

Drinking in the UK

An exploration of trends

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Reviews research and highlights trends in alcohol consumption over the last 20 to 30 years.

A key part of the Government's alcohol harm reduction strategy is to monitor changes in drinking habits over time and to identify what factors are potentially contributing to the rising levels of consumption.

This study is a systematic review of research relevant to trends in alcohol consumption over the last 20 to 30 years in the UK.

The review:

- assesses the number, types and quality of existing research studies;
- synthesises the findings to evaluate alcohol drinking trends in the UK, highlighting key changes;
- discusses possible explanations for the trends observed, assessing what factors may have contributed to changes;
- explores implications for policy;
- makes recommendations for future research.

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Executive summary

Scope

This report describes the methods and findings of a systematic review of research relevant to trends in alcohol consumption over the last 20 to 30 years in the UK, and a brief assessment of the factors that may contribute to the observed trends.

The review assesses the number, types and quality of existing research studies and synthesises the findings to evaluate alcohol drinking trends in the UK. Possible explanations for observed trends are put forward. Implications for policy are discussed along with recommendations for future research.

Background

The UK Government's harm reduction strategy (Department of Health *et al.*, 2007) has highlighted the need for promoting sensible drinking in the light of increasing evidence of rising problems associated with alcohol consumption. One key action point of the strategy is to monitor changes in drinking habits over time and to identify factors influencing drinking behaviour potentially contributing to the rising levels of consumption.

Our aims were to describe alcohol drinking trends in the general population in England, Northern Ireland, Scotland and Wales over the last 20 to 30 years, and to describe how they vary according to age, gender, ethnicity, socio-economic status and geographic region. Additional aims were to describe the trends in types of alcoholic drinks consumed and the location or context in which drinking takes place. We also discuss possible explanations for a selection of interesting recent trends in drinking.

Methods

A broad range of studies were considered for the review.

For the assessment of trends in drinking we conducted a systematic review of the literature. We searched electronic databases, scanned reference lists and searched specialist websites for studies to include in the review.

For the summary of trends in drinking, the following study designs were sought: general population surveys reporting on cross-sectional analyses at different time points or reports of epidemiological and alcohol expenditure and sales data analysed from official databases such as the Office for National Statistics (ONS) and the World Health Organization (WHO).

For the assessment of factors possibly contributing to a selection of interesting trends the authors summarised and offered brief explanatory notes, which were then pooled and edited for the discussion section of this final report supported by findings from quantitative and qualitative research studies.

Revised methods for calculating a unit of alcohol have been introduced recently. These affect data recorded for Great Britain for 2006 (Goddard, 2006), Scotland for 2003 (Bromley *et al.*, 2008) and pupils in England for 2007 (Fuller, 2008). The revised method effectively doubles the units of alcohol calculated for a glass of wine. The trends presented in this report incorporate this revised method for the most recent year, if available, and it is clearly stated when used. It is worth noting that the revised method of alcohol unit calculation was introduced because of the trend for using larger sizes of wine glasses and the increasing strength of wine, beer and lager, which were not accounted for by the original methods of unit calculation and are thought to contribute to underestimation of alcohol consumption in surveys.

Main findings

Trends in adult drinker status

There has been a decline in the prevalence of drinking over the last decade in Great Britain as a whole, with greater change observed in younger adults (aged 16 to 24 and 25 to 44 years).

In contrast, there was a notable increase in the prevalence of drinking in Northern Ireland in the last two decades in both men and women, and across all adult age groups, but especially in the younger adults (aged 16 to 24 years) and 45- to 64-year-old women.

For England and Scotland there was little change observed, but data for fewer time points was available, and is available only up to 2002 for England and 2003 for Scotland.

The different definitions used for classifying adults as drinkers or non-drinkers varied between surveys, which may also have contributed to the inconsistency in the trends between Great Britain as a whole and England and Scotland.

Trends in adult drinking – average consumption

Overall, there has been an increase in average weekly consumption for both men and women since 1992 in Great Britain. This overall trend masks some interesting age and gender differences. Even after taking revised methods for unit calculation into consideration in 2006, average consumption among 16- to 24-year-old men has fallen in recent years following a pronounced peak around 1998 to 2000. While, in all other male adult age groups, there has been a general overall increase, in women the increase is more marked, particularly for age groups 16 to 24 and 45 to 64 years based on revised estimates for 2006.

Data for England up to 2002 and Scotland to 2003 (based on revised methods of unit calculation) is also in broad agreement with the trends observed for Great Britain as a whole, showing that average consumption has increased in women of all ages, and in men 35 years and older. Consumption in men aged 16 to 24 and 25 to 34 years has either slightly decreased or shown little change.

Trends in adult drinking to excess – over weekly limits

From 1988 to 2006, there has been an overall increase in drinking in excess of recommended weekly limits for men and women in Great Britain, taking into consideration revised methods for unit calculation. The change is more marked in women than in men. Excessive consumption among 16- to 24-year-old men increased initially from 1992 to 2000, but has since fallen to a similar proportion to 1988. A similar trend was observed in women aged 16 to 24 years, though the decline occurred after 2002. This is in contrast with older age groups where excessive consumption has increased based on revised methods of unit calculation.

Data for England and Scotland shows similar trends to Great Britain as a whole. For men and women in Wales there was little change over a short time period from 2003 to 2007. In contrast, for men and women in Northern Ireland, there has been an increase in the proportion exceeding recommended weekly limits over a longer time-span from 1988 to 2007. The steepest increase occurred in young adults aged 18 to 24 years, with older age groups showing less change for men and women.

Trends in adult drinking to excess – twice recommended daily limits (binge drinking)

This data suggests that levels of binge drinking among men in Great Britain have remained fairly stable from 1998 to 2006. The proportion of young men aged 16 to 24 years binge drinking has fallen from 39 per cent in 1998 to 30 per cent in 2006, despite taking into consideration revised methods for unit calculation. However, in older age groups, there was a steady increase over this period. For women the overall level of binge drinking has almost doubled from 8 per cent in 1998 to 15 per cent in 2006, with the increase most pronounced in women aged 25 years and older.

Similar trends were observed for men and women in England. Limited data on trends in binge drinking were available for Scotland. Between 1998 and 2003 the proportion of men binge drinking has fallen; the decline was more apparent

in young men aged 16 to 24 years. In women, an increase was seen for all age groups. For Wales, there has been little change in the proportion of men and women binge drinking from 2003 to 2007.

Trends in drinking among young people – drinker status

Trends were similar for England, Northern Ireland and Scotland. The prevalence of ‘ever’ drinking decreased in boys and girls aged 8 to 15 years in England from 2002 to 2007.

There was an increase in ‘never’ drinkers in boys and girls aged 13 and 15 in Scotland in one survey, with an increase in ‘ever’ drinking in girls aged 8 to 15, but a slight reduction in boys in another survey. The slight reduction of ‘ever’ drinking occurred across boys of most ages (bar 11 and 15 year olds) and the increase of ‘ever’ drinking occurred in girls of all ages (bar 8 year olds).

Data for Northern Ireland was difficult to interpret because of the slight differences in survey questions, but a reduction was shown in children aged 11 to 15 years from 1997 to 2003.

Trends in drinking among young people – drinking frequency and average consumption

The trends suggest that, in both girls and boys from 8 to 15 years old, there has been a recent decline in the prevalence of weekly drinking in England, Scotland and Wales. The reductions were more marked in older age groups.

The prevalence in 2006 is the same in 11- to 15-year-old girls as in boys of the same age in England; in Scotland the decline was greater in boys, such that the prevalence in 2006 is actually higher in 13- and 15-year-old girls than in boys.

While the Scottish Health Survey (SHS) showed an increase in boys and girls aged 14 and 15 years, the sample sizes were small and data is available only for 1998 and 2003. The other national surveys show declines in weekly drinking in more recent years. There has been no clear pattern overall for the proportion of 15- and 16-year-old pupils in the UK drinking 40 times or more in a lifetime or ten times or more in the last 30 days from 1998 to 2003.

In England average units of alcohol consumed by pupils aged 11 to 15 years have increased from

1990 to 2007. The increase is found in 14- and 15-year-old boys and girls. For 11 to 13 years olds there was a slight decrease in 2007 from a peak in 2006. These conclusions are based on estimates using the revised method for unit calculation and observations over the next few years will indicate if this is a real downturn.

In Scotland there has been an increase in mean alcohol consumption in young people aged less than 16 years between 1990 and 2006. However this observation is based on very little data.

There were few data on trends in prevalence of drunkenness and binge drinking in young people. Data from the European Schools Survey Project on Alcohol and other Drugs (ESPAD) for pupils 15 and 16 years old in the UK shows an increase in binge drinking from 1995 to 2003, particularly for girls. For pupils in Scotland there was no consistent pattern, with little overall change in excessive drinking.

Notable trends

Five interesting trends were identified and are discussed in greater detail in the report:

- increase in drinking among women;
- increase in drinking among middle and older age groups;
- increase in drinking in Northern Ireland compared with the rest of the UK;
- a possible recent decrease in drinking among 16 to 24 year olds;
- rising consumption among very young adolescent drinkers over the last decade.

Recommendations

The main topics in need of further research arising from this review are as follows.

More information is needed to determine if women of any age and men and women in middle and older age groups are aware that their drinking behaviour may be harmful to their health. What is their knowledge about alcohol content

of commonly consumed alcoholic beverages? Do people know what safe drinking limits are and what are their perceptions of the risks of excessive consumption? What are the causes and consequences of current and future drinking patterns?

More research is needed to evaluate if screening for alcohol misuse and delivery of a brief intervention designed to reduce alcohol consumption is an effective strategy in women. A Cochrane Systematic Review (Kaner *et al.*, 2007) found that there was inconclusive evidence of effectiveness of brief interventions in women and that more research is needed.

Greater knowledge of the influence of the family on drinking is needed. More research is required on the socialisation of drinking in young people, paying attention to gender and age. For example, what do parents of young people perceive to be acceptable in terms of quantity and frequency of drinking at different ages? When and why do parents and family members provide alcohol to their children? What guidelines do they expect their children to follow in terms of drinking behaviour and how do they enforce those guidelines?

Policy and practice implications

Careful monitoring of women's drinking is required to determine if the current trends continue to increase or taper off, whether heavy drinking patterns in younger women continue as women age and whether new generations will follow these recent trends and patterns.

While greater awareness among drinkers about the amount of alcohol that can damage health is required, effective health education strategies that incorporate approaches that facilitate behaviour change are needed.

Evidence-based prevention efforts to reduce risk drinking in young people are required. Several Cochrane Systematic Reviews have identified the importance of developing appropriate social norms and skills, and the role of parents in supporting this (Faggiano *et al.*, 2005; Foxcroft *et al.*, 2002; Gates *et al.*, 2006).

Routine monitoring of alcohol consumption across England, Scotland, Wales and Northern Ireland using consistent alcohol consumption measures will aid interpretation of future trends. Increased recruitment of under-represented groups such as different ethnic groups would improve the reliability of comparisons between survey years.

Alcohol strategies need to take into account gender and age differences in drinking behaviour.

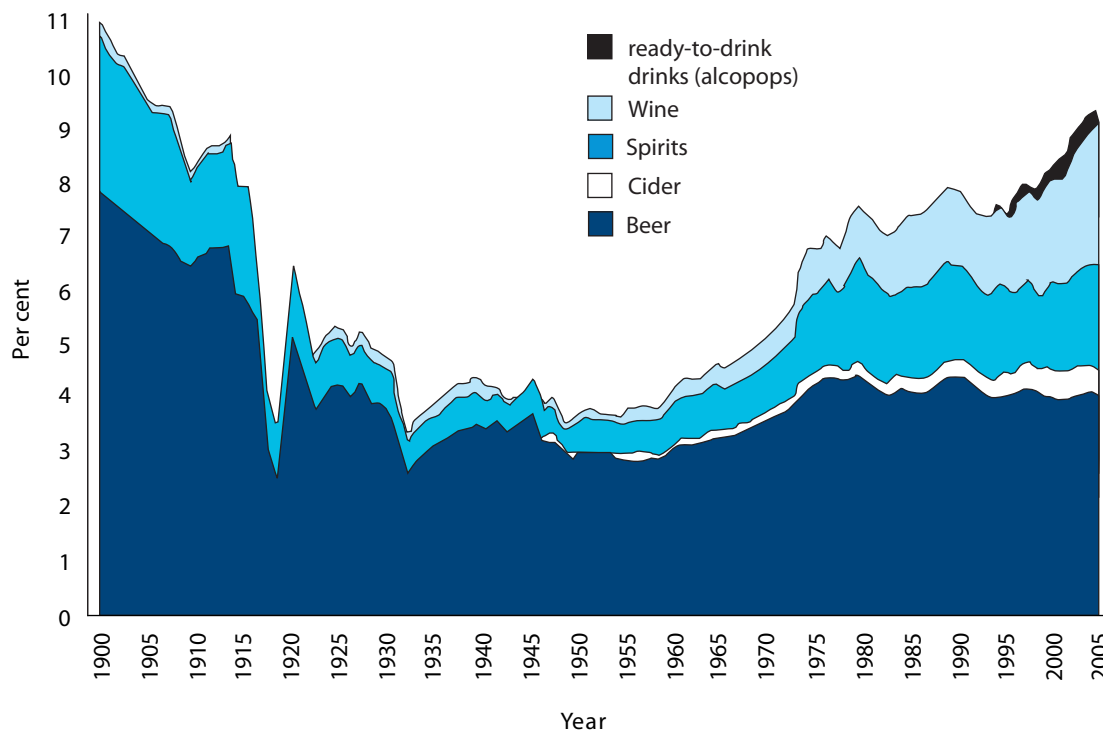
1 Background

Alcohol drinking is an integral part of family, social and occupational life for many people in the UK. While low to moderate consumption is not associated with excess risk, and may even be beneficial, excessive consumption, particularly in young people, is a growing cause for concern to policy-makers, health and social care professionals, and the public. The National Alcohol Strategy *Safe. Sensible. Social* (Department of Health *et al.*, 2007) offers guidance to counter some of the growing trends and patterns in alcohol use and its adverse consequences on the individual and society. A key message from the strategy is that more needs to be done to reduce alcohol misuse in society and to promote sensible drinking. One action point is to monitor changes in drinking habits over time, and identify potential factors that influence drinking culture and contribute to rising levels of alcohol consumption.

Alcohol consumption is a part of the lives of the majority of the UK population and the excessive pattern of consumption frequently reported in recent years is not a new phenomenon. Per capita alcohol consumption has been higher during previous times, in particular during the late middle ages, the 18th-century gin epidemic and the beginning of the 20th century (Plant and Plant, 2006).

