

Analysis of drinking diaries and self-poured drinks

**Technical report:
part of Drinking in Scotland study**

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1. Introduction

1.1 Background

NHS Health Scotland commissioned a Study of Drinking in Scotland. It was designed to improve our understanding of drinking behaviours and different drinking cultures in Scotland, and it is intended that the findings will contribute to the further development of a Scottish alcohol strategy to reduce alcohol-related harm. The research was conducted by the Institute for Social Marketing, University of Stirling and The Open University, in collaboration with Dr Derek Heim at the University of Central Lancashire. A rapid review of existing research on drinking patterns and cultures in Europe and elsewhere aimed to summarise different drinking patterns with a focus on recent changes in drinking cultures and any correlates of these changes (Gordon, Heim, MacAskill *et al.*, 2008). This was followed by the major part of the study, primary research exploring drinking in Scotland (MacAskill, Eadie, Gordon, *et al.*, 2008).

This document outlines the findings from a supplementary analysis of drinking diaries undertaken as part of the study's primary research component.

1.2 Overall aims of the primary research

The overall aims of the primary research were to:

1. Investigate drinking behaviours, drinking cultures and attitudes towards drinking, binge drinking and drunkenness in different socio-economic, age and generational stages, gender and social groups in Scotland.
2. Examine the practical and symbolic role of alcohol (exploring both positive and negative aspects) within and across these differing groups.
3. Examine the role of alcohol in the context of other substance use.
4. Inform the development of prevention interventions and communication initiatives in Scotland.

1.3 Objectives for drinking diaries analysis

The analysis had the following objectives, reflecting those of most relevance from the overall primary research report i.e.:

1. To describe drinking behaviours in different socio-economic, age, gender and social groups in Scotland (contributing to primary research aim 1).
2. To identify potential explanations of the discrepancy between reported levels of drinking and observed alcohol-related harm in drinkers from lower socio-economic groups.

2. Methods

This section highlights aspects of the methodology relevant to the analysis of drinking diaries. A more detailed methodology for the overall primary research is provided in the main report (MacAskill, Eadie, Gordon, *et al.*, 2008).

2.1 Methods

Four study areas with mixed characteristics were identified (urban affluent, urban deprived, rural affluent and rural deprived) enabling triangulation of local responses and across the sample (Appendix 1). Respondents were recruited as drinkers in home settings and/or were 'regulars' in selected local pubs (two per area) or were employed in pubs (typically also regular drinkers). Among those recruited in the home sample, half were recruited as 'moderate' drinkers i.e. having drunk between half and the total of current recommended weekly drinking limits in the week preceding recruitment, with the other half recruited as 'heavy' drinkers, i.e. drinking above recommended weekly drinking limits. There were no limits on consumption experience among the bar sample (customers and staff).

2.1.1 *Qualitative interviews with bar customers, staff and home sample*

Interview formats comprised both focus group and in-depth interviewing techniques (one-to-one and paired interviews). Key topics to be covered were identified and topic guides were designed in conjunction with the Advisory Group. These methods are described in more detail in the report of the overall primary research study. All participants, excluding professional informants responding in relation to their work, were reimbursed with £25.00 in recognition of their time and expenses incurred by the study.

2.1.2 *Questionnaires*

Whilst the research was primarily qualitative in nature, a questionnaire-based component was included.

Recruitment questionnaires: The home sample was recruited door-to-door in the study areas by using a short screening questionnaire which included standard questions on drinking behaviours. This allowed the sample to be stratified in terms of geographic location, socio-economic status, consumption levels and gender. Completion of the same drinking diary form as in the interview (below) enabled comparison with reports of consumption at the interview stage, although the main purpose was to facilitate sample stratification.

Drinking diaries: Those participating in one-to-one or paired interviews were asked about their previous week's drinking, using a seven day retrospective drinking diary. This recorded what alcohol they had consumed (amount, type, brand, etc), if any, allowing calculation of standard units consumed over the week and units consumed on the heaviest drinking day. Information was also gathered on when they consumed alcohol and where they were (e.g. at home, in a pub).

The diary process was normally led by the interviewer rather than self completion. In the majority of cases it was conducted near the end of the qualitative interview, although in a small minority of situations it was completed in the course of the interview. Completing the diary generated additional discussion about drinking contexts and behaviours which were recorded as part of the overall qualitative interview process, adding to the richness of the data. It is worth noting that detailed recall of the past week's drinking events was often not straightforward, especially if behaviours were out of normal routines. Insight into the recall process was enhanced in discussion between couples as they tried to 'tie down' past events.

Self-poured drinks: Home sample respondents who reported consumption of self-measured drinks were asked to pour a typical drink. The researcher provided a spirit or wine bottle as appropriate, containing water, and the respondent poured a drink in the way they would normally. Most commonly the vessel used was the respondent's own glass although researchers also had study glasses available. This was then measured by the researcher utilising calibrated measuring jars with a choice of capacities. This method drew on the work of Gill and O'May (2007) and Kerr, Greenfield, Tujague *et al.* (2005). The former researchers asked participants to pour their 'usual measure of wine or spirit' into a glass to allow the actual and estimated content to be contrasted, while Kerr asked respondents recruited for a telephone survey to measure the quantity of a self-poured drinks in measuring beakers provided by the researchers. While recording in the home environment may enable more realistic measures, this methodology may have sacrificed some of the accuracy of more controlled experimental situations.

2.2 Sample and recruitment

The study focused on two pairs of areas: urban (affluent and deprived) and rural (affluent and deprived) within the Central Belt of Scotland (Appendix 1). Within each of the four areas, two bars in local pubs were identified - eight in total. The following sample was then recruited:

Bar sample:

- **Bar staff**, i.e. trade informants (bar **proprietors/licensees/managers** and bar **workers**) from each bar (recruited by ISM staff).
- **Bar customers** from each bar were identified as 'regulars' with support by bar staff (in some cases facilitated by an experienced market research recruiter). Characteristics of bar customers reflected the regular bar clientele and typical drinking behaviours such as group drinking or drinking alone or in pairs. There were no additional criteria and age was not recorded at the time. It should be noted that bar customers and bar staff were recruited in relation to the bars in the areas and not specifically as residents of the area, although the majority of both categories were local.

Home sample:

- Individuals living broadly within the bar catchment areas, and who had drunk at home in the last week, were recruited door-to-door by an experienced market research recruiter. Use of a recruitment questionnaire ensured socioeconomic characteristics reflected the characteristics of the area, e.g. all respondents in 'affluent' areas were ABC1. A broad spread of gender, age group (18-30, 40-55

and 65+ years) and drinking behaviours (moderate versus heavy¹) were also obtained for this sample.

A total of 70 drinking diaries were completed in the course of the in-depth paired or one-to-one interviews. The characteristics of those completing the diaries broadly reflected the main sample for the qualitative work. As shown in Table 2.1, all the study areas were well represented and nearly half were recruited into the home sample with the remainder linked to bars as workers or proprietors/licensees/managers. It should be noted that these are rarely exclusive behaviours; for example, the home sample may also drink in bars and proprietors and bar workers may also be customers or drink at home.

Table 2.1 Characteristics of those who completed drinking diaries (%)

| | Total n=70 | Male n=38 | Female n=32 |
|----------------------------------|-----------------------|----------------------|------------------------|
| Community Type | | | |
| Urban Affluent | 26 | 29 | 22 |
| Urban Deprived | 21 | 16 | 28 |
| Rural Affluent | 29 | 26 | 31 |
| Rural Deprived | 24 | 29 | 19 |
| Sample Type* | | | |
| Home sample | 47 | 42 | 53 |
| Bar customers | 23 | 32 | 13 |
| Staff (P&W) | 30 | 26 | 34 |
| (Workers) | (17) | (8) | (28) |
| (Proprietors/licensees/managers) | (13) | (18) | (6) |
| Age of Home Sample** | n=33 | n=17 | n=16 |
| 18-30 years | 36 | 29 | 43 |
| 40-55 years | 36 | 35 | 38 |
| 65+ years | 27 | 35 | 19 |

* See above for characteristics of sample types. NB these are rarely exclusive behaviours; e.g. the home sample may also drink in bars and bar workers may also be customers or drink at home.

