31.8%
Blackpool	27.6%	23.0%	32.8%
Bath and North East Somerset	27.7%	23.4%	32.4%
Cheshire West and Chester	28.8%	24.1%	34.1%
City of Kingston upon Hull	29.7%	25.0%	35.0%
South Tyneside	30.0%	25.2%	35.3%
Middlesbrough	32.4%	28.4%	36.6%

Appendix F. Decision tree output

A - Modelling abstainers. The numbers in brackets show the percentage of abstainers in the respective subgroup.



B - Modelling those in AUDIT group 2+ (as a percentage of all drinkers). The numbers in brackets show the percentage of respondents in AUDIT category 2,3 or 4 in the respective subgroup