Over the last century in the UK, alcohol consumption has varied considerably. According to Customs and Excise data (British Beer and Pub Association, 2007), per capita consumption of pure (100 per cent) alcohol at the beginning of the 20th century was higher than at any other point in the following years (see Figure 1). There was a sharp decline in consumption during the period of the First World War, 1914 to 1918, as pub opening hours were limited, and other measures

Figure 1: Per capita (litres per head per year) consumption of pure alcohol in the UK population, 1900–2005



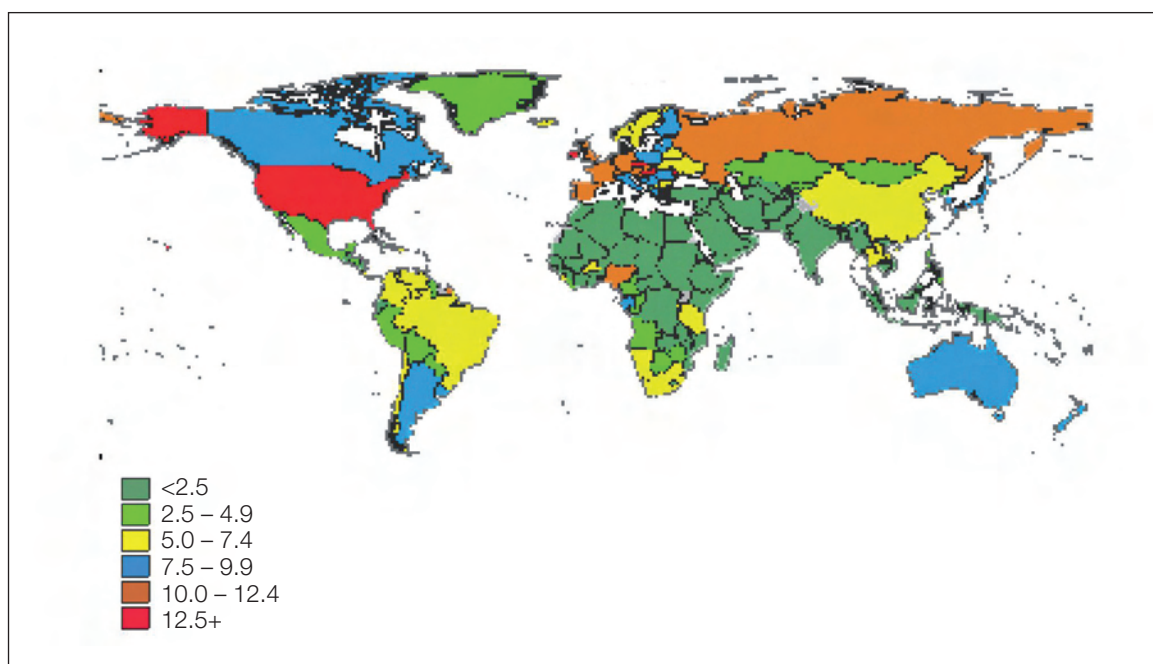
Source: British Medical Association (2008).

such as reduced-strength beer and prohibition of buying rounds were introduced through fear that heavy drinking would undermine the war effort. There was a smaller decline during the economic depression of the early 1930s. Since the early 1950s, per capita consumption of pure alcohol has risen from just over four litres to over eight litres. It reached a peak in 2004 and has subsequently declined from 9.4 litres in 2004 to 8.9 in 2006. While increasing trends in consumption are evident for all of the main categories of alcoholic beverages, the increase in wine consumption is a major contributor to the overall trend. These figures are likely to be underestimates. They are based on tax-paid sales and do not take into account home-produced alcohol, imported alcohol and alcohol

consumed by foreign visitors. Based on a survey of UK adults in 2000, total unrecorded consumption, including cross-border imports, smuggling and home production, was estimated as two litres of pure alcohol per adult (Leifman, 2001). This would mean that the official recorded consumption based on tax-based sales may be underestimated by as much as 20 per cent.

While excessive alcohol consumption and drunkenness is characteristic of what we think of as British drinking behaviour, these drinking patterns are not unique to the UK. Nonetheless, comparison of per capita consumption among adults aged 15 years and over shows the UK to be among the heaviest consuming countries in Europe (see Figure 2).

Figure 2: Per capita recorded consumption (litres pure alcohol per person per year) in adults aged at least 15 years in the world, 2003



Source: World Health Organization Global Alcohol Database (www.who.int/Global/Atlas/).

2 Aims

The aims of the report were as follows.

- To describe and compare alcohol drinking trends in the general population in England, Northern Ireland, Scotland and Wales over the last 20 to 30 years.
- To describe how trends vary according to age, gender, ethnicity, socio-economic status and geographic region.
- To describe the nature of drinking in terms of types of alcoholic drinks consumed and location or context in which drinking takes place.
- To identify and discuss possible explanations for these trends and patterns such as:
 - changes in alcohol availability including off- and on-licence sales;
 - policy, pricing and licensing changes over time;
 - influence of youth culture, advertising and marketing, and changes in disposable income.

3 Methods

The broad review question was answered in different ways by different types of evidence in the review.

Inclusion and exclusion criteria for studies reporting trends in drinking

We sought reports of studies that met the following criteria in order to be included in the review of trends in drinking.

The population had to be:

- from the UK - studies covering a broader population had to present results separately for the UK or its constituent countries;
- of any age or ethnic group.
- Report trends over time in alcohol consumption such as quantity and frequency of drinking, drunkenness and binge drinking, or trends over time in alcohol spending and alcohol sales. Indirect measures of consumption such as trends in alcohol-related morbidity, mortality or crime were not sought.
- Studies had to report on trends over time for any period of time between the 1970s and 2007.
- Study types were from the following categories:
 - repeated national cross-sectional surveys; or
 - independent publications reporting trends in alcohol consumption from secondary analyses not available in the official publications of each survey; or
 - UK national statistics reporting alcohol consumption, alcohol spending and sales.

- Cohort or panel studies reporting trends in drinking in the same cohort of participants over time were excluded.

Analysing change over time – rationale for our approach

One important aspect of interpreting change over time is whether it represents a real change, rather than a statistical artefact due to a change in survey methodology or question design. Types of studies that yield data that can be used for analysing change over time include:

- repeated cross-sectional surveys;
- panel studies (repeated cross-sectional time series);
- cohort studies (a type of panel study).

Repeated cross-sectional surveys

This is a design where a survey is administered to a new sample at successive time points. Respondents in one year will be different people from respondents in another year. Data from such surveys can be summarised cross-sectionally for individual time points, or multiple time points can be combined to produce change over time. Repeated cross-sectional data can be used to track patterns of change at an aggregate level, but not at an individual level. Changes over time in behaviour can be examined if samples are available for consecutive years. For example, changes in levels of alcohol consumption can be determined over time, but they cannot tell us how alcohol consumption for an individual has changed over time.

Panel studies

In panel studies, the same individuals are followed up over a given period of time. The respondents

interviewed at one time point are the same as the respondents interviewed at subsequent time points. In contrast with repeated cross-sectional data, data from panel studies can be used to track changes in an individual's behaviour over time. For example, the change in an individual's alcohol consumption over time and the factors that might influence the behaviour can be investigated. The disadvantage of these studies is that they are susceptible to attrition of participants over time and repeated exposure to the same questions may influence participant responses.

Cohort studies

Cohort studies are very similar to panel studies, but are characterised by assembly of a group of individuals who share a common characteristic (commonly this is age) and are followed up over time. By examining multiple cohorts over time, it is possible to distinguish between age and cohort effects. Cohort effects are those that are attributable to the social, economic and political context that the person has lived through. Differences between age groups can reflect differences in age-related effects and also cohort differences.

Identification and selection of studies reporting trends in drinking

Studies were identified using several search strategies. Systematic searches were conducted of the following electronic databases: MEDLINE, BIOSIS, ASSIA and International Bibliography of Social Sciences (IBSS). A sensitive search using free text and database-specific indexing terms was developed for MEDLINE (see Appendix 1). This was then adapted for use in other databases in order to account for differences in syntax and thesaurus terms. Searches were carried out initially in October 2007 and were then updated in August 2008.

Reference lists of retrieved studies were scanned for additional potentially relevant studies.

Websites of the Department of Health, National Assembly for Wales, Scottish Executive, Northern Ireland Health Promotion Agency, European Schools Survey Project on Alcohol and other Drugs (ESPAD), Health Behaviour in School-aged

Children (HBSC), Office for National Statistics (ONS) and British Beer and Pub Association (BBPA) were searched. Additionally, the alcohol data dictionary and map compiled by the Institute of Alcohol Studies was used, and experts in the field were contacted.

All records identified by the process described above were downloaded into reference manager software (Endnote Version 7) and the titles and abstracts were screened for relevance against the review inclusion criteria. The full report was then obtained for all potentially relevant studies and screened for review inclusion.

Assessing the quality of studies, data extraction and study synthesis

One danger in compiling trends over time from reported aggregate data is that there may be problems with comparability over time because of the sampling methods, the population sampled, the way the question is worded, the interview mode and weighting methods used. There is no formally recognised assessment tool for assessing cross-sectional surveys. However, methodological limitations are similar to those of other observational research studies, in particular cohort studies, and relate to the likelihood of introducing bias because of three key features. These are:

- selection of the participants;
- method of ascertainment of drinking outcomes;
- completeness of data for analysis.

Therefore, studies reporting on trends in alcohol consumption were assessed for their methodological quality according to criteria described in Newcastle-Ottawa scale for cohort studies and adapted for use with cross-sectional survey (Wells *et al.*, 2008).

Along with information for the quality assessment, the following data was also extracted from each report: population group, age range, response rate, method for defining a unit of alcohol and reported trends for each drinking outcome by gender, age, ethnicity, socio-economic group and geographic region if available.

The findings from the cross-sectional surveys are summarised in tables, figures and the text. For adults, these are organised according to four main categories of drinking: prevalence of alcohol drinking, average consumption, drinking above recommended limits and binge drinking. Within these broad categories of drinking, data are organised by geographic region and then by gender, by age and finally by any other subgroup where data were available. Because the drinking outcomes for the surveys conducted on young people were not the same as for adults, the findings from these surveys are presented in a separate section, also organised by drinking category: prevalence of drinking, frequency of drinking and average consumption, and prevalence of drunkenness. Finally, in the last section, data on trends in consumption determined by alcohol sales and purchases are presented.

4 Results

Identification of studies

The searches identified a total of 1,087 records: 1,051 from bibliographic database searches and a further 36 from scanning reference lists of retrieved articles, online searches of specialist websites and contact with experts in the field. A high proportion of the studies identified by the database searches were excluded as they did not meet our inclusion criteria described in the previous chapter, 14 were ordered for further consideration and a further 12 were excluded as they did not meet the inclusion criteria. A total of 15 separate surveys of the 36 found were identified as being eligible for inclusion. The flow of studies through the review selection process is shown in Appendix 2. The reasons for exclusion of the identified articles and studies are shown in Appendix 3, Tables A3.1 and A3.2.

Characteristics of included studies

Surveys reporting trends over time in drinking in adults

Study designs

Seven primary studies were found: the Continuous Household Survey (CHS) (Northern Ireland Statistics and Research Agency, 2007), the General Household Survey (GHS) (Goddard, 2006), the Health Education Population Survey (HEPS) (Gosling, 2005), the Health Survey for England (HSE) (National Statistics, 2006), the Welsh Health Survey (WHS) (Dolman *et al.*, 2007, 2008), the Omnibus Survey (Goddard, 2007a) and the Scottish Health Survey (SHS) (Bromley *et al.*, 2005, 2008). All were large, national, cross-sectional surveys repeated on a regular basis, every one, two or three years. Three additional studies, which reported on secondary analyses of data from one of the included surveys (the GHS) were identified (Catto, 2008; Kemm, 2003; Pattenden *et al.*, 2008).

Publication dates

The included surveys had publication dates between 2003 and 2008. One provided data current to 2007, three to 2006, two to 2005 and one to 2003.

Population

All seven studies reported data on adults classified as aged at least 16 years. Although three surveys also included children aged less than 16 years (HSE, SHS and WHS), data for trends in drinking in children was reported by HSE and SHS only. In all of the surveys, the population sampled were people living in private households. The population sampled included people in Great Britain in two surveys (GHS and Omnibus Survey), one in England (HSE), two in Scotland (SHS and HEPS), one in Wales (WHS) and one in Northern Ireland (CHS).

Further details of each survey are shown in Appendix 4, Table A4.1.

Surveys reporting trends over time in drinking in young people

Study designs

Six primary studies were found: smoking, drinking and drug use among young people in England (SDD) (Fuller, 2006, 2008), HSE (National Statistics, 2006), Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) (Maxwell *et al.*, 2006), SHS (Bromley *et al.*, 2005), Health Behaviour in School-aged Children (HBSC) (World Health Organization, www.hbsc.org/) and the European School Survey Project on Alcohol and other Drugs (ESPAD) (Hibell *et al.*, 2004). Four were large, national, cross-sectional surveys repeated on a regular basis every one, two or three years, and two were international studies that are conducted every three years (ESPAD and HBSC). One additional study reported a secondary analysis of data from two other surveys (Health

Behaviour in School-aged Children (HBSC) and the Young Persons' Behaviour and Attitudes Survey (YPBAS) (Health Promotion Agency for Northern Ireland and Irish Temperance League, 2005).

Publication dates

The surveys included had publication dates between 2003 and 2007. One provided data current to 2007, three to 2006 and three to 2003.

Population

Five of the studies were conducted specifically on schoolchildren (ESPAD, HBSC, HPA, SDD and SALSUS) and two included children who were selected as they were members of the families sampled in the general household surveys (SHS and HSE). The age range of the young people included in the studies varied: two studies included young people aged 11 to 15 years (HPA and SDD), one aged 11 to 16 years (HBSC), two aged 8 to 15 years (SHS and HSE), one aged 13 and 15 years (SALSUS) and one included young people who would have their 16th birthday in that year (ESPAD). One included young people in the UK (ESPAD), two in England (SDD and HSE), two in Scotland (SHS and SALSUS), one in England, Scotland and Wales (HBSC) and one in Northern Ireland (HPA).

Further details of each survey are shown in Appendix 4, Table A4.2.

Quality assessment – how reliable are the surveys for estimation of alcohol consumption?

While the surveys are large national studies that have been designed, conducted and analysed to a high standard, interpretation of the results should take into account some important limitations that may lead to underestimation in alcohol consumption. These limitations have been discussed fully in a report by the Office for National Statistics (Goddard, 2001) and are summarised below.

Representativeness of the survey samples

The surveys of adults are of people living in private households and, therefore, exclude those living in institutions, students and the homeless – groups

that may contain a higher than average proportion of heavy drinkers.

There is under-representation of young single adults in the surveys – a group for which alcohol consumption is higher than the average. Heavy drinkers may not be fully represented as they may be more difficult to contact than others and more likely to be in the group of people who did not participate in the survey (non-responders) or did not fill in the answers to the drinking questions. There has been some indication that response bias has potentially increased over time because of declining response rates for many of the larger national surveys (Catto, 2008).

Ascertainment of drinking outcomes

People tend to underestimate the amount they drink for a number of reasons. Sometimes this is deliberate because of guilt and embarrassment about reporting actual amounts drunk, or it may be done unintentionally because they have forgotten how much they have actually drunk on a particular occasion, especially if they drank too much. It may also be because of a subconscious desire to underestimate – rather than overestimate – the amount drunk. This so-called social desirability phenomenon is commonly seen in reporting of cigarette smoking and food surveys. The surveys on adults used face-to-face interviews to ascertain information on drinking, which may have increased the tendency to under-report in comparison with the use of self-completed questionnaires with younger age groups.

Reliable estimates of reporting the amount drunk is dependent, in part, on accurately estimating volumes from glass sizes available at home. These are non-standardised and quite likely larger than those available in licensed establishments. Drinks have also become available in a variety of sizes; containers are variable in size and also glass size has increased. Surveys do not always take this into account.

Conversion of different quantities of drink into equivalent standard units of alcohol is based on assumptions about the strengths of the various drinks. However, different drinks vary in the amount of pure alcohol contained in them. Some surveys (GHS, HSE) have attempted to control for variable strength by specifically asking

questions about strong beers and a pint of strong beer is counted as three units instead of the usual two. In the most recent surveys, there has been a change in the way a unit of alcohol is calculated to account for variable glass size. For the GHS and Omnibus Survey a glass of wine is counted as two units instead of one unit for data collected in 2006 (Goddard, 2007b). The change in method doubles the units of wine consumed and increases the units of strong beers by one-third and normal beers by 12 per cent. It should be noted that changing the way alcohol consumption is estimated does not in itself reflect a real change in drinking in the adult population. The data collected for 2007 for SDD has also changed the method for unit calculation, so that it is in line with GHS and HSE, and data for SHS for 2003 has recently been recalculated taking this into account also. Data is presented for both original and revised methods where applicable throughout the report. It has been suggested that these national surveys have been increasingly underestimating alcohol consumption for several years, since the difference between alcohol sales values and alcohol consumption values has diverged in the last decade (Catto, 2008).

To ascertain drinking on outcomes, two methods are commonly employed: a retrospective seven-day drinking diary and the quantity–frequency approach. The seven-day drinking diary takes into account variation from day to day but not for a period longer than a week. Detailed questions ask about alcohol consumption and type of drink, and patterns of drinking. This is a common method used in surveys dedicated to drinking behaviour, though the method is generally too detailed and time-consuming to be used for regular monitoring in large samples of the general population. The quantity–frequency method provides a measure that averages out consumption over a longer period of time such that people are classified into broad categories based on how much they drink. It is retrospective and may cover a period as long as a year. It tends to be used in surveys that have drinking as a component but not the primary focus. The method used is to multiply the number of units of each type of drink consumed on a usual drinking day by the frequency to calculate an individual's average weekly consumption. A comparison of both

methods used in a 1989 survey produced very similar results (Goddard, 1991).