** Age of bar related respondents not recorded.

A very small number of respondents (n=3) who had the potential to complete diaries reported consuming no alcohol in the week prior to being interviewed. They are not included in the findings reported here.

¹ Moderate: 18-55: women 7-14 units per week, men 9-21 units per week; 65+: women 2-7 units per week, men 2-9 units per week

Heavy: 18-55: women +14 units per week, men +22 units per week; 65+: women +7 units per week, men +9 units per week

3. Drinking patterns

Alcohol consumption was measured by means of a seven day retrospective drinking diary, as detailed in Section 2.1.2, and reported figures refer to respondents' drinking in the period immediately preceding the interview day. Discussion around the completion process gave insight into a variety of reasons why the reported behaviour may be seen as atypical, such as special celebrations or restrictions due to work priorities. These issues are further discussed in Section 5 and in the full report.

As noted in the methods section, recruitment criteria incorporated a variety of drinking related behaviours, but no upper consumption limit was imposed. Thus respondents comprised home sample (47%) who had drunk in the past week (drinking within or above the weekly recommended limits) and those connected with pubs either as customers (23%) or 'staff P&W' (30%), comprising proprietors/licensees/managers and workers (13% and 17% respectively).

In this report, comparisons are made with current recommended drinking limits, namely: to drink no more than 21 units per week (men) and 14 units a week (women) and for men to drink no more than 3-4 units a day and for women to drink no more than 2-3 units in one day (Alcohol Focus Scotland, 2007). In addition, at least two alcohol free days in a week are recommended.

3.1 Mean consumption levels

The overall sample profile is characterised by high weekly alcohol consumption, with mean consumption levels considerably above the recommended weekly limits, despite not setting out to recruit extremely heavy drinkers. Overall mean weekly consumption was 40 units (39.92 units, SD=28.48; n=70) as shown in Table 3.1. In addition, female respondents (mean weekly consumption=29.04 units, SD=20.96; n=32) consumed significantly less units per week than did their male counterparts (mean weekly consumption=49.09 units, SD=30.91; n=38). There was also a trend for respondents recruited as part of the bar customer sample (mean weekly consumption=54.81 units, SD=35.02; n=16) to drink more heavily than the home sample (mean weekly consumption=33.33 units, SD=24.52; n=33) and than bar staff (mean weekly consumption=38.95 units, SD=25.79; n=21) (Table 3.2).

Tables 3.1 and 3.2 give further insights across the study communities in terms of gender and sample group respectively. Given the small number of participants in some of the cells, no inferential analysis is attempted here. However, examination of the data reveals interesting consumption trends.

Focusing first on reported drinking over the previous week, respondents in the rural deprived community appeared to have higher overall consumption levels than do both the urban study communities, whilst those from the rural affluent area show lower consumption levels. Among males, alcohol consumption appears consistently higher among respondents from both deprived communities compared to respondents recruited from more affluent areas. Among female respondents, however, those recruited in the urban affluent study area appear to consume comparatively more alcohol than female participants in the other communities, and

even consume more alcohol than their male counterparts. Examination of trends in relation to sample groups (Table 3.2) indicates that the overall trend for bar customers to report higher levels of drinking than the home sample and than bar staff is apparent in three of the four communities, most notably in the rural deprived study area. The exception is the urban affluent area, where bar staff report higher mean consumption levels than their counterparts.

Table 3.1 Mean weekly alcohol consumption, heaviest drinking day consumption and days on which alcohol was consumed as a function of study area and gender (Standard Deviations in brackets)

| Study community | Gender | Mean weekly units (SD) | Mean heaviest drinking day consumption in units (SD) | Mean days of alcohol consumption (SD) |
|-----------------|---------------------|------------------------|--|---------------------------------------|
| Urban Affluent | Male (n=11) | 38.83 (15.11) | 16.86 (8.76) | 4.73 (1.74) |
| | Female (n=7) | 39.38 (26.54) | 14.16 (12.31) | 5.71 (1.11) |
| | Total (n=18) | 39.04 (19.57) | 15.81 (10.02) | 5.11 (1.57) |
| Urban Deprived | Male (n=6) | 61.32 (50.96) | 15.50 (10.65) | 5.00 (2.76) |
| | Female (n=9) | 26.84 (25.15) | 14.51 (14.10) | 2.67 (1.12) |
| | Total (n=15) | 40.63 (39.93) | 14.91 (12.42) | 3.60 (2.20) |
| Rural Affluent | Male (n=10) | 41.08 (23.93) | 10.98 (5.27) | 5.40 (1.58) |
| | Female (n=10) | 24.01 (15.41) | 9.31 (8.87) | 4.80 (2.04) |
| | Total (n=20) | 32.54 (21.46) | 10.14 (7.15) | 5.10 (1.80) |
| Rural Deprived | Male (n=11) | 59.97 (33.05) | 27.88 (16.91) | 3.91 (1.81) |
| | Female (n=6) | 28.66 (15.16) | 16.78 (14.28) | 3.50 (2.35) |
| | Total (n=17) | 48.92 (31.51) | 23.96 (16.50) | 3.76 (1.95) |
| TOTAL | Male (n=38) | 49.09 (30.91) | 18.29 (12.80) | 4.71 (1.92) |
| | Female (n=32) | 29.04 (20.96) | 13.23 (12.02) | 4.16 (2.02) |
| | Total (n=70) | 39.92 (28.48) | 15.98 (12.61) | 4.46 (1.97) |

Tables 3.1 and 3.2 also indicate patterns in relation to the mean reported amount drunk during the heaviest day's session over the previous week (a day includes continued drinking past midnight). The mean heaviest day's consumption of 16 units for the overall sample (15.98 units, SD=12.61; n=70) is considerably higher than the recommended daily drinking limits. As with week's consumption levels, the mean maximum reported intake in one day appears highest among the rural deprived sample and lowest in the rural affluent community. Consumption levels were consistently higher among males than females, with the greatest gender differences apparent in the rural deprived area. Thus, among females in the urban affluent area, whilst weekly drinking levels are higher than males, heaviest day consumption amounts are lower.

Exploration of reported consumption by sample group of the mean heaviest drinking day shows a less clear pattern (Table 3.2). Across the overall sample, bar staff and customers report similar mean consumption levels at a higher level than the home sample (e.g. bar staff 18.25 units, SD=11.14; n=70). Bar customers in the rural deprived community were more likely to report drinking markedly more in one day than other sample groups in that area. However, in both affluent areas bar staff

reported higher mean consumption levels, and in the urban deprived area the home sample were likely to consume higher amounts in one day than other sample groups in the respective areas.

These findings are illuminated further when the mean number of days on which alcohol was consumed in the week preceding the interview is considered (Table 3.1). Across the overall sample, drinking was reported on a mean of 4 days (4.46 days, $SD=1.97$; $n=70$). Consumption of alcohol in the deprived study areas appeared to be more focused across the week than in the affluent areas, irrespective of urban or rural locations; participants in the deprived areas reported consuming alcohol on a mean of less than four days in the week preceding the interview, whilst those in the affluent areas reported consuming alcohol on just over five days over the same time interval. Overall, males tended to drink on more days than females, and this difference was most marked in the urban deprived area.

There was also some variation between respondent groups in this regard, as shown in Table 3.2. Across the overall sample, respondents recruited to the home sample (4.73 days, $SD=1.94$; $n=33$) tended to consume alcohol on more days than bar customers (4.44 days, $SD=2.22$; $n=16$) and staff (4.05 days, $SD=1.83$; $n=21$). Within the study communities, this trend was most apparent among respondents from urban affluent communities and also in rural deprived communities, albeit in the context of more focused drinking patterns overall.

Table 3.2 Mean weekly alcohol consumption, heaviest drinking day consumption and days on which alcohol was consumed as a function of study area and sample group (Standard Deviations in brackets)

| Study community | Sample group | Mean weekly units (SD) | Mean heaviest drinking day consumption in units (SD) | Mean days of alcohol consumption (SD) |
|-----------------|---------------------|------------------------|--|---------------------------------------|
| Urban Affluent | Home Sample (n=9) | 30.76 (14.94) | 11.73 (9.01) | 5.56 (1.74) |
| | Customers (n=4) | 43.43 (19.43) | 16.00 (6.62) | 4.50 (1.92) |
| | Staff (P&W) (n=5) | 50.45 (23.70) | 23.00 (11.38) | 4.80 (0.84) |
| | Total (n=18) | 39.04 (19.57) | 15.81 (10.02) | 5.11 (1.57) |
| Urban Deprived | Home Sample (n=7) | 47.32 (14.14) | 18.71 (15.60) | 3.71 (1.60) |
| | Customers (n=4) | 56.50 (45.13) | 14.50 (11.21) | 4.50 (3.00) |
| | Staff (P&W) (n=4) | 13.05 (7.33) | 8.65 (4.66) | 2.50 (2.38) |
| | Total (n=15) | 40.63 (39.93) | 14.91 (12.42) | 3.60 (2.20) |
| Rural Affluent | Home Sample (n=9) | 23.52 (17.36) | 6.11 (2.39) | 5.22 (1.92) |
| | Customers (n=5) | 45.65 (28.44) | 9.42 (4.10) | 5.40 (2.30) |
| | Staff (P&W) (n=6) | 35.14 (17.17) | 16.79 (9.44) | 4.67 (1.37) |
| | Total (n=20) | 32.54 (21.46) | 10.14 (7.15) | 5.10 (1.80) |
| Rural Deprived | Home Sample (n=8) | 35.00 (12.20) | 19.18 (15.28) | 4.13 (2.17) |
| | Customers (n=3) | 83.00 (47.90) | 40.33 (20.60) | 2.67 (0.58) |
| | Staff (P&W) (n=6) | 50.43 (32.26) | 22.15 (13.18) | 3.83 (2.14) |
| | Total (n=17) | 48.92 (31.51) | 23.96 (16.50) | 3.76 (1.95) |
| TOTAL | Home Sample(n=33) | 33.33 (24.52) | 13.49 (12.19) | 4.73 (1.94) |
| | Customers (n=16) | 54.81 (35.02) | 18.13 (14.95) | 4.44 (2.22) |
| | Staff (P&W) (n=21) | 38.95 (25.79) | 18.25 (11.14) | 4.05 (1.83) |
| | Total (n=70) | 39.92 (28.48) | 15.98 (12.61) | 4.46 (1.97) |

Analysis by age was only possible in relation to the home sample as age was not part of the recruitment criteria for the remainder of the sample. The sample size of 33 respondents means the cell sizes are extremely small, but Table 3.3 shows similar breakdowns to the previous tables to allow for some level of comparison. As with the overall sample (see Table 3.2), the home sample reported mean weekly consumption and heaviest day drinking levels that were considerably higher than recommended drinking limits, although at a slightly lower level than the total sample. Whilst drinking levels were slightly lower, the number of days respondents drank was slightly higher, indicating less focused drinking.

With regards to variations across age groups in the home sample, alcohol consumption was highest among the youngest cohort (18-30 years) most notably on the heaviest drinking day and also during the week, with the oldest group (65+ years) reporting lowest consumption levels. However, in affluent areas the trend differed, with 40-55 year olds reporting drinking more over the week than their younger and older counterparts and in rural affluent areas also drinking more on their heaviest day. In addition the trend towards drinking on more days in these areas respectively was more pronounced, with means of seven and six days. In terms of days on which they drank, the younger respondents reported more focused drinking (3.25 days,

SD=1.77; n=12) whilst the middle and older age groups reported drinking means of over five days.

Table 3.3 Home sample: mean weekly alcohol consumption, heaviest drinking day consumption and days on which alcohol was consumed as a function of study area and age (Standard Deviations in brackets)

| Study community | Age | Mean weekly units (SD) | Mean heaviest drinking day consumption in units (SD) | Mean days of alcohol consumption (SD) |
|-----------------|---------------------|------------------------|--|---------------------------------------|
| Urban Affluent | 18-30 (n=3) | 32.77 (4.15) | 21.37 (8.42) | 3.33 (0.58) |
| | 40-55 (n=3) | 45.93 (8.72) | 10.70 (0.35) | 7.00 (0.00) |
| | 65+ (n=3) | 13.57 (2.08) | 3.13 (1.33) | 6.33 (0.58) |
| | Total (n=9) | 30.76 (14.94) | 11.73 (9.01) | 5.56 (1.74) |
| Urban Deprived | 18-30 (n=3) | 88.68 (36.10) | 34.27 (7.40) | 4.33 (2.31) |
| | 40-55 (n=3) | 17.33 (6.71) | 7.93 (5.95) | 3.33 (1.16) |
| | 65+ (n=1) | 13.20 (-) | 4.40 (-) | 3.00 (-) |
| | Total (n=7) | 47.32 (44.14) | 18.71 (15.60) | 3.71 (1.60) |
| Rural Affluent | 18-30 (n=3) | 10.07 (4.50) | 5.27 (1.27) | 3.33 (2.08) |
| | 40-55 (n=3) | 41.97 (19.11) | 8.43 (2.94) | 6.00 (1.00) |
| | 65+ (n=3) | 18.53 (0.67) | 4.63 (0.35) | 6.33 (1.16) |
| | Total (n=9) | 23.52 (17.36) | 6.11 (2.39) | 5.22 (1.92) |
| Rural Deprived | 18-30 (n=3) | 42.77 (3.49) | 34.03 (11.63) | 2.00 (1.73) |
| | 40-55 (n=3) | 29.43 (18.63) | 12.05 (11.28) | 5.00 (1.00) |
| | 65+ (n=2) | 31.70 (5.23) | 7.60 (5.09) | 6.00 (1.41) |
| | Total (n=8) | 35.00 (12.20) | 19.18 (15.28) | 4.13 (2.17) |
| TOTAL | 18-30 (n=12) | 43.57 (33.75) | 23.73 (14.19) | 3.25 (1.77) |
| | 40-55 (n=12) | 33.67 (17.00) | 9.78 (5.85) | 5.33 (1.61) |
| | 65+ (n=9) | 19.21 (7.76) | 4.77 (2.60) | 5.89 (1.36) |
| | Total (n=33) | 33.33 (24.52) | 13.49 (12.19) | 4.73 (1.94) |

3.2 Examination in relation to recommended drinking limits

The following section gives insights into the range of drinking levels and days alcohol was consumed. The current recommendations for maximum weekly and single day consumption were used as a yardstick against which to analyse behaviour, together with the recommendation of two drink-free days in a week. However, it is recognised that the validity of these recommendations has been questioned (e.g. Horne, 2007).

3.2.1 Total amount drunk in the previous week

As outlined above, mean consumption levels among males (49 units) and females (29 units) were considerably over the recommended weekly drinking limits of 21 units per week for men and 14 units a week for women. However, a broad range of consumption levels were reported. As is shown in Table 3.4, less than one quarter of respondents drank within the recommended weekly limits for their gender (23%). At the other end of the spectrum, Table 3.4 also shows the proportion of those drinking above recommended limits, split by whether they drink up to twice the recommended limits or twice or more than the recommended limits. Nearly half of the overall

sample reported drinking twice or more than the relevant recommended limits in a week (47%). Levels were highest in the rural deprived area, with 65% reporting drinking over twice the recommended limits. As a comparison with the general population, the 2003 Scottish Health Survey (Erens and Moody, 2005) indicates that only 27% of males and 14% of females were drinking over the recommended limit for their gender, although it is recognised that under-reporting issues may have an influence (see Section 5).