A retrospective seven-day diary enables daily consumption to be measured. The quantity–frequency method on the other hand does not lend itself to collection of information about daily drinking, but a daily amount can be estimated by averaging out either over all days in the week or per drinking day if the usual frequency is known. The quantity–frequency method may be misleading, especially in younger people where drinking is less likely to be evenly spread out and more likely to be concentrated into two or three heavy drinking days with less consumption on other days.

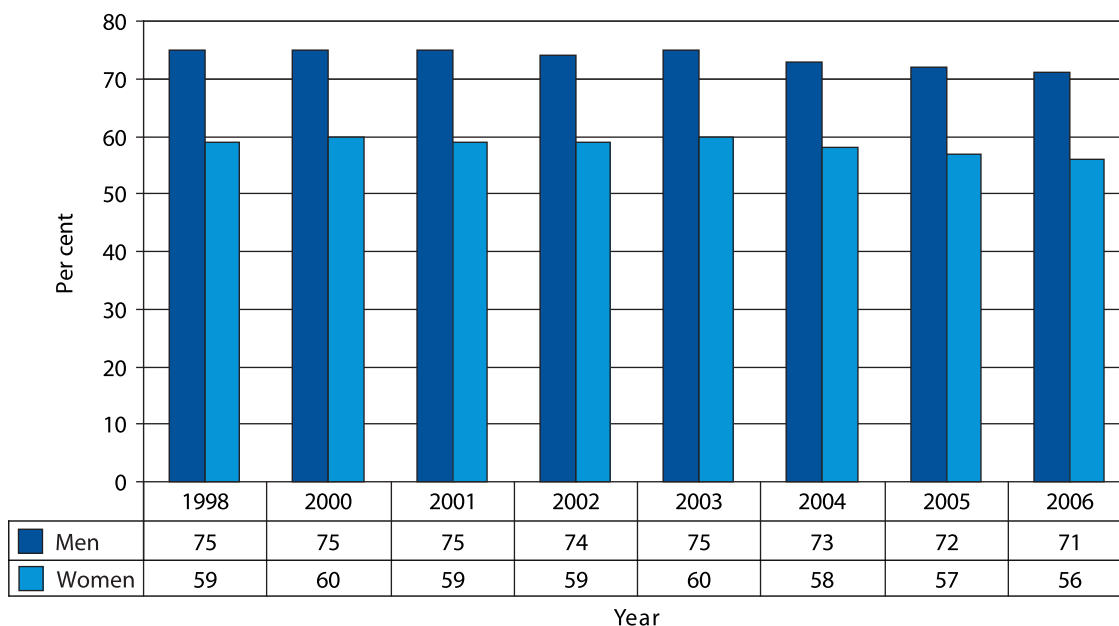
A simple question asking whether someone drinks alcohol may elicit a higher proportion who answer no than more detailed questions about very occasional use or drinks such as coolers and cider that some people may be unaware contain alcohol. Identifying non-drinkers was elicited using different questions in the surveys, so comparison across surveys is hampered by the different definitions used.

Sample sizes and sampling error

As the data in this report is based on a sample of the population, the estimates are subject to sampling error. Sampling error indicates the amount by which the value of a sample estimate can be expected to differ from the true value in the population. As the surveys use a multi-stage sample design that involves clustering and stratification, this is taken into account when standard errors for the estimates are calculated. Sample errors for all of the trends described in this report are not reported, as they were not given in the original study reports. Typical 95 per cent confidence intervals derived from standard errors for a range of proportions for different sample sizes are shown in Appendix 5, Table A5.1.

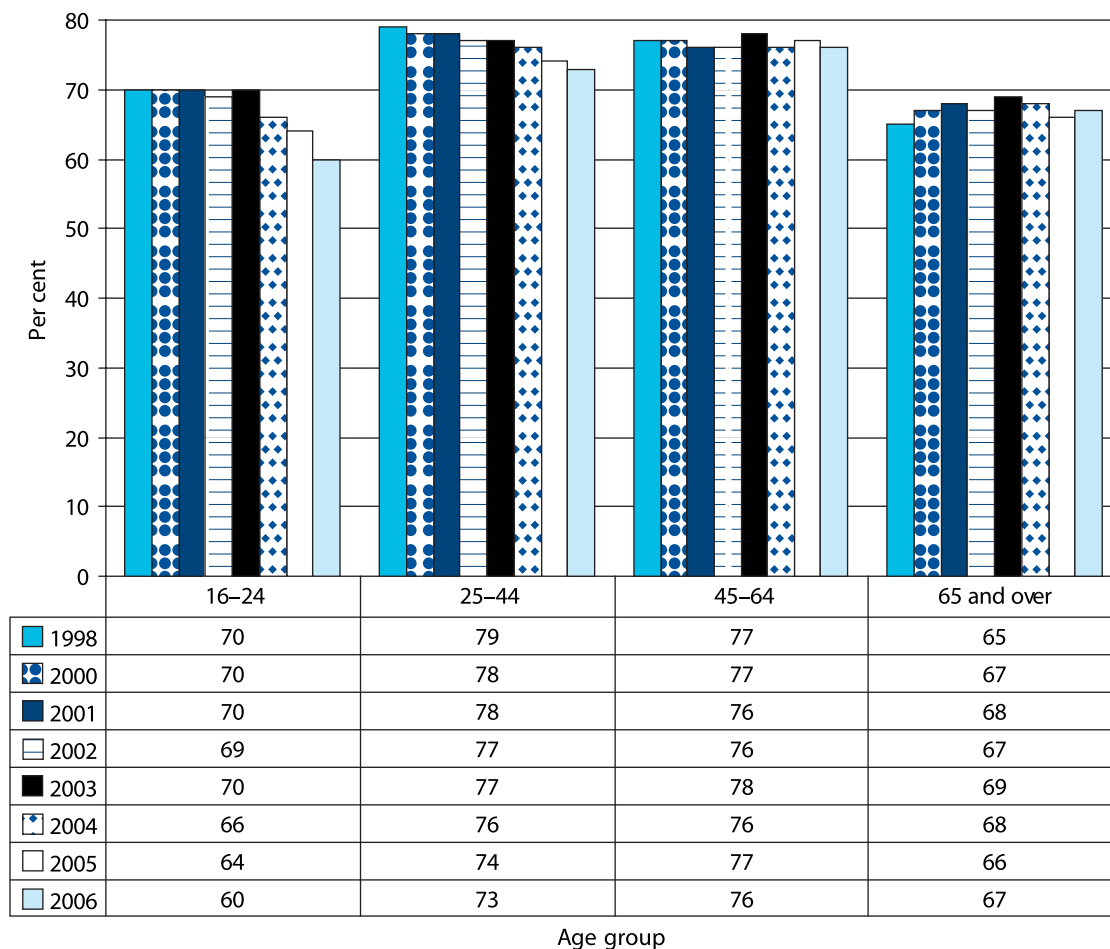
Two of the surveys (Omnibus Survey and HEPS) were small, with overall sample sizes around 1,000 and 2,000, respectively, so cautious interpretation of trend estimates from these surveys is recommended. The estimates for children in the SHS are also based on a small sample size. Small fluctuations in estimates from one year to another could be due to factors other than changes in consumption. It should also

Figure 3: Proportion of men and women in Great Britain drinking on at least one day in the last week



2005 data includes data from the last quarter 2004–05 due to survey change from financial to calendar year, 2006 includes longitudinal data (GHS, 2006). Two-year time period between 1998 and 2000 is not the same as time period between other years. Source: GHS, 2006 (Goddard, 2006).

Figure 4: Proportion of men in Great Britain drinking on at least one day in the last week, by age group



2005 data includes last quarter 2004–05 due to survey change from financial to calendar year, 2006 includes some longitudinal data (GHS, 2006). Two-year time period between 1998 and 2000 is not the same as time period between other years. Source: GHS, 2006 (Goddard, 2006).

be noted that sample sizes for regional data in England are small and some fluctuation in results from year to year is to be expected.

The GHS adopted a longitudinal design from 2005 where households remain in the sample for four successive waves with one-quarter of the sample replaced each year. This decreases the variability in the estimates and will increase the ability to detect statistically significant trends over time in future years.

Trends in drinking in adults

Prevalence of drinking

Great Britain

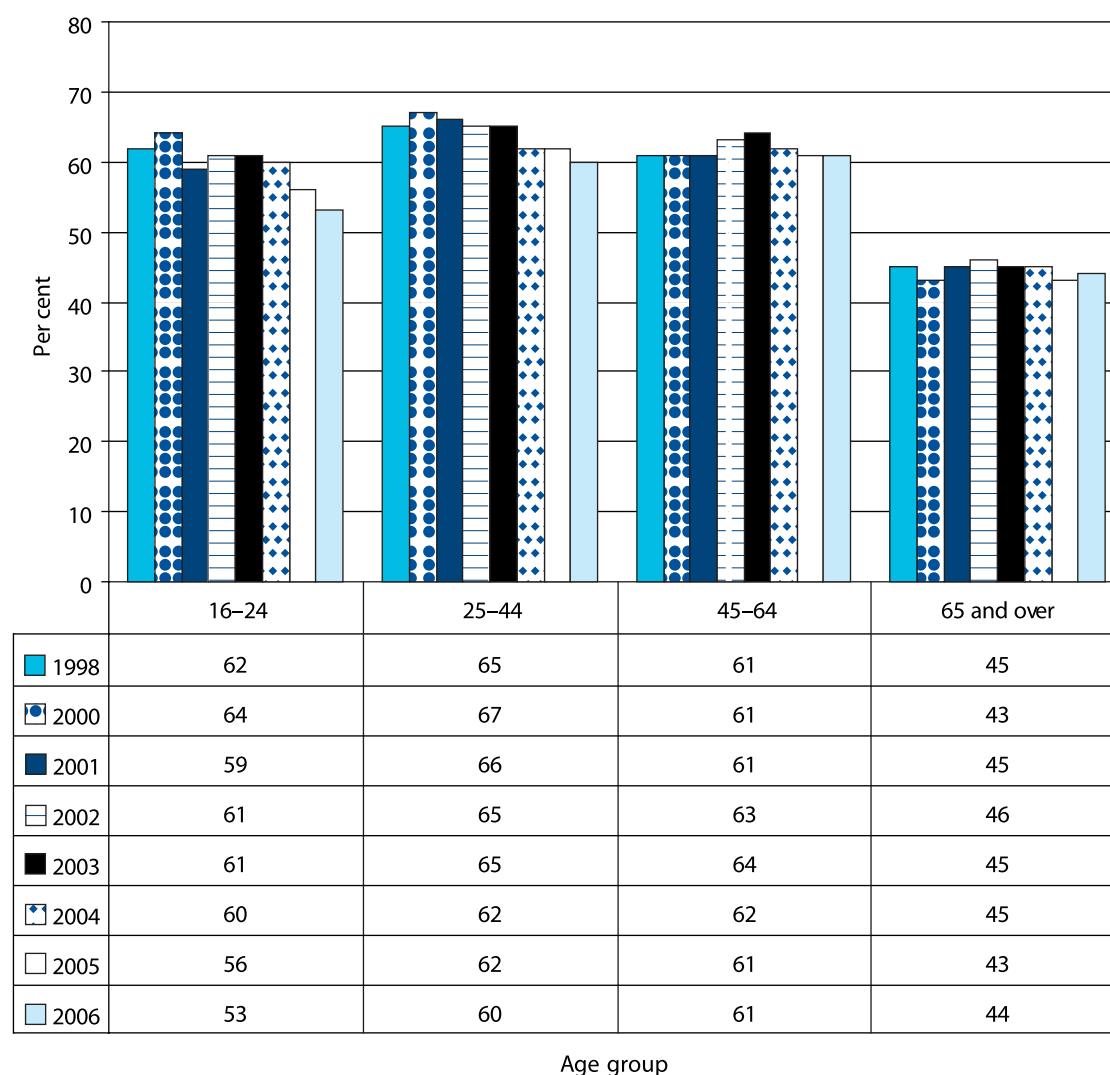
Data for Great Britain is provided by the GHS (Goddard, 2006) and the ONS Omnibus Survey

(Goddard, 2007a). The studies reported the prevalence of people drinking in different ways. The GHS reported the prevalence of drinking in the last week, whereas the Omnibus Survey reported the prevalence of non-drinking.

In the GHS (Goddard, 2006), the proportion of adults drinking on at least one day in the previous week has decreased from 75 per cent in 1998 to 71 per cent in 2006 in men and from 59 to 56 per cent in women over the same time period (see Figure 3).

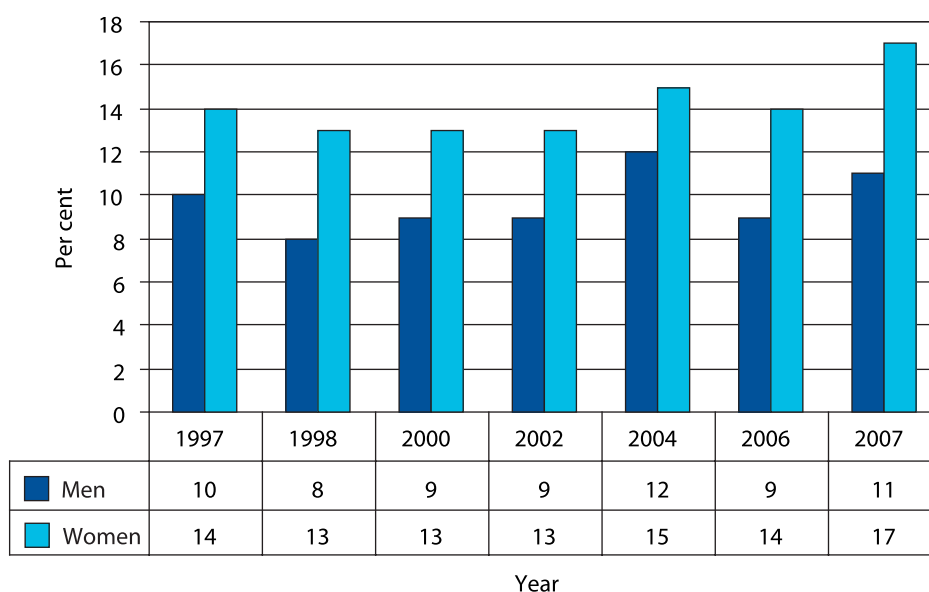
The decline occurred in both men and women mainly in the younger age groups. Among young men aged 16 to 24 years, the proportion drinking in the last week fell from 70 to 60 per cent and, in men aged 25 to 44 years, from 79 to 73 per cent. Similarly, in young women aged 16 to 24 years, the proportion fell from 62 to 53 per cent

Figure 5: Proportion of women in Great Britain drinking on at least one day in the last week



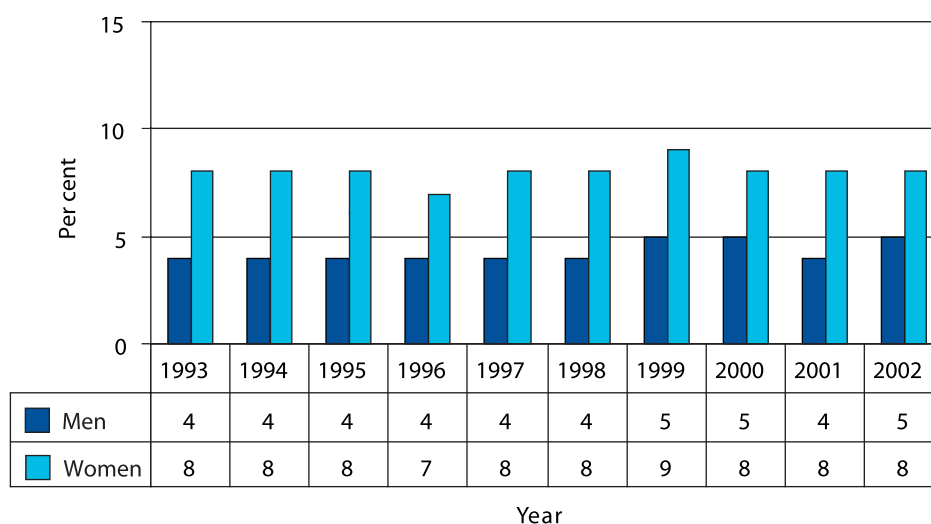
2005 data includes last quarter 2004-05 due to survey change from financial to calendar year, 2006 includes some longitudinal data (GHS, 2006). Two-year time period between 1998 and 2000 is not the same as the time period between other years. Source: GHS, 2006 (Goddard, 2006).