Females in our sample were more likely to drink within recommended weekly drinking limits (up to 14 units, 34%) than males (up to 21 units, 13%), as shown in Table 3.4, although proportions of males and females drinking up to double the recommended weekly drinking limits are the same (47%). Variations by gender are most apparent among the urban areas, with proportionately more females than males drinking more than twice the recommended weekly drinking limits in the urban affluent area, whilst in the urban deprived area males were more likely to report higher than recommended weekly drinking limits. At the highest levels of consumption, four male respondents reported drinking over 100 units, and two females reported drinking over 70 units. In relation to recruitment category, nine of the 32 female respondents were bar workers and six reported drinking over the recommended limit, including four who drank over three times above recommended weekly drinking limits.

Table 3.4 Proportion drinking within and above the recommended weekly drinking limits¹ for their gender as a function of study area and gender (%)

| Study community | Gender | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-----------------|---------------------|--|---|---|
| Urban Affluent | Male (n=11) | 9 | 55 | 36 |
| | Female (n=7) | 29 | 14 | 57 |
| | Total (n=18) | 17 | 39 | 44 |
| Urban Deprived | Male (n=6) | 17 | 33 | 50 |
| | Female (n=9) | 44 | 22 | 33 |
| | Total (n=15) | 3 | 27 | 40 |
| Rural Affluent | Male (n=10) | 30 | 30 | 40 |
| | Female (n=10) | 30 | 30 | 40 |
| | Total (n=20) | 30 | 30 | 40 |
| Rural Deprived | Male (n=11) | 0 | 36 | 64 |
| | Female (n=6) | 33 | 0 | 67 |
| | Total (n=17) | 12 | 24 | 65 |
| TOTAL | Male (n=38) | 13 | 40 | 47 |
| | Female (n=32) | 34 | 19 | 47 |
| | Total (n=70) | 23 | 30 | 47 |

¹ Men to drink no more than 21 units, women to drink no more than 14 units a week

² Males: 21-41.9 units, females 14-27.9 units

³ Males: 42+ units, females 28+ units

Examination of sample groups in relation to drinking within weekly recommended limits (Table 3.5) shows that overall the bar customer sample was least likely to report drinking within the recommended weekly limits (13%) and most likely to report

drinking double or more than the recommended limits (69%). Bar staff were also relatively likely to report drinking double or more than the recommended limits (52%) followed by the home sample (33%). Among the home sample, those in affluent areas (just over one-fifth) were relatively less likely to report drinking double or more than the recommended limit than those in deprived areas (nearly half).

Table 3.5 Proportion drinking within and above the recommended weekly limits¹ for their gender as a function of study area and sample group (%)

| Study community | Sample group | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-----------------|---------------------|--|---|---|
| | | | | |
| Urban Affluent | Home Sample (n=9) | 33 | 44 | 22 |
| | Customers (n=4) | 0 | 50 | 50 |
| | Staff (P&W) (n=5) | 0 | 20 | 80 |
| | Total (n=18) | 17 | 39 | 44 |
| Urban Deprived | Home Sample (n=7) | 29 | 29 | 43 |
| | Customers (n=4) | 25 | 0 | 75 |
| | Staff (P&W) (n=4) | 50 | 50 | 0 |
| | Total (n=15) | 33 | 27 | 40 |
| Rural Affluent | Home Sample (n=9) | 33 | 44 | 22 |
| | Customers (n=5) | 20 | 20 | 60 |
| | Staff (P&W) (n=6) | 33 | 17 | 38 |
| | Total (n=20) | 30 | 30 | 40 |
| Rural Deprived | Home Sample (n=8) | 13 | 38 | 50 |
| | Customers (n=3) | 0 | 0 | 100 |
| | Staff (P&W) (n=6) | 17 | 17 | 67 |
| | Total (n=17) | 12 | 24 | 65 |
| TOTAL | Home Sample (n=33) | 27 | 39 | 33 |
| | Customers (n=16) | 13 | 19 | 69 |
| | Staff (P&W) (n=21) | 24 | 24 | 52 |
| | Total (n=70) | 23 | 30 | 47 |

¹ Men to drink no more than 21 units, women to drink no more than 14 units a week

² Males: 21-41.9 units, females 14-27.9 units

³ Males: 42+ units, females 28+ units

The home sample can be further explored in relation to age. As with the overall sample (Table 3.5), a minority (27%) of the home sample drank within the recommended limits, but only around one third of the sample drank twice or more times the recommended limit compared with nearly half of the overall sample. Table 3.6 shows that those in the older age group (65+ years, 56%) were much more likely to drink within the recommended limits. Because of the small numbers in the home sample, data for the affluent and deprived areas have been merged. It is apparent that the age group reporting drinking at higher weekly levels varied markedly. In the affluent areas a high proportion of 40-55 year olds reported drinking double or more than the recommended limits (67%), with no 18-30 year olds reporting drinking at that level, whilst in the deprived areas a large majority of 18-30 year olds reported highest consumption levels (83%).

Table 3.6 Home sample: proportion drinking within and above the recommended weekly limits¹ for their gender as a function of age and affluent/deprived communities (%)

| Study communities | Age | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-------------------|---------------------|--|---|---|
| | | | | |
| Affluent | 18-30 (n=6) | 33 | 67 | 0 |
| | 40-55 (n=6) | 0 | 33 | 67 |
| | 65+ (n=6) | 67 | 33 | 0 |
| | Total (n=18) | 33 | 44 | 22 |
| Deprived | 18-30 (n=6) | 0 | 17 | 83 |
| | 40-55 (n=6) | 33 | 50 | 17 |
| | 65+ (n=3) | 33 | 33 | 33 |
| | Total (n=15) | 20 | 33 | 47 |
| TOTAL | 18-30 (n=12) | 17 | 42 | 42 |
| | 40-55 (n=12) | 17 | 42 | 42 |
| | 65+ (n=9) | 56 | 33 | 11 |
| | Total (n=33) | 27 | 39 | 33 |

¹ Men to drink no more than 21 units, women to drink no more than 14 units a week

² Males: 21-41.9 units, females 14-27.9 units

³ Males: 42+ units, females 28+ units

3.2.2 Reported drinking in relation to single day's recommended limits

The current recommendation is for men to drink no more than 3-4 units a day and for women to drink no more than 2-3 units in one day (AFS, 2007). The following three tables summarise the amounts reported to have been consumed on the heaviest drinking day in the previous week. They identify those drinking above the recommended limits but less than double (4-7.9 units males and 3-5.9 units females) and double or more than the recommended limits (8 or more units males and 6 or more units females). Although there is no standard definition of 'binge drinking', the latter measure, i.e. drinking more than double the recommended daily limit on any one day, is classified as binge drinking in the Scottish Health Survey (Erens and Moody, 2005). In the most recent 2003 Scottish Health Survey (Erens and Moody, 2005), 34% of men who drank reported drinking eight units or more on their heaviest drinking day in the previous week and 19% of women drank six or more units on their heaviest drinking day in the previous week.

Very few respondents in our sample (4%) reported drinking within the recommended limits on their heaviest drinking day in the previous week as shown in Table 3.7. In particular, none of the respondents in the deprived areas described a heaviest day drinking session within the recommended limits. In contrast nearly three-quarters of the sample (74%) reported at least one episode of 'binge drinking' in the previous week, i.e. double the recommended limits or over. This was most apparent in the urban affluent area and the rural deprived area (83% and 88% respectively).

Overall more males than females (84% vs. 63%) reported having experienced binge drinking episodes and this trend was consistently observed across all areas.