Figure 6: Proportion of men and women in Great Britain who are non-drinkers, 1997 to 2007



One-year time period between 1997 and 1998 is not the same as the time period between other years.
 Source: Omnibus Survey, 2007 (Goddard, 2007a).

Figure 7: Proportion of men and women in England who are never drinkers, 1993 to 2002



Source: HSE, 2006 (National Statistics, 2006).

and, in women aged 25 to 44 years, from 65 to 60 per cent. Very little change occurred in men and women over the age of 45 years (see Figures 4 and 5).

In the Omnibus Survey (Goddard, 2007a), the proportion of men and women reporting that they are non-drinkers has slightly increased from 1997 to 2007 with the increase being greater in women (14 to 17 per cent) than in men (10 to 11 per cent) – see Figure 6. One possible explanation for this increase is the corresponding decrease in the proportion of people drinking on at least one day in the last week as shown in the GHS, 2006.

England

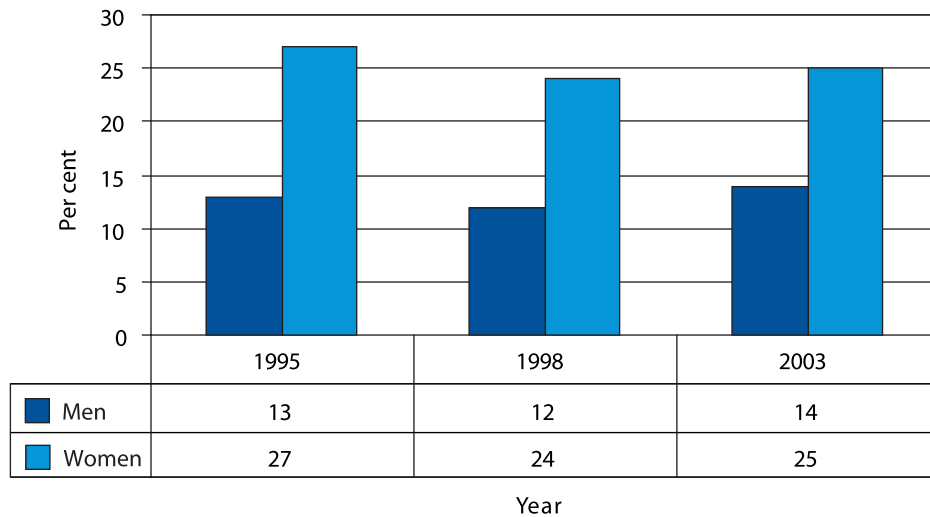
Data for England is provided by the HSE (National Statistics, 2006). The proportion of men and women reporting that they never drink has changed little from 1993 to 2002 in England. There has been a slight increase in the proportion of men never drinking, from 4 to 5 per cent, with no net change in women (8 per cent) – see Figure 7. The proportions are lower than those reported by the Omnibus Survey and likely reflect the difference in the style of the question.

Scotland

Data for Scotland is provided by the SHS (Bromley *et al.*, 2005). From 1995 to 2003 the trends in the proportion of non-drinkers, defined as drinking less than one unit of alcohol a week or not drinking at all, show a slight increase in men, from 13 to 14 per cent, and a small decrease in women, from 27 to 25 per cent (see Figure 8).

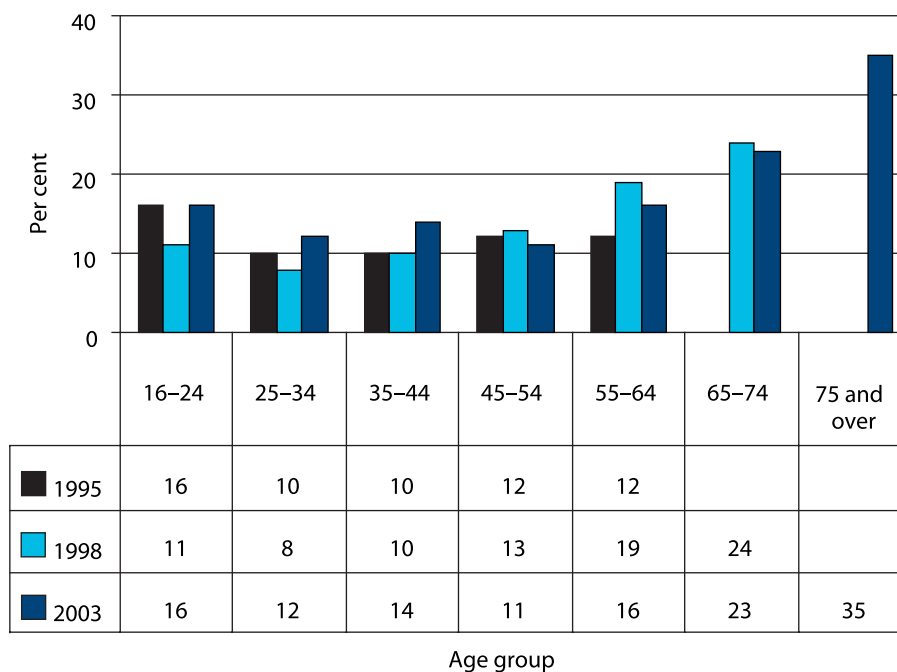
In men aged 25 to 34, 35 to 44 and 55 to 64 years, there was a slight increase in the proportion who were non-drinkers, with no change or a slight decrease in men aged 16 to 24 and 45 to 54 years, respectively. There was insufficient data to detect trends in older age groups (see Figure 9). In women, the opposite trend was observed, with a small decrease in the proportions who were

Figure 8: Proportion of men and women in Scotland drinking under one unit of alcohol a week or not drinking, 1995 to 2003



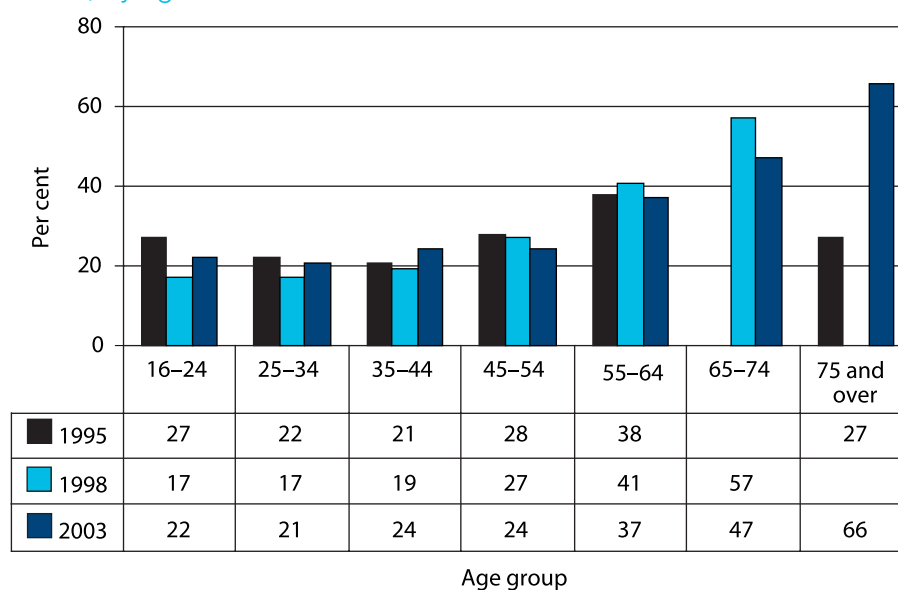
Source: SHS, 2003 (Bromley *et al.*, 2005).

Figure 9: Trends in the proportion of men in Scotland drinking under one unit of alcohol a week or not drinking, 1995 to 2003, by age



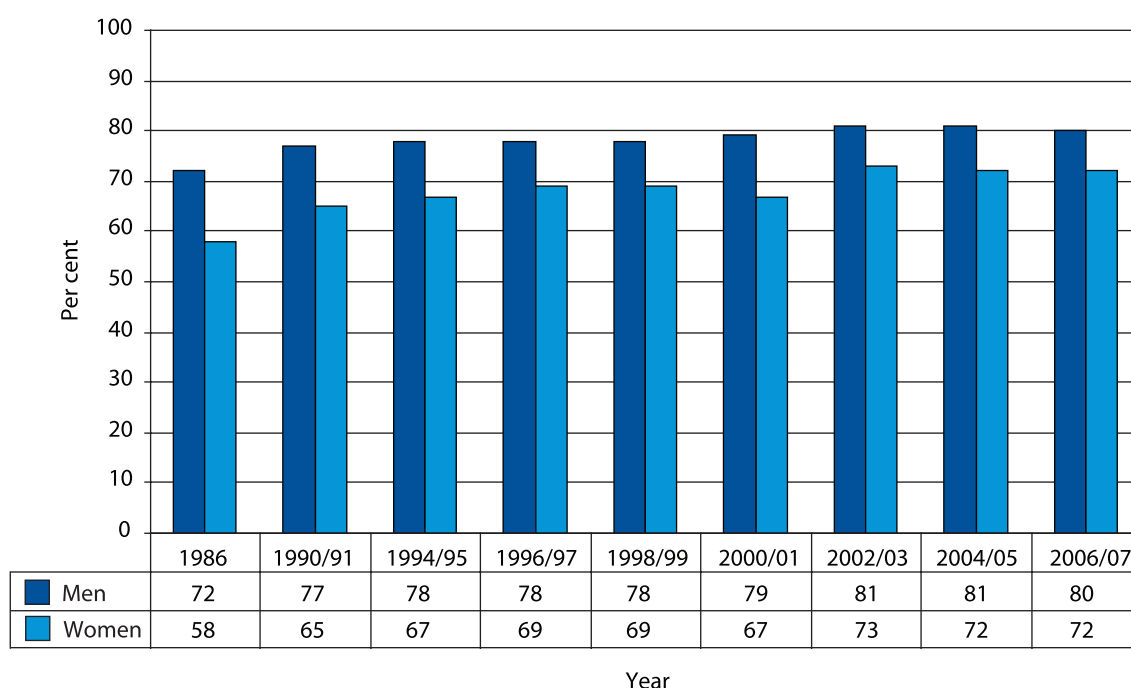
Source: SHS, 2003 (Bromley *et al.*, 2005).

Figure 10: Trends in the proportion of women in Scotland drinking under one unit of alcohol a week or not drinking, 1995 to 2003, by age



Source: SHS, 2003 (Bromley *et al.*, 2005).

Figure 11: Prevalence of drinking in men and women in Northern Ireland, 1986 to 2007



Source: CHS, 2007 (Northern Ireland Statistics and Research Agency, 2006).

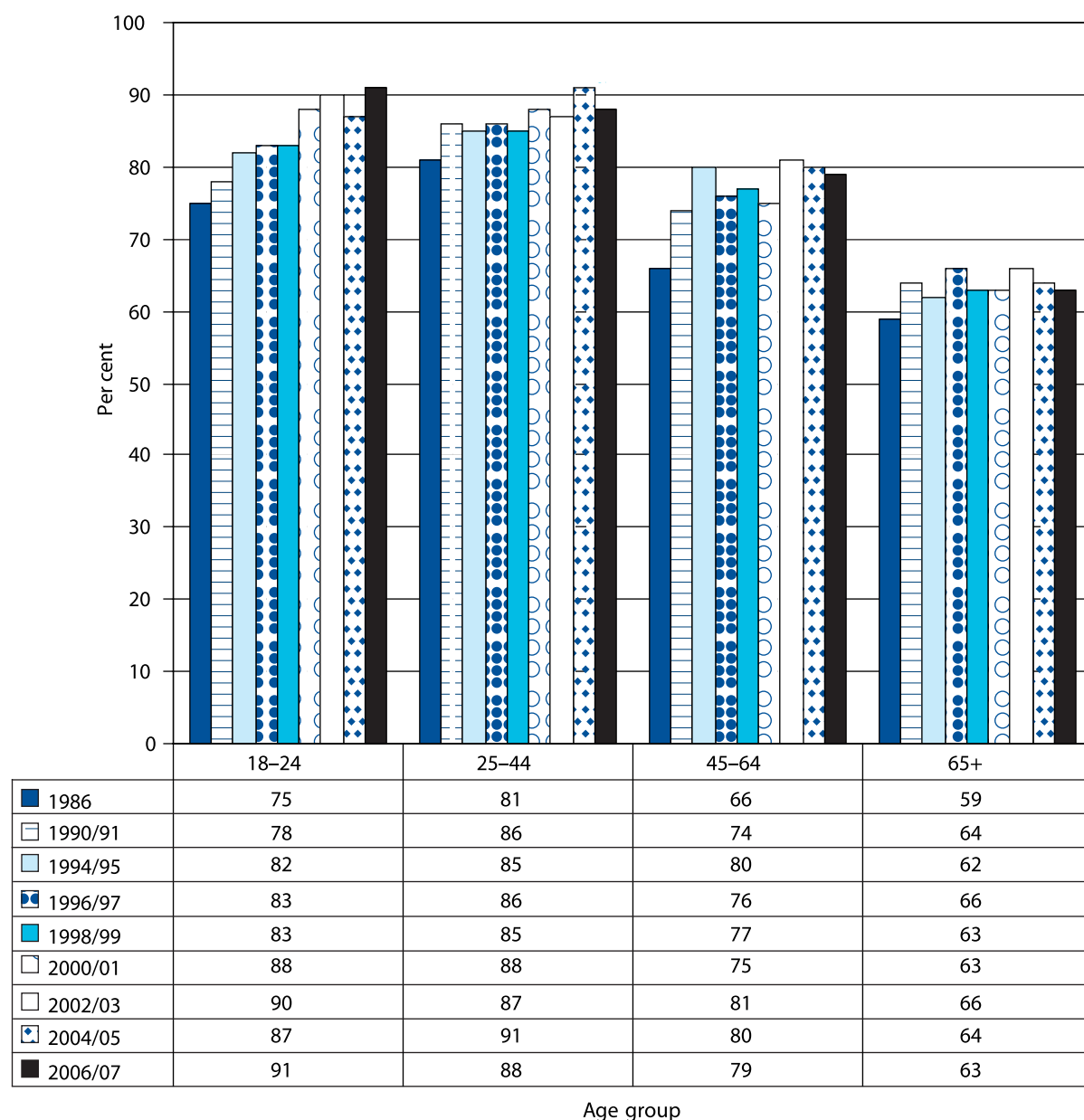
non-drinkers aged 16 to 24, 25 to 34, 45 to 54 and 55 to 64 years. As with men, there was insufficient data for the older age groups (see Figure 10).

Northern Ireland

Data for Northern Ireland is provided by the CHS (Northern Ireland Statistics and Research Agency,

2006). From 1986 to 2007, prevalence of 'ever drinking alcohol nowadays' markedly increased in men and women. In men, the prevalence increased from 72 per cent in 1986 to 80 per cent in 2006 and, in women, the increase was greater, rising from 58 per cent to 72 per cent (see Figure 11).

Figure 12: Prevalence of drinking in men in Northern Ireland, 1986 to 2007, by age



Source: CHS, 2007 (Northern Ireland Statistics and Research Agency, 2006).

The increase occurred in all age groups for men and women. The age groups with the greatest increase were the 18 to 24 and 45 to 64 year olds. Among men aged 18 to 24 years, the prevalence of drinking rose from 75 to 91 per cent and, in men aged 45 to 64 years; from 66 to 79 per cent (see Figure 12). Similarly, in women aged 18 to 24 years, the prevalence rose from 67 to 86 per cent and, in women aged 45 to 64 years, from 50 to 75 per cent (Figure 13).

Taken together, these data suggest that the prevalence of drinking has decreased over the last decade in Great Britain as a whole, with greater

change observed in younger adults. In contrast, there was a notable increase in the prevalence of drinking in Northern Ireland in the last two decades in both men and women, and across all adult age groups, but especially in the younger adults and 45- to 64-year-old women. For England and Scotland there was little change observed, but data for fewer time points was available, and is only current to 2002 for England and 2003 for Scotland. The different definitions used for classifying adults as drinkers or non-drinkers varied between surveys, which may have contributed to the inconsistency in the trends.