Table 3.7 Proportion drinking within and above the recommended daily drinking limits for their gender on the heaviest drinking day in the previous week as a function of study area and gender (%)

| Study community | Gender | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-----------------|---------------------|--|---|---|
| Urban Affluent | Male (n=11) | 0 | 9 | 91 |
| | Female (n=7) | 29 | 0 | 71 |
| | Total (n=18) | 11 | 6 | 83 |
| Urban Deprived | Male (n=6) | 0 | 33 | 67 |
| | Female (n=9) | 0 | 44 | 56 |
| | Total (n=15) | 0 | 40 | 60 |
| Rural Affluent | Male (n=10) | 10 | 20 | 70 |
| | Female (n=10) | 0 | 40 | 60 |
| | Total (n=20) | 5 | 30 | 65 |
| Rural Deprived | Male (n=11) | 0 | 0 | 100 |
| | Female (n=6) | 0 | 33 | 67 |
| | Total (n=17) | 0 | 12 | 88 |
| TOTAL | Male (n=38) | 3 | 13 | 84 |
| | Female (n=32) | 6 | 31 | 63 |
| | Total (n=70) | 4 | 21 | 74 |

¹ Men to drink no more than 3-4 units a day and women to drink no more than 2-3 units in one day

² Males 4-7.9 units, females 3-5.9 units

³ Males 8 or more units, females 6 or more units

Further investigation in relation to sample group (Table 3.8), indicates that none of the bar customers and staff reported drinking within recommended daily limits in their heaviest drinking day and over 85% drank double or more than the recommended limits. Only a small proportion of the home sample reported heaviest drinking episodes that were within the recommended limits (9%) with around two thirds reporting drinking double or more than the recommended limits (61%). This pattern was broadly consistent across the four areas, apart from the deprived areas where none of the respondents reported heaviest drinking episodes that were within recommended limits and all bar customers and staff in the rural deprived area reported heaviest drinking sessions at 'binge' levels.

Table 3.8 Proportion drinking within and above the recommended daily limits for their gender on the heaviest drinking day in the previous week as a function of study area and sample group (%)

| Study community | Sample group | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-----------------|---------------------|--|---|---|
| Urban Affluent | Home Sample (n=9) | 22 | 11 | 67 |
| | Customers (n=4) | 0 | 0 | 100 |
| | Staff (P&W) (n=5) | 0 | 0 | 100 |
| | Total (n=18) | 11 | 6 | 83 |
| Urban Deprived | Home Sample (n=7) | 0 | 43 | 57 |
| | Customers (n=4) | 0 | 25 | 75 |
| | Staff (P&W) (n=4) | 0 | 50 | 50 |
| | Total (n=15) | 0 | 40 | 60 |
| Rural Affluent | Home Sample (n=9) | 11 | 44 | 44 |
| | Customers (n=5) | 0 | 20 | 80 |
| | Staff (P&W) (n=6) | 0 | 17 | 83 |
| | Total (n=20) | 5 | 30 | 65 |
| Rural Deprived | Home Sample (n=8) | 0 | 25 | 75 |
| | Customers (n=3) | 0 | 0 | 100 |
| | Staff (P&W) (n=6) | 0 | 0 | 100 |
| | Total (n=17) | 0 | 12 | 88 |
| TOTAL | Home Sample (n=33) | 9 | 30 | 61 |
| | Customers (n=16) | 0 | 13 | 88 |
| | Staff (P&W) (n=21) | 0 | 14 | 86 |
| | Total (n=70) | 4 | 21 | 74 |

¹ Men to drink no more than 3-4 units a day and women to drink no more than 2-3 units in one day

² Males 4-7.9 units, females 3-5.9 units

³ Males 8 or more units, females 6 or more units

Table 3.9 allows for further examination of these trends by age group among the home sample. As already mentioned, only a small proportion of the home sample drank within recommended limits. The table shows that these are primarily in the oldest age band (65+ years). Nearly all younger respondents (92%) reported a heaviest drinking episode that was double or more the recommended limits, together with two thirds of those aged 40-55 years (67%). Focusing on communities, none of the sample from the deprived areas reported drinking episodes within the recommended limits and all 18-30 year olds from those areas reported heaviest drinking episodes that were double the recommended limits. In addition, one third of the oldest age band in the deprived areas reported drinking at that level, compared with no one of that age group in the affluent areas.

Table 3.9 Home sample: proportion drinking within and above the recommended limits on the heaviest day in the previous week for their gender as a function of age and affluent/deprived communities (%)

| Study community | Age | Within recommended limits ¹ | Above recommended limits (<x2) ² | Double limits or above (≥x2) ³ |
|-----------------|---------------------|--|---|---|
| | | | | |
| Affluent | 18-30 (n=6) | 17 | 0 | 83 |
| | 40-55 (n=6) | 0 | 17 | 83 |
| | 65+ (n=6) | 33 | 67 | 0 |
| | Total (n=18) | 17 | 28 | 56 |
| Deprived | 18-30 (n=6) | 0 | 0 | 100 |
| | 40-55 (n=6) | 0 | 50 | 50 |
| | 65+ (n=3) | 0 | 67 | 33 |
| | Total (n=15) | 0 | 33 | 67 |
| TOTAL | 18-30 (n=12) | 8 | 0 | 92 |
| | 40-55 (n=12) | 0 | 33 | 67 |
| | 65+ (n=9) | 22 | 67 | 11 |
| | Total (n=33) | 9 | 30 | 61 |

¹ Men to drink no more than 3-4 units a day and women to drink no more than 2-3 units in one day

² Males 4-7.9 units, females 3-5.9 units

³ Males 8 or more units, females 6 or more units

3.2.3 The proportion of days when alcohol was consumed

The recommended drinking limits incorporate having at least two alcohol free days (AFS, 2007). The following three tables explore the range of drinking days in the course of the previous week. Behaviour is described in relation to drinking on one or two days, between three and five days and on six or seven days, the latter being more than the recommendation of having two alcohol free days. It should be noted that daily drinking does not necessarily imply high consumption. For example, older respondents may routinely have a small drink every night, although in contrast a few respondents reported drinking daily at high levels.

Among the overall sample (Table 3.10), the most common drinking experience ranged between three and five days (49% respondents) although almost a third reported drinking on six or seven days (34%). A considerable minority of respondents in affluent areas reported drinking on six or seven days (around two-fifths) whilst only around one-quarter reported this more extended pattern of drinking in deprived areas. More male than female respondents reported drinking six or seven days (42% of males and 25% of females). This pattern was consistent across the study areas with the exception of the urban affluent area where over half of female respondents (57%) reported drinking on six or seven days compared with around one-third of males (36%).

Table 3.10 Proportion drinking within the recommended maximum¹ number of days of drinking in a week as a function of study area and gender (%)

| Study community | Gender | 1 or 2 days | 3, 4 or 5 days | 6 or 7 days |
|-----------------|---------------------|-------------|----------------|-------------|
| Urban Affluent | Male (n=11) | 0 | 64 | 36 |
| | Female (n=7) | 0 | 43 | 57 |
| | Total (n=18) | 0 | 56 | 44 |
| Urban Deprived | Male (n=6) | 33 | 0 | 67 |
| | Female (n=9) | 33 | 67 | 0 |
| | Total (n=15) | 33 | 40 | 27 |
| Rural Affluent | Male (n=10) | 0 | 50 | 50 |
| | Female (n=10) | 20 | 50 | 30 |
| | Total (n=20) | 10 | 50 | 40 |
| Rural Deprived | Male (n=11) | 27 | 46 | 27 |
| | Female (n=6) | 33 | 50 | 17 |
| | Total (n=17) | 29 | 47 | 24 |
| TOTAL | Male (n=38) | 13 | 45 | 42 |
| | Female (n=32) | 22 | 53 | 25 |
| | Total (n=70) | 17 | 49 | 34 |

¹ Recommendation is to have at least two alcohol free days

Focusing on sample groupings (Table 3.11), a similar proportion of the home sample and customers tended to drink on six or seven days (almost two-fifths; 39% and 38% respectively) whilst relatively fewer staff reported this frequency of drinking (24%). In contrast, a relatively greater proportion of bar staff (24%) reported drinking on only one or two days. In relation to study area, the home sample in the urban affluent area (67%) and bar customers in rural affluent areas (60%) were most likely to report drinking on six or seven days.

Table 3.11 Proportion drinking within the recommended maximum¹ number of days of drinking in a week as a function of study area and sample group (%)

| Study community | Sample group | 1 or 2 days | 3, 4 or 5 days | 6 or 7 days |
|-----------------|---------------------|-------------|----------------|-------------|
| Urban Affluent | Home Sample (n=9) | 0 | 33 | 67 |
| | Customers (n= 4) | 0 | 75 | 25 |
| | Staff (P&W) (n=5) | 0 | 75 | 25 |
| | Total (n=18) | 0 | 56 | 44 |
| Urban Deprived | Home Sample (n=7) | 14 | 71 | 14 |
| | Customers (n=4) | 25 | 25 | 50 |
| | Staff (P&W) (n=4) | 75 | 0 | 25 |
| | Total (n=15) | 33 | 40 | 27 |
| Rural Affluent | Home Sample (n=9) | 11 | 44 | 44 |
| | Customers (n=5) | 20 | 20 | 60 |
| | Staff (P&W) (n=6) | 0 | 83 | 17 |
| | Total (n=20) | 10 | 50 | 40 |
| Rural Deprived | Home Sample (n=8) | 25 | 50 | 25 |
| | Customers (n=3) | 33 | 67 | 0 |
| | Staff (P&W) (n=6) | 33 | 33 | 33 |
| | Total (n=17) | 29 | 47 | 24 |
| TOTAL | Home Sample (n=33) | 12 | 48 | 39 |
| | Customers (n=16) | 19 | 44 | 38 |
| | Staff (P&W) (n=21) | 24 | 52 | 24 |
| | Total (n=70) | 17 | 49 | 34 |

¹ Recommendation is to have at least two alcohol free days

Finally, patterns in relation to age group among the home sample (Table 3.12) suggest that whilst overall the most common frequency observed was drinking on between three and five days (48%), those in the oldest age group are less likely to consume alcohol at this frequency, and those in the youngest age group are most likely to report this behaviour. In contrast, around two thirds (67%) of the 65+ years age group reported drinking on six or seven days compared with less than one tenth (8%) of respondents in the 18-30 years category. Half of those in the 40-55 years age group reported drinking on six or seven days. This trend is most notable in the affluent areas, where over four fifths of the 40-55 years (83%) and 65+ years (83%) age groups reported drinking on six or seven days compared with none of the respondents in the 18-30 years group drinking at this frequency.

Table 3.12 Home sample: proportion drinking within the recommended maximum¹ number of days of drinking in a week as a function of study area and age (%)

| Study community | Age | 1 or 2 days | 3, 4 or 5 days | 6 or 7 days |
|------------------------|---------------------|--------------------|-----------------------|--------------------|
| Affluent | 18-30 (n=6) | 17 | 83 | 0 |
| | 40-55 (n=6) | 0 | 17 | 83 |
| | 65+ (n=6) | 0 | 17 | 83 |
| | Total (n=18) | 6 | 39 | 56 |
| Deprived | 18-30 (n=6) | 33 | 50 | 17 |
| | 40-55 (n=6) | 17 | 67 | 17 |
| | 65+ (n=3) | 0 | 67 | 33 |
| | Total (n=15) | 20 | 60 | 20 |
| TOTAL | 18-30 (n=12) | 25 | 67 | 8 |
| | 40-55 (n=12) | 8 | 42 | 50 |
| | 65+ (n=9) | 0 | 33 | 67 |
| | Total (n=33) | 12 | 48 | 39 |

¹ Recommendation is to have at least two alcohol free days

4. Self-poured drinks

It was possible to gain additional understanding of consumption levels by asking some of the home sample to pour a typical drink. This was only undertaken when respondents' drinking reports included self-poured drinks. Therefore this approach was not used if respondents reported drinking only ready-measured drinks, for example from cans or bottles as with beers or lagers, or indeed if they reported consumption in terms of bottles of spirits or wine rather than glasses. As described in the methods section (2.1) respondents were asked to pour a typical drink (from wine or spirit bottles containing water), using their own glasses where convenient to enhance authenticity.

The researchers collected 21 self-poured drink examples. Table 4.1 summarises the results. Information was obtained for vodka and wine predominantly (9 and 8 examples respectively), with further examples for whisky, gin and vermouth and Baileys whisky cream liqueur. There were notable differences across communities in poured drink types. All the examples of wine drinking related to respondents drawn from the affluent communities (together with whisky, gin and the whisky cream liqueur). Those who reported poured vodka drinks were exclusively from the rural deprived community. All examples indicated a single poured drink would be over one standard unit and some were up to 4 units.

Table 4.1 Measured glasses: levels of self-poured drinks

| Type | Examples | Amount (mls) | Units |
|--------------------------------|----------|--------------|-----------|
| Vodka | 9 | 30 - 100 | 1.2 - 4 |
| Wine | 8 | 100 - 270 | 1.2 - 3.2 |
| Whisky | 2 | 43 - 50 | 1.72 - 2 |
| Gin & vermouth | 1 | 30 & 30 | 1.7 |
| Whisky cream liqueur (Baileys) | 1 | 196 | 3.5 |

Focusing on vodka, poured drinks ranged from 30mls to 100mls. The overall mean drink size was 57mls representing 2.3 units. However, four examples relate to a couple who reported pouring 30mls in a glass before going out to a pub or club ('pre-loading') and then around 100ml in a glass when they returned and continued to party with friends. This provides a reminder of the variability of consumption patterns even among individuals. Excluding the larger drinks, the mean of poured drinks of vodka was 45mls representing 1.8 units.

Focusing on wine drinking, poured drinks ranged from 100mls to 270mls. The overall mean drink size was 156mls representing 1.9 units. The majority poured drinks were less than the common bar measure of 175mls, although more than a small glass of 125mls. Examples of lower levels of poured wine were identified among some respondents who particularly valued the taste of wine and poured smaller amounts in larger glasses to savour the aroma. An older couple also reported using small glasses for their routine evening dinner drink, in part to ensure they did not drink too much. As already mentioned, wine drinkers came from more affluent communities and the qualitative research shows that drinkers in the affluent areas are also more likely than in deprived areas to savour taste aspects of drinking alcohol.

In relation to spirits and liqueurs, there were two examples of poured drinks of whisky, representing 1.72 and 2 units, and one older respondent (65+ years) reported drinking a single glass of gin and vermouth every evening (1.7 units). Finally, one respondent regularly drank Baileys whisky cream liqueur which, when measured in the wine glass she normally used, indicated a drink size of 196mls (3.5 units).

5. Insights into apparent reporting discrepancies

Finally, the diaries and the completion process provide useful insights to research objective 2, “to contribute to potential explanations of the discrepancy between reported levels of drinking and observed alcohol-related harm in drinkers in drinkers from lower socio-economic groups”. The 2003 Scottish Health Survey recognises the tendency for surveys to underestimate adults’ levels of alcohol consumption (Erens and Moody, 2005). It cites a range of reasons including “problems of memory, social desirability, and the difficulties involved in assigning an average estimate to an activity that varies from day to day” (Erens and Moody, 2005: 4). As a useful comparison, HM Revenue and Customs 2005 data on duty paid on alcohol cleared for sale in the UK suggests that the average adult purchased the equivalent of 11.3 litres of pure alcohol over the year (SHAAP, 2007). By contrast, self-reported data in the General Household Survey suggests that the average adult consumed the equivalent of 5.6 litres of pure alcohol during the whole of 2005. This shows that adults are reporting drinking less than half the amount of alcohol that is cleared for sale in the UK (SHAAP, 2007).