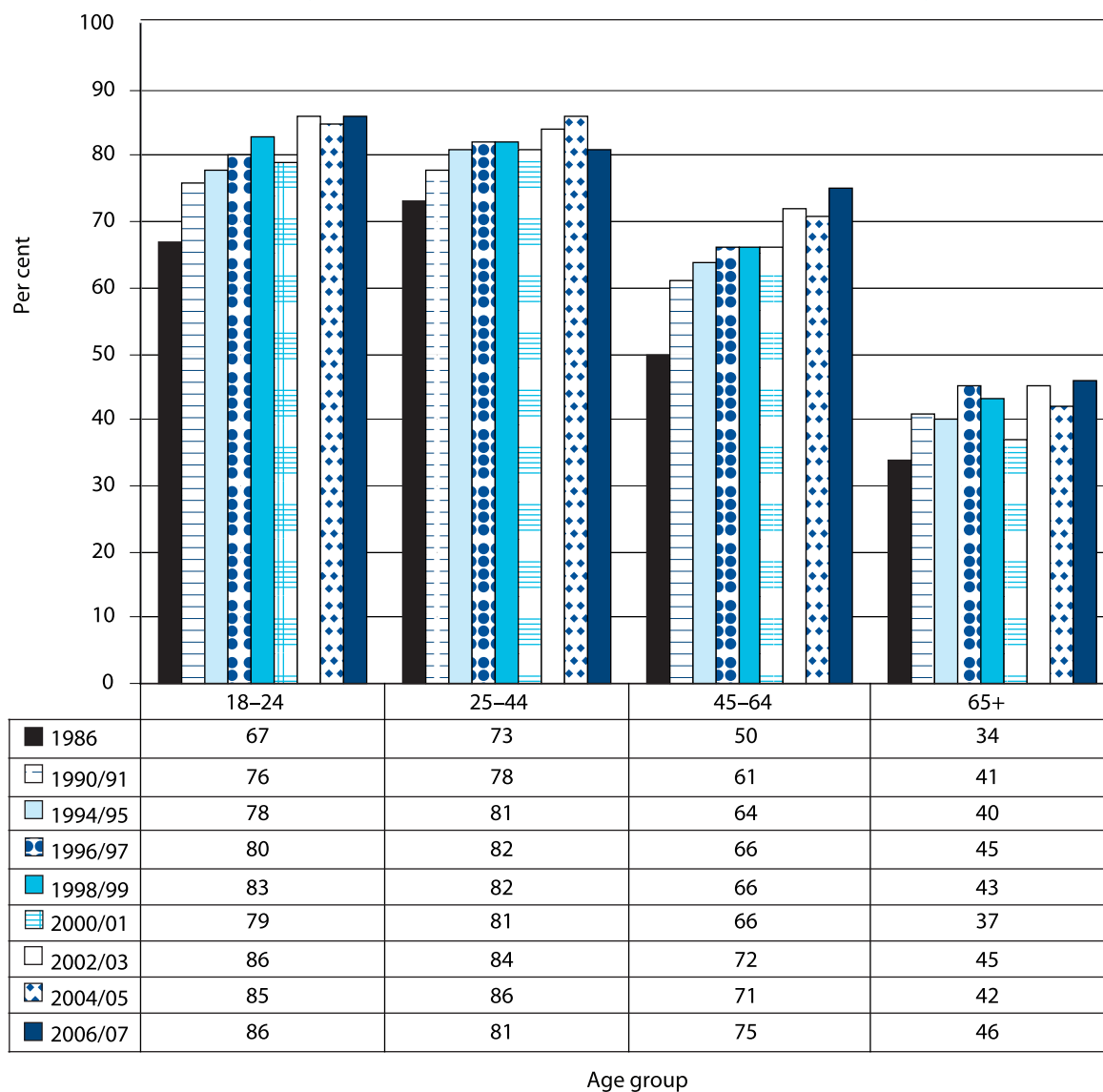
Average weekly units of alcohol

Great Britain

The GHS and Omnibus Survey provide data on trends in mean units of alcohol consumed per week (Goddard, 2006, 2007a). Interpretation of the results from the two surveys for 2006 is complicated by the recent change in the survey methods relating to how alcohol consumption is estimated (Appendix 4, Table A4.1). For the GHS, the introduction of weighting in 1998 further complicates interpretation of the results. As a result of the change in weighting, the proportion of men drinking more than 21 units a week was increased by one percentage point, though comparison of weighted and unweighted data for subsequent years was little different.

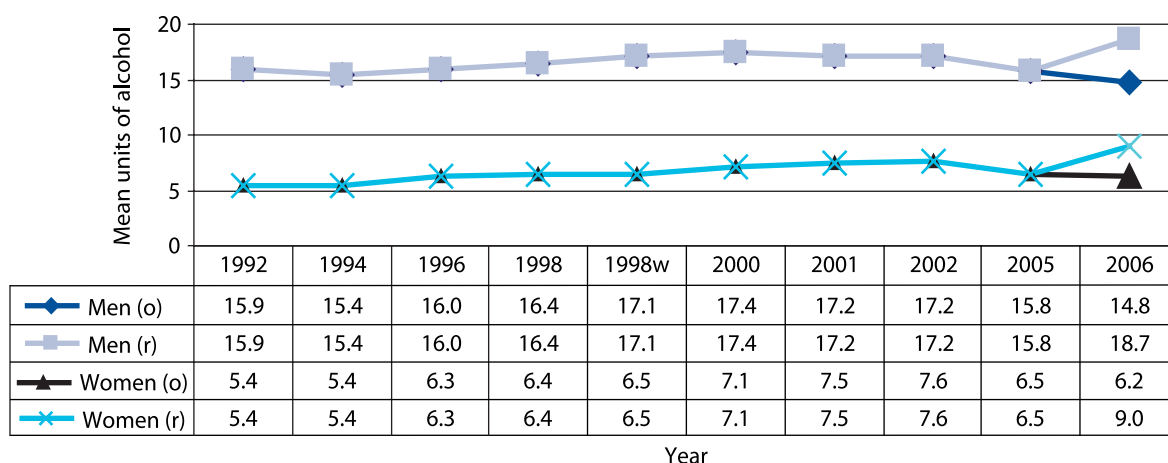
During the 1990s there was a slight increase in weekly alcohol consumption, the increase being greater in women than men. Following the introduction of weighting in 1998, there were further increases in both men and women until 2002 when weekly consumption showed a decline until 2006. This is based on the original method of estimating units of alcohol. The introduction of improved methods to estimate units reverses the downward trend seen for the last few years. This abrupt change probably reflects changes that occurred over several years that were masked by underestimation of actual units consumed because of gradual increases in wine drinking, alcohol content of wine and average glass size. In 1998, men drank an average of 17.1 units a week, which rose to 18.7 in 2006. In women, the increase is

Figure 13: Prevalence of drinking in women in Northern Ireland, 1986 to 2007, by age



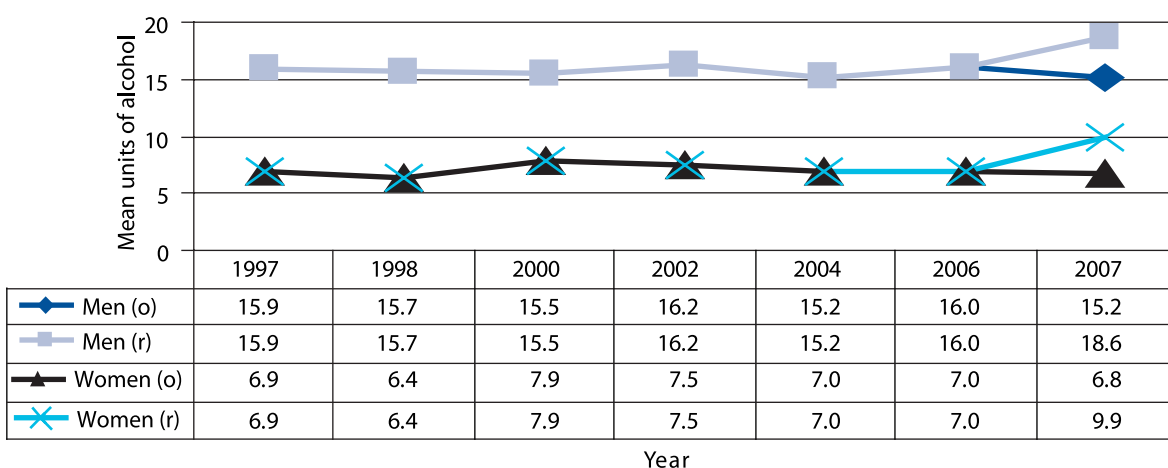
Source: CHS, 2007 (Northern Ireland Statistics and Research Agency, 2006).

Figure 14: Mean alcohol consumption (units) in the last week in Great Britain, 1992 to 2006, by gender



w = weighted; o = original method of calculating alcohol units; r = revised method of calculating alcohol units.
Source: GHS, 2006 (Goddard, 2006).

Figure 15: Mean alcohol consumption (units) in the last week in Great Britain, 1997 to 2007, by gender



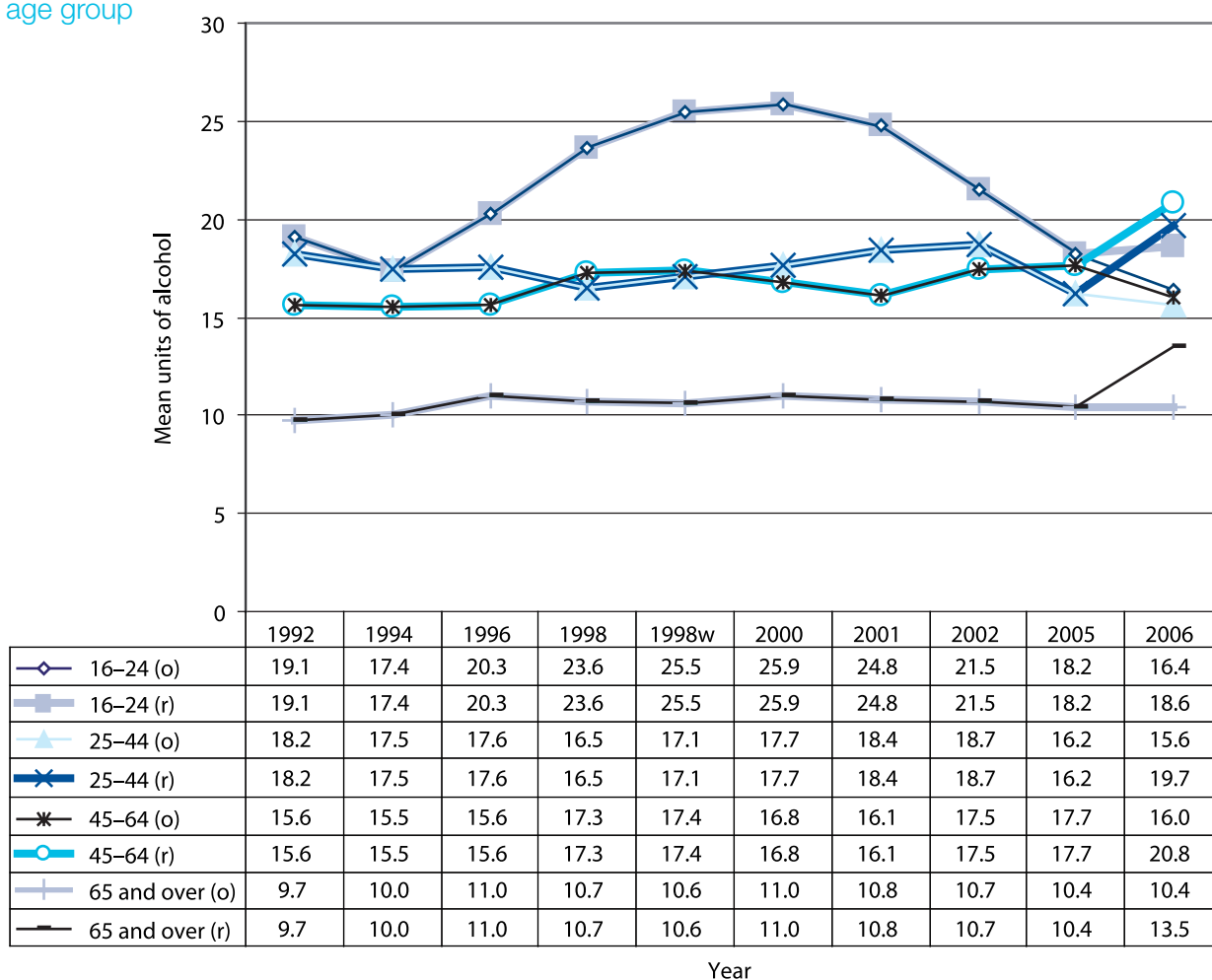
o = original method of calculating alcohol units; r = revised method of calculating alcohol units.
Source: Omnibus Survey, 2007 (Goddard, 2007a).

more striking, with average consumption rising from 6.5 units a week to nine units a week based on the improved method. This is in contrast with an apparent decline in 2006 if the estimates from original methods are used (see Figure 14).

The results in the GHS are broadly similar to those of the Omnibus Survey. The Omnibus Survey data shows that, in men, there has been little change in mean units consumed, from 15.9 in 1997 to 15.2 in 2007 based on the original method, with a step increase to 18.6 units per week in 2007 based on the improved method. In women, the pattern was the same as for men with an overall increase from 6.9 to 9.9 units from 1997 to 2007 based on the improved method (see Figure 15).

When the results are considered for the different age groups, the pattern of change in men and women is different (Goddard, 2006). In young men aged 16 to 24 years, average consumption increased from 1992 to reach a peak in 2000 and then declined based on both original and improved methods. For all other age groups, there was a small increase in the amount consumed (see Figure 16). In women, an increase in mean units consumed was observed for all age groups, though for young women aged 16 to 24 years the average consumption in 2006 is lower than what appears to be a peak in 2000 to 2002 in common with young men (see Figure 17).

Figure 16: Mean alcohol consumption (units) in the last week in men in Great Britain, 1992 to 2006, by age group



w = weighted; o = original method of calculating alcohol units; r = revised method of calculating alcohol units.
 Source: GHS, 2006 (Goddard, 2006).

England

The HSE provides data on trends in mean units of alcohol consumed per week for England from 1993 to 2002 (National Statistics, 2006). The pattern in men and women is very similar to the trends shown for the GHS and Omnibus Survey for the same period of time with little overall change (see Figure 18).

Age standardised mean weekly alcohol consumption in men by region is shown in Figure 19. Trends from 1994 to 2002 show little change in units consumed in the East, London and the South East with small increases in the North West, Yorkshire, the East Midlands and the South West, with a small decrease in the North East. In women, consumption increased in all regions apart from London (see Figure 20).