5.1 Insights from diary completion process

Drawing on researchers’ impressions of the interviews, it was felt that respondents were relatively open about reporting their drinking behaviours during the diary completion, although a few expressed surprise or embarrassment about the amounts by the end of the process. Accounts tended to be consistent with behaviours already outlined during the more open discussion of the qualitative interview. It may be that the overall interview process had allowed the development of a trusting and relaxed interaction that may be harder to establish in the context of more detailed questionnaire based interview.

In addition, it was apparent that it was not an easy process to recall behaviour, even over the recent past, especially if drinking did not follow a set routine. Respondents used other landmarks from their week’s activity to try to tie down where they had been on what day, even before trying to recall precisely what was drunk. This process was more apparent when a couple were being interviewed and the researcher could observe the discussion between them and their differing perceptions of the week’s activities. The approach of interviewer-led diary completion supported this process. Focusing on one day at a time, starting with the previous day and working back, aided recall and was less abstract than asking in general about one week’s drinking. It also enabled continued contextualisation and prompting, for example: “Thinking about yesterday, where were you yesterday? Did you have a drink?... What did you have?” and so on.

Using this method also meant, however, that completion could be quite time consuming, occasionally taking ten minutes or more. This more leisurely approach might be harder to replicate in a questionnaire based interview.

Discussion during the completion process also reinforced the researchers’ impression that individual respondents’ drinking patterns and consumption levels varied considerably. For example there were a variety of reasons given why the

reported behaviour in the previous week may be seen as atypical compared with the respondent's usual behaviour. Thus, respondents may describe some episodes as involving unusually high consumption, for example, celebrating St Patrick's Day or a birthday. On the other hand, in some cases reported drinking was felt to be unusually low, for example as a result of work or study commitments. Other variations reported related to shared childcare across different households, for example freedom to drink more if a young child was being cared for by an estranged partner or by a grandparent. These are described more fully in the qualitative report.

5.2 Insights from comparison between diaries compiled in recruitment and interview contexts

Interview drinking diaries could be compared with the relevant recruitment drinking diaries for 30 individuals. Recruitment diaries had the same format as the interview diaries and were part of a short questionnaire which was designed to ascertain suitability of potential respondents to be part of the home sample.

Differences in reporting are discussed here in order to contribute further insights into variable reporting in surveys in general. However, there are a number of aspects to be borne in mind which may also explain variance and accuracy of reporting. Importantly, the recruitment diaries were completed over a different seven day period to the drinking diaries and, as already mentioned, responses indicate that individual drinking behaviours are likely to vary day-to-day and week-to-week. In addition, there are variations in context; the recruitment diary was completed after a few introductory questions, typically standing on the respondent's doorstep, rather than at the end of a longer interview in a more relaxed environment. This is likely to result in less time to consider each answer. The longer interview is also likely to enable a better rapport between questioner and respondent thus facilitating more open feedback.

Bearing these contextual issues in mind, of the 30 cases where comparison can be made, the following differences are identified:

- 19 interview diaries recorded higher unit intake than at the recruitment interview
- 10 interview diaries recorded lower unit intake
- One interview diary recorded the same overall intake.

Of those recording higher intake, seven recorded twice or more units than at recruitment and 11 recorded less than twice or more units. Examination of those showing the greatest differences illustrates a number of reasons for variable reporting of unit intake (Table 5.1 and outlined below):

Table 5.1 Respondents recording twice or more units at interview compared with recruitment

| ID | Area | Age | Gender | Units at interview | Units at recruit | Ratio interview :recruit | Potential explanations |
|-----------|----------------|------------|---------------|---------------------------|-------------------------|---------------------------------|--|
| 101 | Urban Affluent | 40-55 | Female | 59.9 | 16 | 3.5 | Daily drinking at interview, only on 3 days at recruitment. Glass of Baileys was 196mls (3.5 units/glass) |
| 102a | Urban Affluent | 18-30 | Male | 36.8 | 16 | 2.3 | Student working on project at recruitment but finished by interview time |
| 102b | Urban Affluent | 18-30 | Male | 33 | 16 | 2.1 | Student working on project at recruitment but finished by interview time |
| 106 | Urban Affluent | 65+ | Female | 14 | 7 | 2.0 | Daily drink of whisky 50mls at interview (2 units/glass), recorded as 1 unit at recruitment |
| 202 | Urban Deprived | 40-55 | Male | 25 | 11 | 2.3 | Drinking on same occasions but lower quantity recorded at recruitment |
| 301a | Rural Affluent | 40-55 | Male | 64 | 32 | 2.0 | Daily beer at interview, only on 2 days at recruitment. Daily glass of wine was 270mls (3.2 units/glass) |
| 406 | Rural Deprived | 40-55 | Female | 49.5 | 19.45 | 2.5 | 4 days drinking at interview (including family BBQ), only 1 session at recruitment. 'Big Beastie' is twice size of normal ready to drink (3.8 units) |

- *variations in unit measure of 'a glass'* (see also Section 4). Respondent 301a reported drinking a daily glass of wine, but measurement of the typical glass used at home indicated that this was 270mls (3.2 units) rather than 1 unit allocated by the recruiter completing the recruitment interview. For Respondent 101 the measured glass of whisky cream liqueur was 196mls (3.5 units) rather than the more typical 50mls (0.9 units) and Respondent 106's glass of whisky was 50mls (2 units) rather than the allocated 1 unit
- *drinking on a variable number of occasions*. Respondents 102a and 102b reported lower frequency of drinking at recruitment because they were working hard on a university project. By the time of the full interview more normal frequency had developed. Respondent 406 reported that she normally drank less often than in the interview week when there had been an unusual number of social occasions. There were however, two respondents (301a and 101) who described daily drinking as the norm during the interview but had not reported this at the recruitment interview
- *variable intake on routine occasions*. Respondent 202 reported drinking on the same routine occasions during the week on completion of both diaries but reported consuming less each time at the recruitment interview
- *recruiter underestimate*. Respondent 406 reported drinking a 'Big Beastie' which contains more units than the normal ready to drink bottle, although this might be less relevant in surveys where calculations are done independently.

Overall, it is notable that these examples of the interview diary which reveal markedly heavier consumption than recorded during the recruitment interview largely relate to respondents from affluent rather than deprived areas. It is extremely difficult to identify examples where respondents have knowingly under-reported at recruitment, but the most likely are those who described usually drinking on a daily basis at interview but did not report that to the recruiter. The two respondents for whom one might conjecture this is possible are both located in affluent communities (respondents 101 and 301a). Thus while research objective 2 suggested a focus on discrepancies in reporting among drinkers from lower socio-economic groups, it would appear probable that discrepancies can occur across all groups from this small sample.

Rather than deliberate under-reporting, discrepancies appear likely to relate to varied drinking glass measures and hence units consumed, at least in home drinking contexts. Discrepancies would also appear to relate to the considerable variations in drinking behaviours in everyday life.

Finally, a third of the compared diaries showed *higher* consumption levels in the recruitment diary than the interview diary, again a reminder of the variability of consumption patterns.

6. Summary and conclusions

6.1 Drinking patterns

6.1.1 Mean consumption levels

Mean weekly consumption:

- overall sample mean weekly consumption was 40 units, considerably above the recommended weekly drinking limits
- female respondents drank significantly less than male respondents (mean weekly consumption 29.04 units compared with 49.09 units)
- respondents recruited as bar customers reported drinking more (55 units) than the home sample (33 units) and bar staff (39 units)
- respondents in the rural deprived community appeared to have higher overall consumption levels than do both the urban study communities whilst those from the rural affluent area showed lower consumption levels.

Mean heaviest day consumption in the previous week:

- the mean heaviest day's consumption of 16 units for the overall sample is again considerably higher than the recommended daily drinking limits
- consumption levels were consistently higher among males than females, with the greatest gender differences apparent in the rural deprived area
- as with mean weekly consumption levels, the mean heaviest reported intake in one day appeared highest among the rural deprived sample and lowest in the rural affluent area.