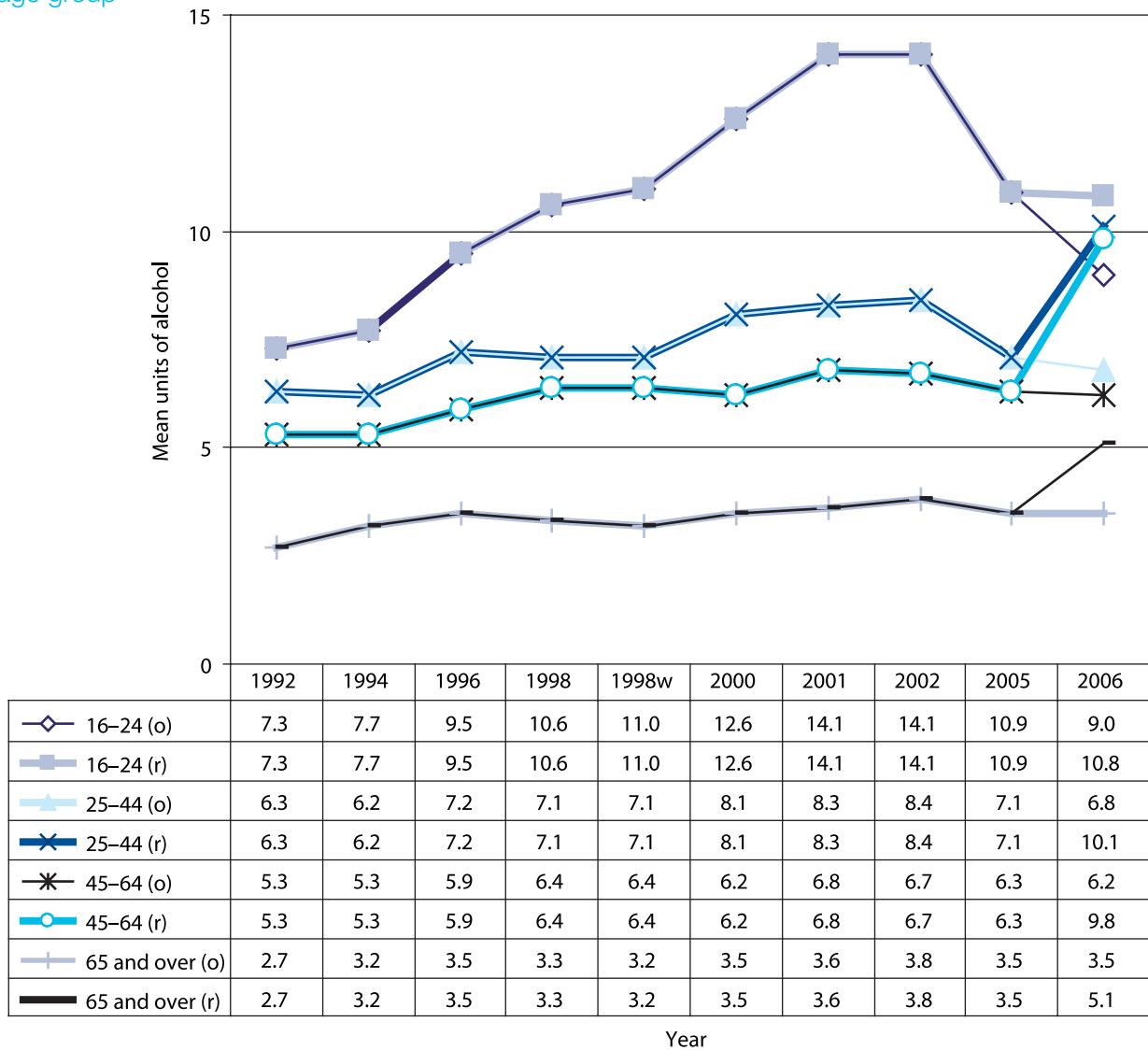
Scotland

The SHS provides data on trends in mean units of alcohol consumed per week for Scotland

from 1995 to 2003 (Bromley *et al.*, 2005, 2008). Based on the original method of unit calculation, in men, there was a reduction in the mean units of alcohol consumed, from 20.1 in 1995 to 18.2 in 2003; however, a slight increase to 20.3 units is found if estimates using the revised methods of unit calculation are used. In women, the reverse trend is shown with a slight increase from 6.3 to 7.6 or 9.1 units for original and revised methods, respectively (see Figure 21).

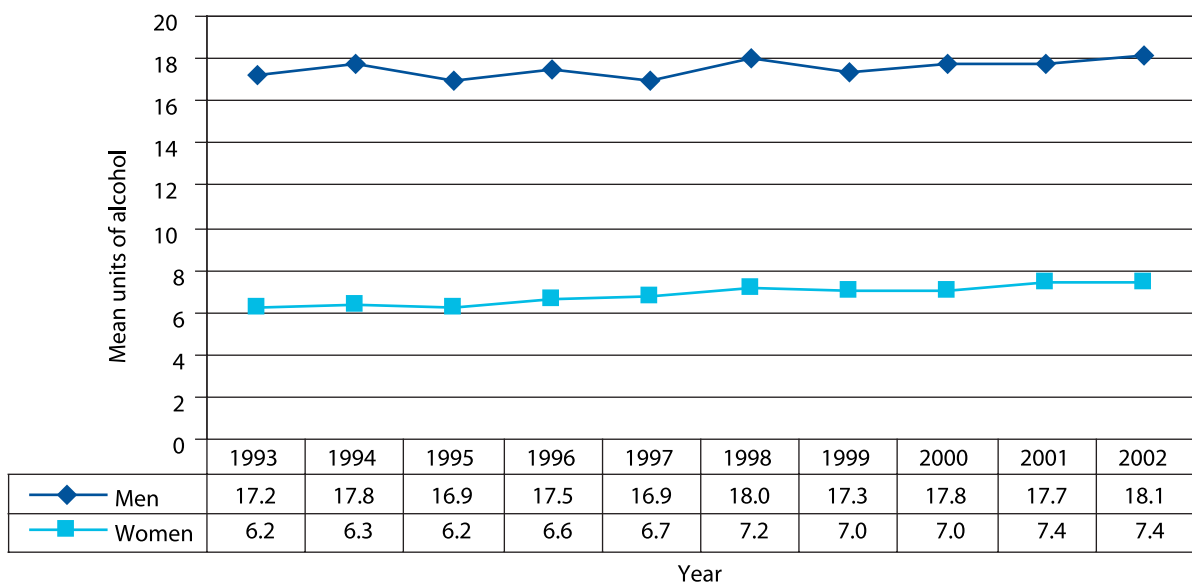
When the results are considered for the different age groups, the pattern of change in men and women is different. In men, the decline is greatest in those aged 16 to 24 and 25 to 34 years. For all other age groups, there was either a small increase or little change (see Figure 22). In women, small increases are observed for all age groups (see Figure 23). These trends are observed whether using original or revised methods of unit calculation.

Figure 17: Mean alcohol consumption (units) in the last week in women in Great Britain, 1992 to 2006, by age group



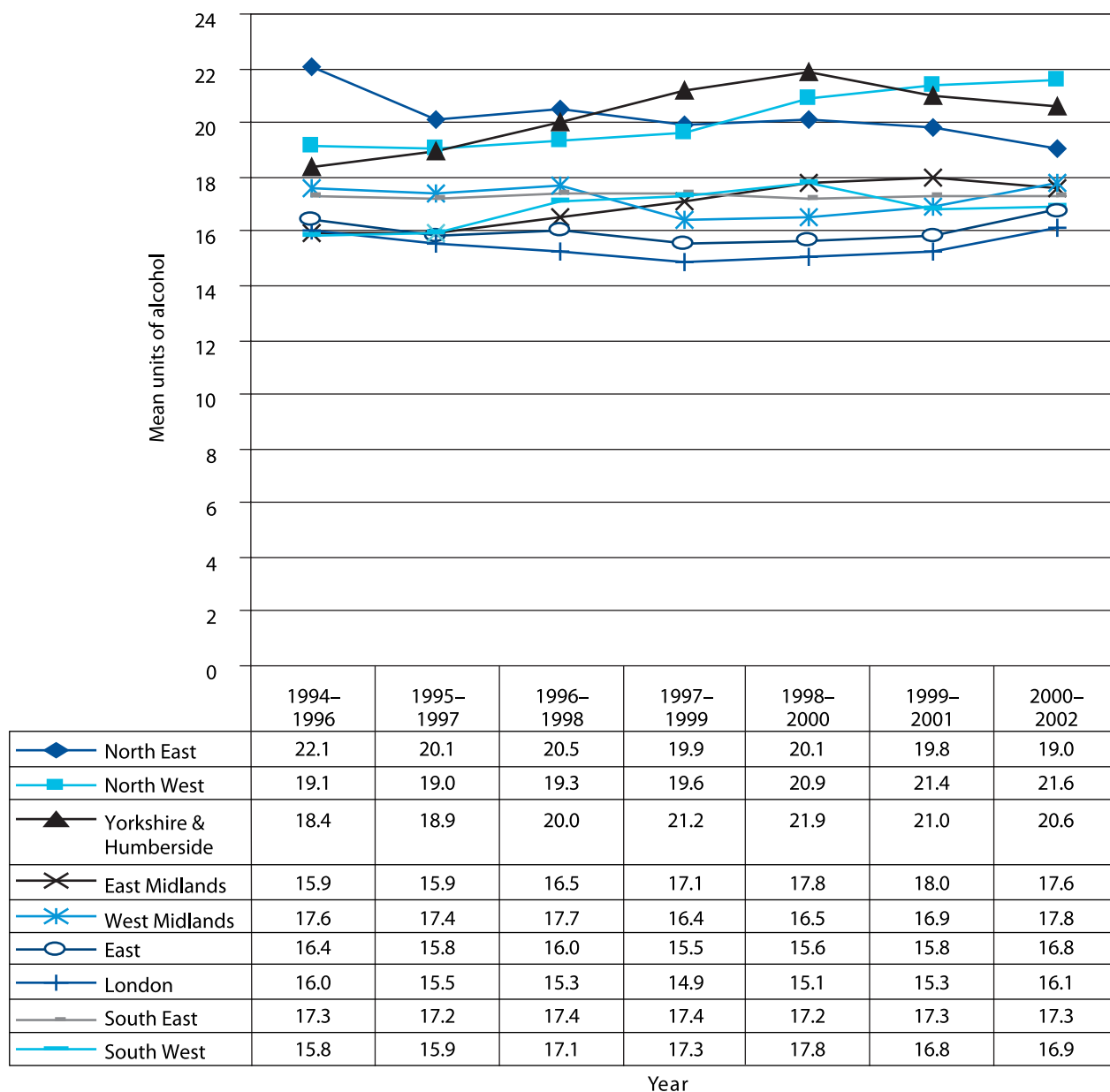
w = weighted; o = original method of calculating alcohol units; r = revised method of calculating alcohol units.
Source: GHS, 2006 (Goddard, 2006).

Figure 18: Mean alcohol consumption (units) in the last week in England, 1993 to 2002, by gender



Source: HSE, 2006 (National Statistics, 2006).

Figure 19: Age standardised mean alcohol consumption (units) per week among men in England, 1994 to 2002 (three-year moving average), by geographic region



Source: HSE, 2006 (National Statistics, 2006).

Overall, there has been an increase in average weekly consumption for both men and women since 1992 in Great Britain. This overall trend masks some interesting age and gender differences. Even after taking revised methods for unit calculation into consideration in 2006, average consumption among 16- to 24-year-old men has fallen in recent years following a pronounced peak around 1998 to 2000. While in all other male adult age groups there has been a general overall increase, in women the increase is more marked, particularly for age groups 16 to 24, 25 to 44 and 45 to 64 years old based on revised estimates for 2006.

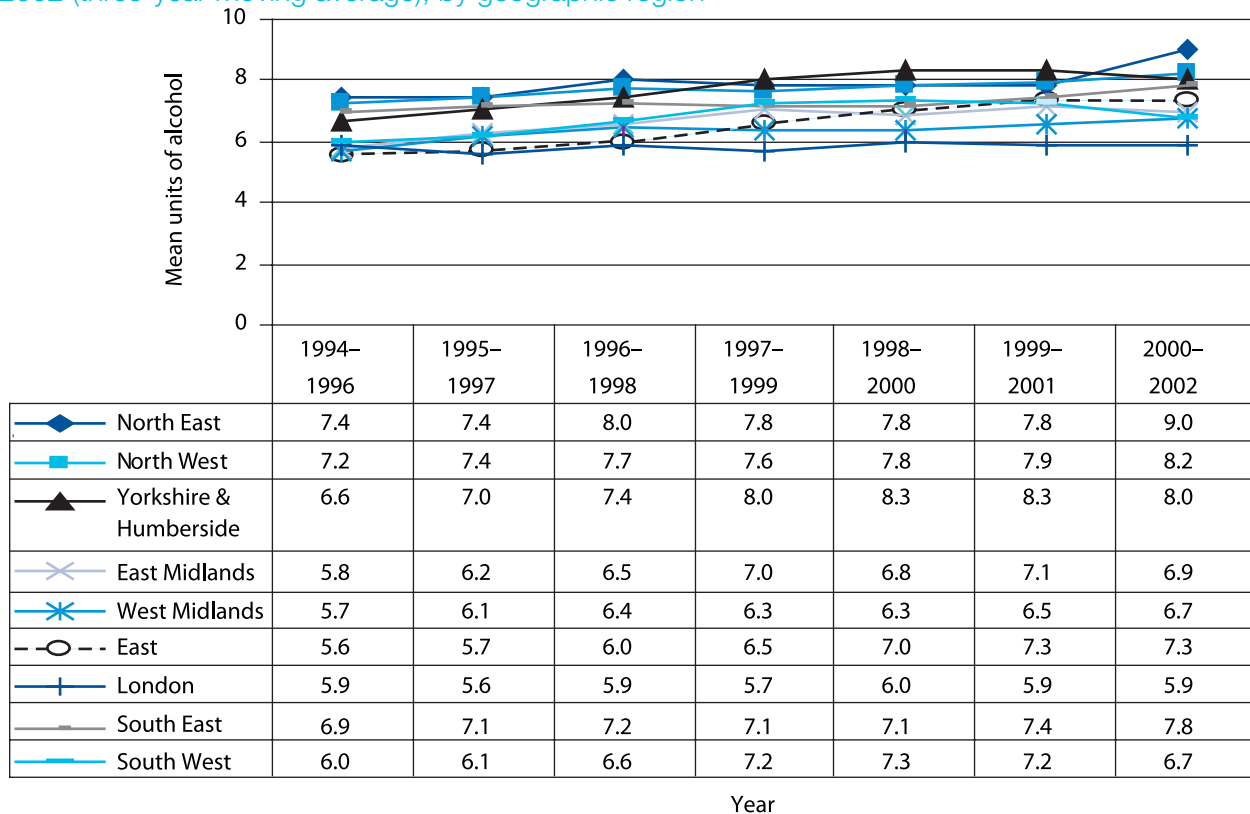
Data for England and Scotland current to 2003 is also in broad agreement, with the trends observed for Great Britain as a whole showing that average consumption has increased in women of all ages, and men 35 years and older. Consumption in men aged 16 to 24 and 25 to 34 years has either slightly decreased or shown little change.

Proportion of people exceeding recommended weekly limits

Great Britain

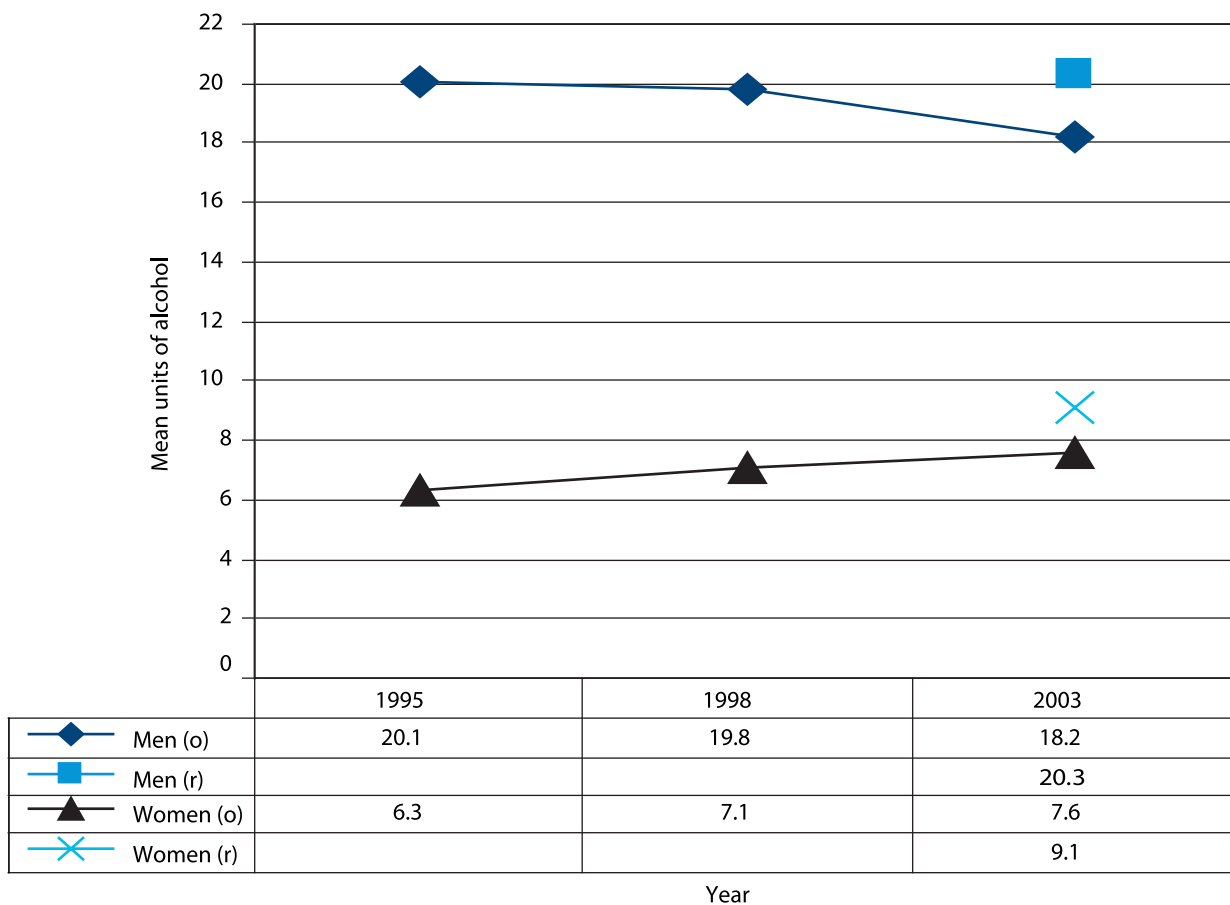
The GHS and Omnibus Survey provide data on trends in exceeding recommended weekly limits

Figure 20: Age standardised mean alcohol consumption (units) per week among women in England, 1994 to 2002 (three-year moving average), by geographic region



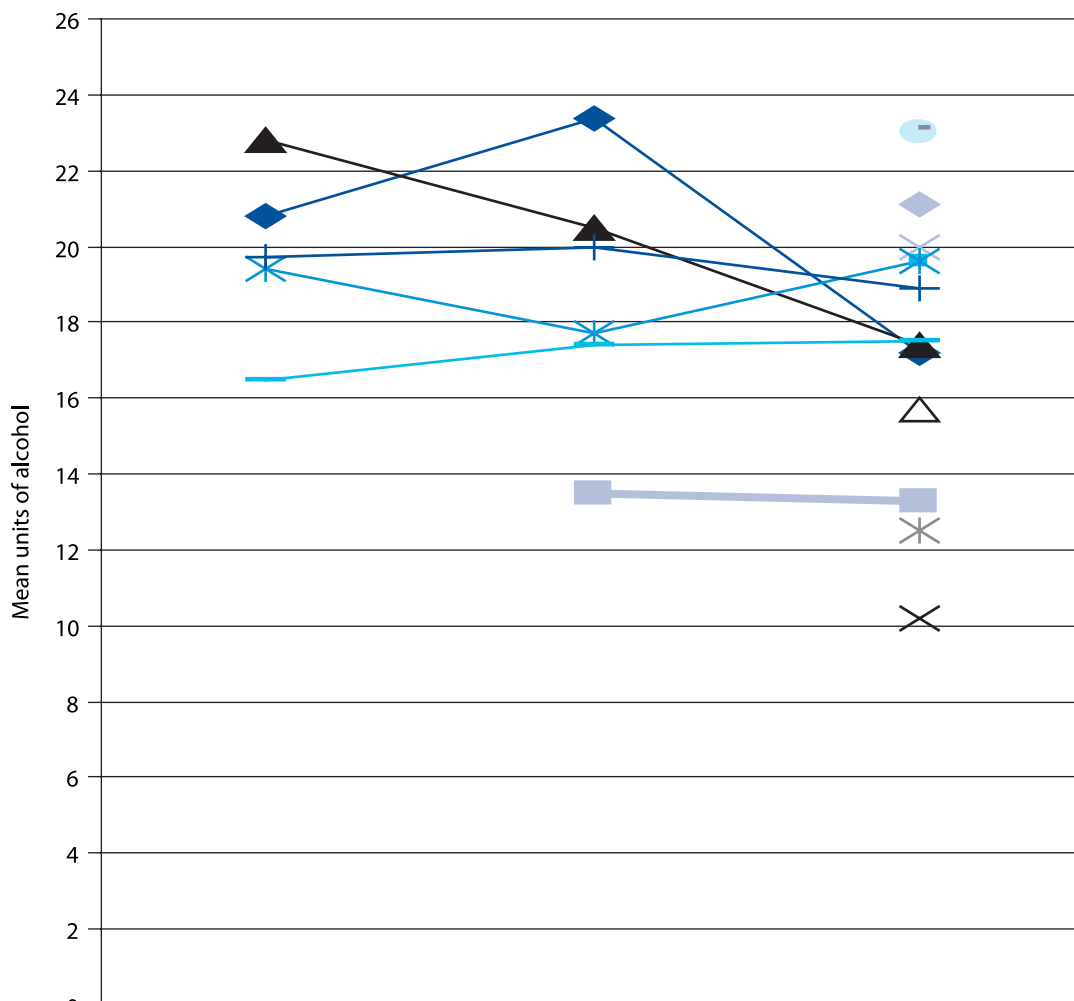
Source: HSE, 2006 (National Statistics, 2006).

Figure 21: Trends in mean alcohol consumption (units) per week in Scotland, 1995 to 2003, by gender



The two values for 2003 are original (o) and revised (r) methods of alcohol unit calculation applied to the same data. Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 22: Trends in mean weekly alcohol consumption (units) per week in men in Scotland, 1995 to 2003, by age group

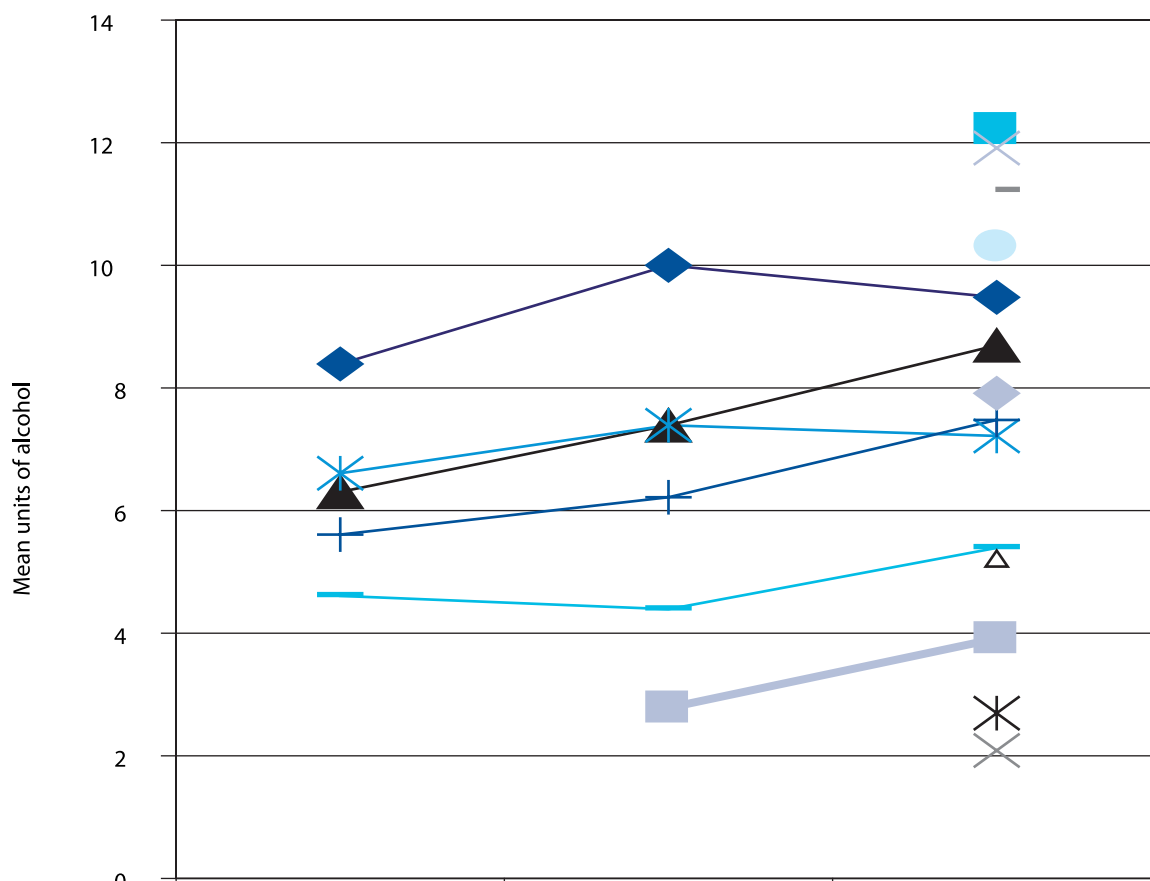


	1995	1998	2003
◆ 16–24 (o)	20.8	23.4	17.2
■ 16–24 (r)			19.6
▲ 25–34 (o)	22.8	20.5	17.4
× 25–34 (r)			20
✱ 35–44 (o)	19.4	17.7	19.6
● 35–44 (r)			23
+ 45–54 (o)	19.7	20	18.9
— 45–54 (r)			23.1
— 55–64 (o)	16.5	17.4	17.5
◇ 55–64 (r)			21.1
■ 65–74 (o)		13.5	13.3
△ 65–74 (r)			15.7
× 75 and over (o)			10.2
✱ 75 and over (r)			12.5

Year

The two values for 2003 are original (o) and revised (r) methods of alcohol unit calculation applied to the same data. Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 23: Trends in mean weekly alcohol consumption (units) per week in women in Scotland, 1995 to 2003, by age group



	1995	1998	2003
16-24 (o)	8.4	10.0	9.5
16-24 (r)			12.2
25-34 (o)	6.3	7.4	8.7
25-34 (r)			11.9
35-44 (o)	6.6	7.4	7.2
35-44 (r)			10.3
45-54 (o)	5.6	6.2	7.5
45-54 (r)			11.2
55-64 (o)	4.6	4.4	5.4
55-64 (r)			7.9
65-74 (o)		2.8	3.9
65-74 (r)			5.2
75 and over (o)			2.1
75 and over (r)			2.7

Year

The two values for 2003 are original (o) and revised (r) methods of alcohol unit calculation applied to the same data. Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

(Goddard, 2006, 2007a). The GHS shows that during the 1990s there was a slight increase in the proportion of men drinking more than 21 units a week followed by a decline from 2000 to 2005 (Goddard, 2006). There is a step change from 2005 to 2006 because of the change in the way that units were estimated. In 1998, 28 per cent of men drank more than 21 units a week, which increased to 31 per cent in 2006. The pattern is similar in women, but the changes are more pronounced, with 15 per cent of women drinking more than 14 units a week in 1998 increasing to 20 per cent. Both of these trends are based on the improved method of calculating units and are in contrast to the apparent trend if data for the original method is used (see Figure 24).

The trends observed in the GHS are similar to those of the Omnibus Survey. The Omnibus Survey (Goddard, 2007a) shows that the proportion of men drinking more than 21 units a week increased from 24 per cent in 1997 to 27 per cent in 2007, based on the improved method of calculating alcohol units. In women, the proportion drinking more than 14 units a week increased from 14 per cent in 1997 to 22 per cent in 2007 (see Figure 25).

The GHS provides data on trends by age group. In young men aged 16 to 24 years, following a sharp increase in the proportion drinking more than 21 units a week from 1988 to 2000, the proportion has since declined to 30 per cent in 2006. Interpretation of changes for men older than 21 years is highly dependent on the change in measurement of an alcohol unit. Based on the original method of unit calculation, since around 1998 to 2000, drinking has declined in men of all age groups. However, if the revised estimates for 2006 are used, consumption has increased. Particularly for men aged 45 to 64 and 65 years and over, there has been an overall increase in the proportion drinking more than 21 units a week of 10 and 8 per cent, respectively from 1988 to 2006 (see Figure 26).

The pattern is similar in women with results dependent on the change in unit calculation. In young women aged 16 to 24 years, following a steep rise from 15 per cent in 1988 to 33 per cent in 2000 to 2002, there has been a reduction in the proportion of women drinking more than 14 units a week to 19 per cent or 24 per cent for original and revised estimates, respectively. For all other

groups, apart from a small decrease from 2000 to 2005, the overall trends indicate either little further change, or an increase in the proportion of women drinking more than 14 units a week, based on original and revised estimates, respectively (see Figure 27).

England

The HSE provides data on trends from 1993 to 2002 (National Statistics, 2006). The trends for men and women are similar to those shown in the GHS and Omnibus Survey for this time period. There was negligible change in men over time, but an increase from 13 per cent in 1993 to 18 per cent in 2002 in women (see Figure 28). Data using the improved method of calculating alcohol units and for more current years is not yet available.

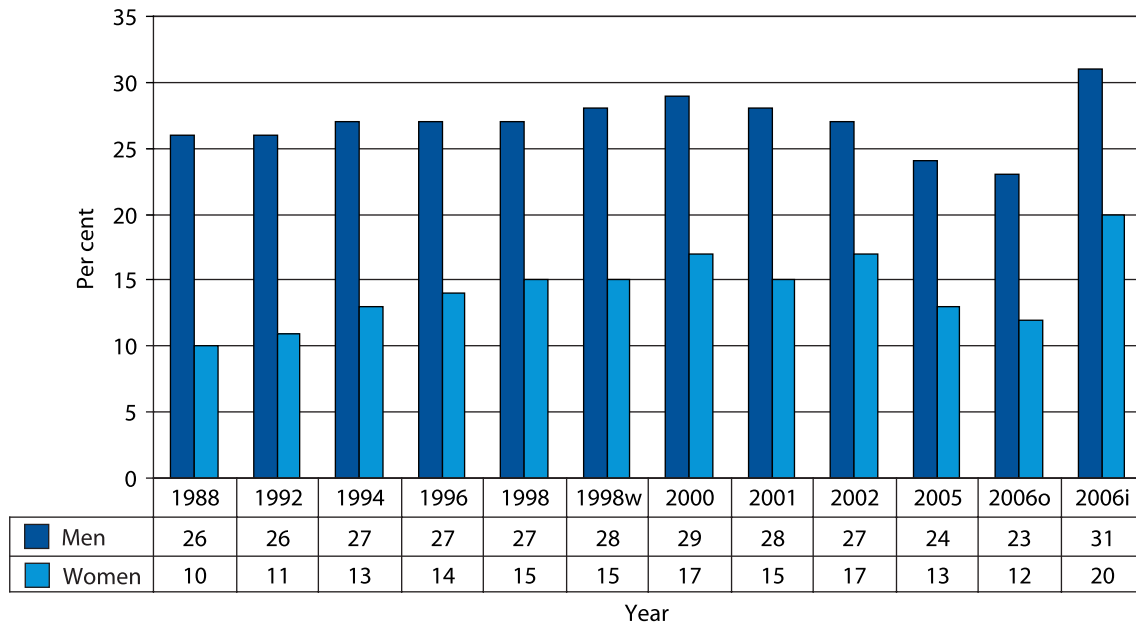
Scotland

The HEPS and SHS provide data on trends in exceeding recommended weekly limits for Scotland (Bromley *et al.*, 2005; Gosling, 2005). The HEPS showed that, in men, the proportion drinking more than 21 units a week declined from 25 per cent in 1996 to 18 per cent in 2005. In women, there was little overall change in the proportion drinking more than 14 units per week (Gosling, 2005) – see Figure 29. Data from the SHS (Bromley *et al.*, 2005) is available for three time points only and interpretation of trends to 2003 is dependent on the method of alcohol unit calculation. In order to be comparable to other national surveys, the 2003 SHS alcohol consumption data was recalculated and presented in an update in 2008 (Bromley *et al.*, 2008).

Based on the original method of unit calculation, a decline from 33 per cent in 1995 to 29 per cent in 2003 was shown in men, though the absolute proportions drinking are higher than shown in the HEPS. The new method applied to 2003 data shows no such decline, with the proportion remaining the same (see Figure 30). The proportion of women drinking more than 14 units a week increased from 13 per cent in 1995 to 17 per cent, or 23 per cent in 2003 for original and revised methods, respectively.