Mean days of drinking:

- across the overall sample, drinking was reported on a mean of 4.46 days
- drinking in the deprived study areas appeared to be more focused than in the affluent areas, irrespective of urban or rural locations (means of less than four days in the week compared with just over five days)
- overall, males tended to drink on more days than females, most markedly in the urban deprived area
- the home sample (4.73 days) tended to consume alcohol on more days than bar customers (4.44 days) and staff (4.05 days). This trend was most apparent among respondents from urban affluent communities.

Age (home sample):

- within the home sample (n=33), mean consumption was highest among the youngest cohort (18-30 years) with the oldest group (65+ years) reporting lowest consumption levels
- in affluent areas, however, 40-55 year olds reported drinking more over the week than their younger and older counterparts; and in rural affluent areas also drinking more on their heaviest day but showing less concentrated drinking. (E.g. urban affluent 40-55 year olds mean weekly and heaviest day's consumption was 46 units and 11 units respectively but consumed over a mean of 7 days)

- in terms of days of drinking, the younger respondents reported more focused drinking (3.25 days) whilst the middle and older age groups reported drinking means of over five days.

6.1.2 Examination in relation to recommended drinking limits

The current recommendation is to drink no more than 21 units per week (men) and 14 units a week (women) and for men to drink no more than 3-4 units a day and for women to drink no more than 2-3 units in one day (AFS, 2007). In addition, at least two alcohol free days in a week are recommended.

Total amount drunk in the previous week:

- less than one quarter of respondents drank within the recommended weekly limits for their gender (23%)
- nearly half of the overall sample reported drinking twice or more than the recommended weekly drinking limits for their gender (47%)
- females were more likely to drink within recommended weekly drinking limits (up to 14 units, 34%) than males (up to 21 units, 13%), particularly within urban areas
- among the home sample, in the affluent areas two thirds of 40-55 year olds reported drinking double or more than the recommended weekly drinking limits, with no 18-30 year olds reporting drinking at that level, whilst in the deprived areas a large majority of 18-30 year olds reported these higher consumption levels (four-fifths).

Reported heaviest day's drinking in relation to recommended daily drinking limits:

- very few respondents (less than 5%) reported drinking within the recommended limits on their heaviest drinking day in the previous week
- nearly three-quarters of the sample reported at least one episode of 'binge drinking' in the previous week, i.e. double the recommended daily drinking limits or over, especially apparent in the urban affluent area and the rural deprived area
- more males than females (84% vs. 63%) reported having experienced binge drinking episodes and this trend was consistently observed across all areas
- among the home sample, nearly all 18-30 year olds (92%) reported a 'binge drinking' episode, together with around two thirds of those aged 40-55 years.

The proportion of days when alcohol was consumed:

- overall, the most common drinking experience ranged between three and five days (nearly half respondents) although almost a quarter reported drinking on six or seven days (i.e. more than the recommendation to have at least two alcohol free days)
- a considerable minority of respondents in affluent areas reported drinking on six or seven days (around two-fifths) whilst only around one quarter reported this more extended pattern of drinking in deprived areas
- more male than female respondents reported drinking on six or seven days (42% of males and 25% of females)
- among the home sample, around two thirds of the 65+ years age group report drinking on six or seven days, together with around half of 40-55 year olds, most notably in affluent areas.

6.2 Self-poured drinks

Respondents in the home sample who reported drinking self-poured drinks were asked to pour a typical drink (from wine or spirit bottles containing water) and 21 examples were obtained. There was considerable variation in poured drink size:

- those who reported poured vodka drinks were exclusively from the rural deprived community, and wine drinkers were exclusively from affluent areas
- all examples indicated a single poured drink would be over one standard unit and some were up to 4 units
- poured vodka drinks (n=9) ranged from 30mls to 100mls (overall mean drink size 57mls representing 2.3 units)
- poured wine drinks (n=8) ranged from 100mls to 270mls (overall mean drink size 156mls representing 1.9 units)
- additional examples of spirits and liqueurs (n=4) showed drinks varying from 1.7 to 3.5 units.

6.3 Insights into apparent reporting discrepancies

6.3.1 *Insights from diary completion process*

- drawing on researchers' impressions of the interviews, respondents appeared relatively open about reporting their drinking behaviours during diary completion
- the overall interview process may have allowed the development of a trusting and relaxed interaction that may be harder to establish in the context of more detailed questionnaire based interview
- recalling behaviour was not straightforward. This was especially if drinking did not follow a set routine, and often respondents highlighted varied drinking behaviours
- the interviewer-led diary completion may have supported this process, by focusing on one day at a time and using suitable prompts to enhance contextualisation
- completion could be time consuming, and a more leisurely approach might be harder to replicate in a questionnaire based interview.

6.3.2 *Insights from comparison between diaries compiled in recruitment and interview contexts*

- interview drinking diaries were compared with the relevant recruitment drinking diaries for 30 individuals
- contextual issues, such as interview location, should be borne in mind in comparing results
- aspects that appeared to have contributed to variations in totals consumed included: variations in unit measure of 'a glass'; drinking on a variable number of occasions; variable intake on routine occasions and recruiter underestimate
- examples of greater variations in reporting in this sample largely related to respondents from affluent rather than deprived areas.

6.4 Conclusions

The overall sample profile is characterised by relatively high weekly and daily alcohol consumption, with mean consumption levels considerably above the recommended weekly and daily drinking limits, despite not setting out to recruit extremely heavy drinkers.

The study reveals more concentrated drinking in disadvantaged areas, i.e. drinking on fewer days combined with as heavy or heavier drinking levels, which is likely to have a more injurious effect on health.

There are examples of high consumption among affluent drinkers, particularly 40-55 year olds, but those tended to be spread out across the week.

The study showed considerable variation in the size of drinks in the home context which would impact on survey measures.

Additional aspects impacting on apparent discrepancies in reporting were identified, including difficulties in recall, and the need for time and prompts to facilitate the process.

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Appendix

Appendix 1. The study areas for the primary research

'Affluent' and **'Deprived'** areas have respectively higher proportions of socio-economic groups AB and E residents than the Scottish average. They are also respectively low and high on indicators such as proportion of adults unable to work through disability and low or high on numbers admitted to hospital for alcohol related disorders in comparison to the Scottish average². **'Rural'** areas are small towns distant from major towns, with populations of 7,000 and 8,500.

Urban Affluent: located in the West End of a major Scottish city, this is a mixed commercial and residential area, including a large university. There are a wide range of boutiques and delicatessens as well as other small shops and many pubs and restaurants that attract both locals and people from other parts of the city. One study bar is located on a busy arterial road among other bars and shops whilst the other is in a more secluded residential area.

Urban Deprived: situated in the North of the same city, this is characterised by traditional tenement corporation housing and more recent housing association estates. Whilst the population characteristics incorporated a range of socio-economic and health indicators of disadvantage, the choice reflects the decision to avoid areas exhibiting extreme aspects of urban decline, including heavy drug taking. Both study bars are located on the main road through the area, which has many small local shops including off-licenses and bookmakers and other pubs.

Rural Affluent: this is a market town surrounded by satellite villages, 20 miles from the nearest major conurbation. It has a busy town centre and vibrant social life with numerous shops and a well developed hospitality sector of bars, hotels and historical visitor attractions which serve a seasonal tourist trade. Both bars are located in the town centre, one a recently renovated bistro style bar and the other part of a traditional family hotel.

Rural Deprived: this is a former mining village made up of two large local authority housing schemes built around a rundown 1950s shopping centre, with some recent peripheral private housing. Despite its size there are relatively few facilities, and residents appear relatively isolated from other urban areas. The two study bars, both within 100m of the shopping centre, are the only public bars in town, with two licensed outlets in private clubs.

² Scottish Public Health Observatory (ScotPHO) (2008) 'Community Profiles'. Available: <http://www.scotpho.org.uk/communityprofiles> - Last accessed 15 April 2008.