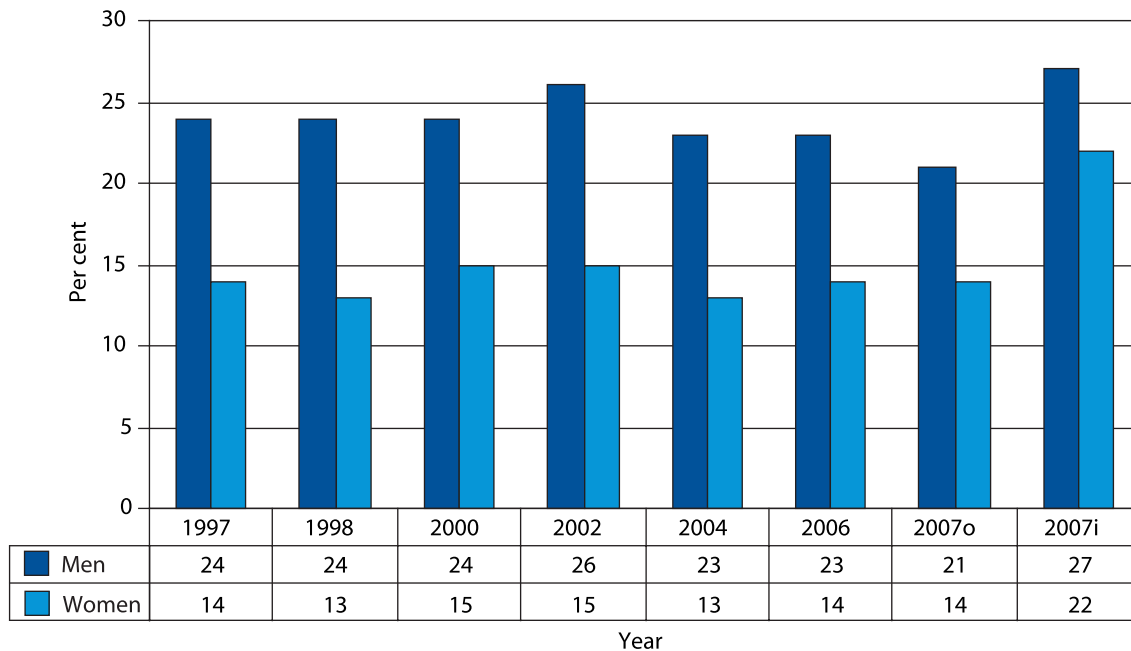
The SHS reports results by age group (Bromley *et al.*, 2005, 2008). In men, the decrease is greater in the youngest age group, with little change in men aged 45 to 54 and 55 to 64 years, based

Figure 24: Trends in the proportion of men in Great Britain drinking more than 21 units a week and women drinking more than 14 units a week, 1988 to 2006



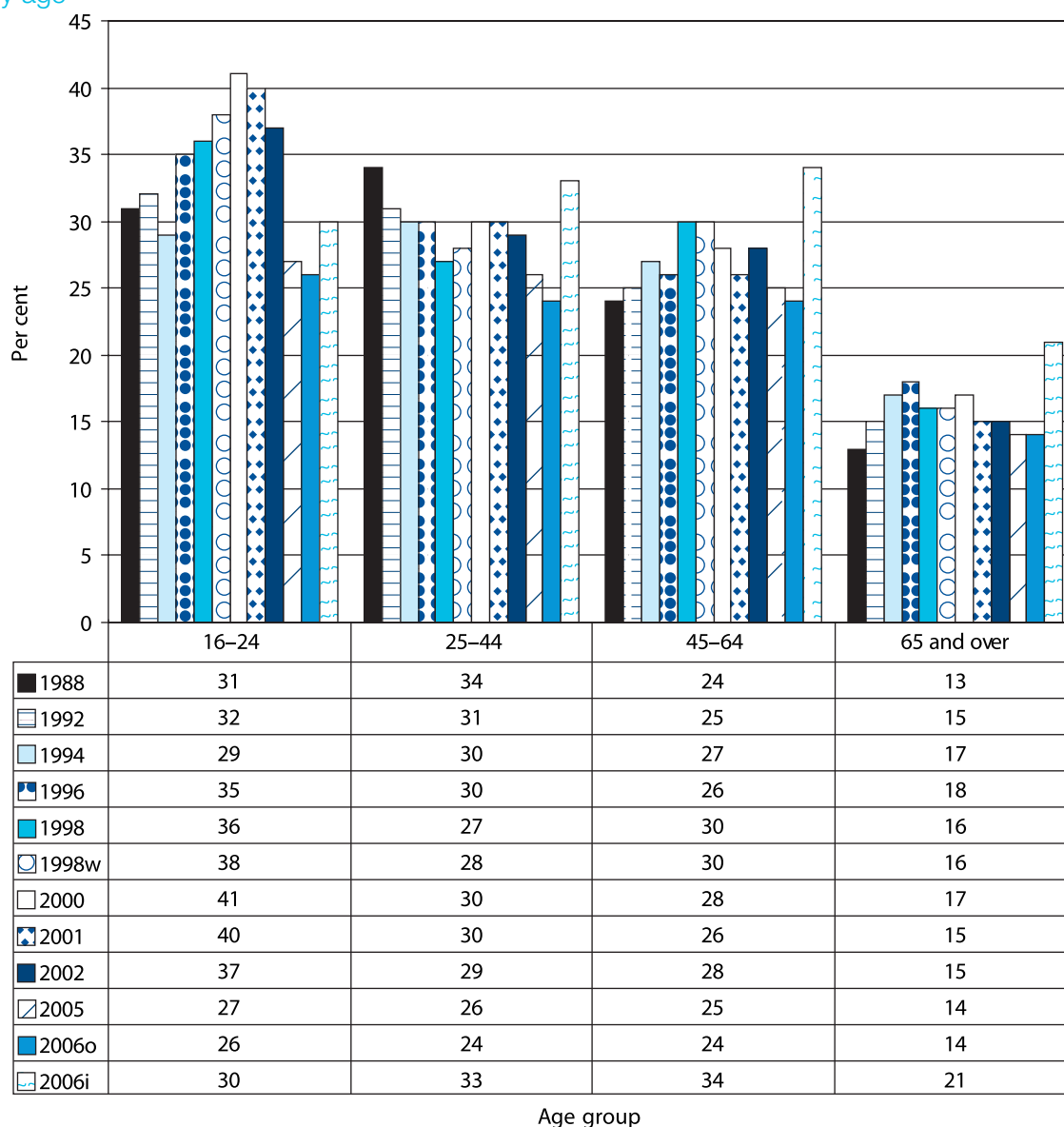
w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method of calculating alcohol units. Time period between survey years is not consistent.
 Source: GHS, 2006 (Goddard, 2006).

Figure 25: Trends in the proportion of men in Great Britain drinking more than 21 units a week and women drinking more than 14 units a week, 1997 to 2007



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Time period between survey years is not consistent.
 Source: Omnibus Survey, 2007 (Goddard, 2007a).

Figure 26: Trends in the proportion of men in Great Britain drinking more than 21 units a week, 1988 to 2006, by age



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Time period between survey years is not consistent.
 Source: GHS, 2006 (Goddard, 2006).

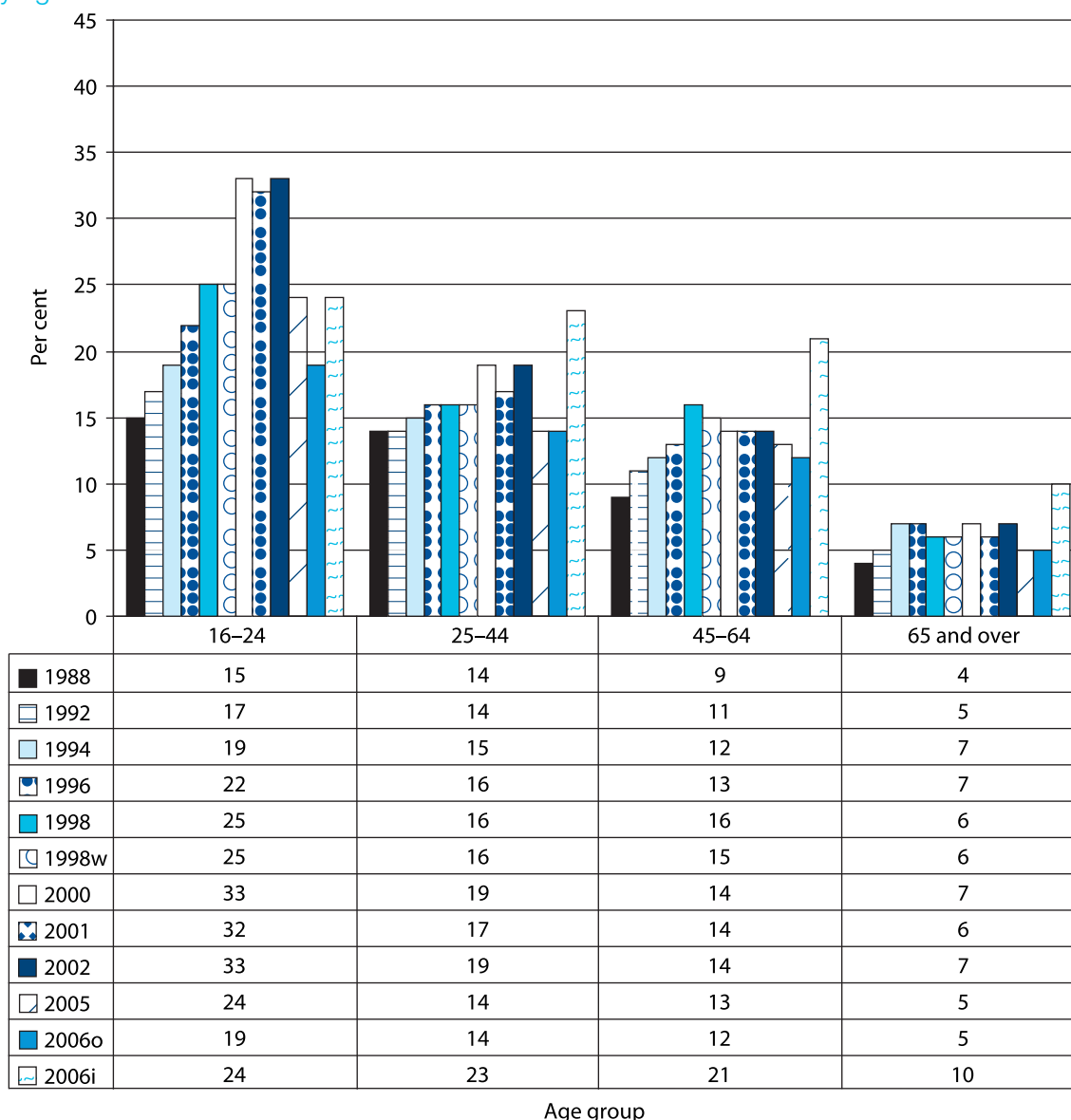
on original method of unit calculation (see Figure 31). Based on the revised estimates for 2003, an increasing trend in consumption is apparent for men aged more than 25 years, which is more marked for the older age groups. The differences between original and revised estimates are greatest in men aged 25 to 54 years old.

For women, the increase in consumption of more than 14 units is seen for all age groups, but is greatest for young women aged 16 to 24 and 45 to 54 years (see Figure 32). The revised estimates for 2003 show marked increases in consumption for all age groups between 16 to 24 and 54 to 65.

Northern Ireland

The CHS provides data on trends in exceeding recommended weekly limits for Northern Ireland from 1986 to 2006/07 (Northern Ireland Statistics and Research Agency, 2007). In men, the proportion drinking more than 21 units a week has risen considerably from 10 per cent in 1986 to 28 per cent in 2006/07. There is also an increase in the proportion of women drinking more than 14 units a week, though the increase is not as great, going from 3 per cent in 1986 to 11 per cent in 2006/07 (see Figure 33).

Figure 27: Trends in the proportion of women in Great Britain drinking more than 14 units a week, 1988 to 2006, by age



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Time period between survey years is not consistent. Source: GHS, 2006 (Goddard, 2006).

When the results are considered for the different age groups, the pattern of change in men and women is similar. The age group with the greatest increase in drinking more than the recommended amount is young men and women aged 18 to 24 years, with the rate of increase declining by age group (see Figures 34 and Figure 35).

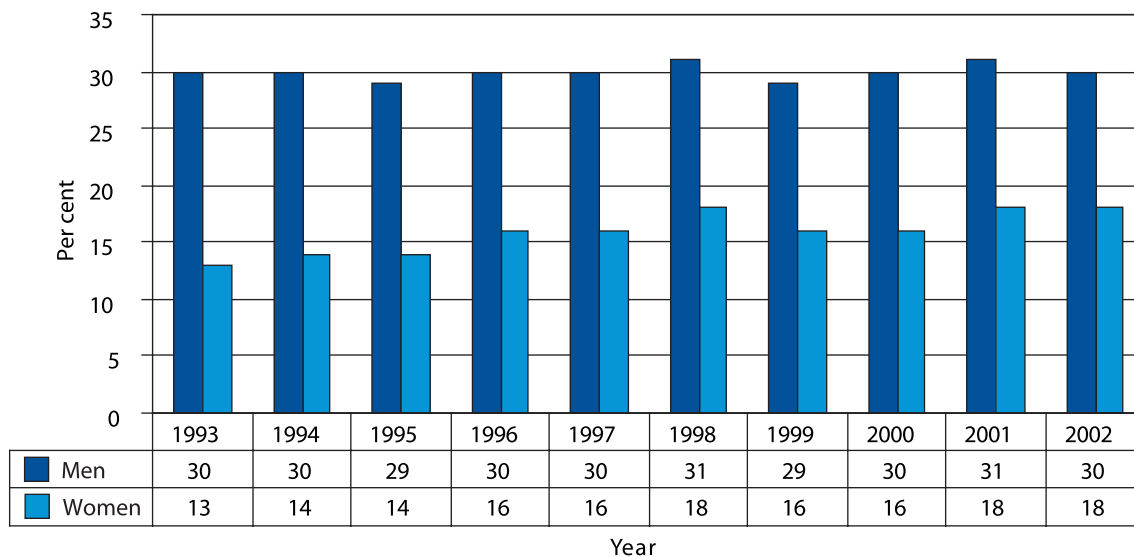
Wales

The WHS provides data on trends in exceeding recommended weekly limits for Wales from 2003/04 to 2007 (Dolman *et al.*, 2007, 2008).

There has been little change from 2003 to 2007 in men and a reduction in the proportion of women drinking more than the recommended units on an average drinking day (see Figure 36).

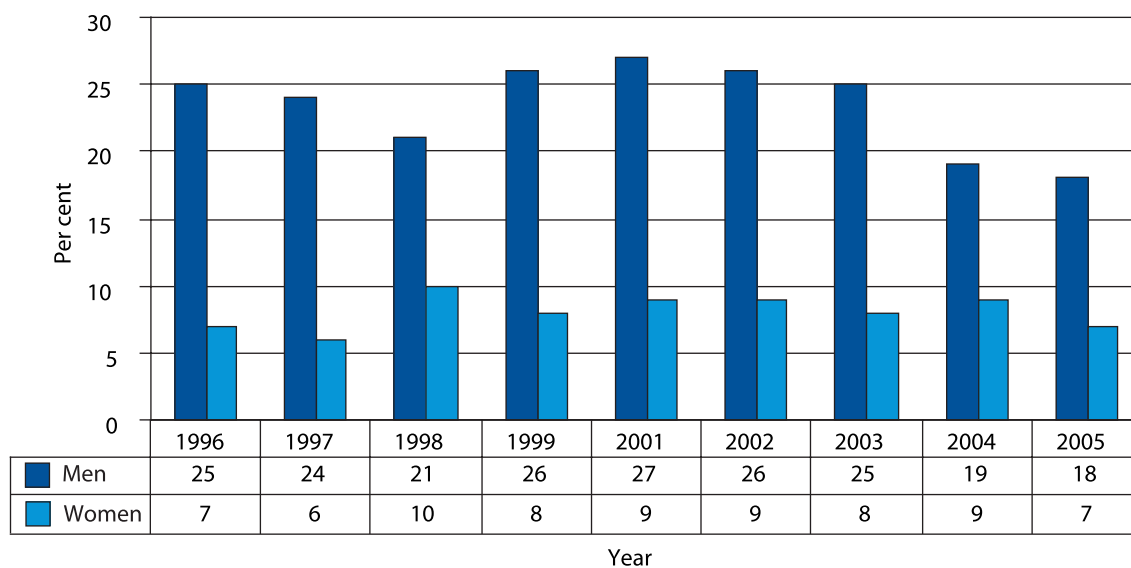
From 1988 to 2006, there has been an overall increase in drinking in excess of recommended weekly limits for men and women in Great Britain, taking into consideration revised methods for unit calculation. The change is more marked in women than men. Based on examination in different age groups, excessive consumption among 16 to 24 year old men increased initially from 1992 to 2000,

Figure 28: Trends in the proportion of men in England drinking more than 21 units a week, and women drinking more than 14 units a week, 1993 to 2002



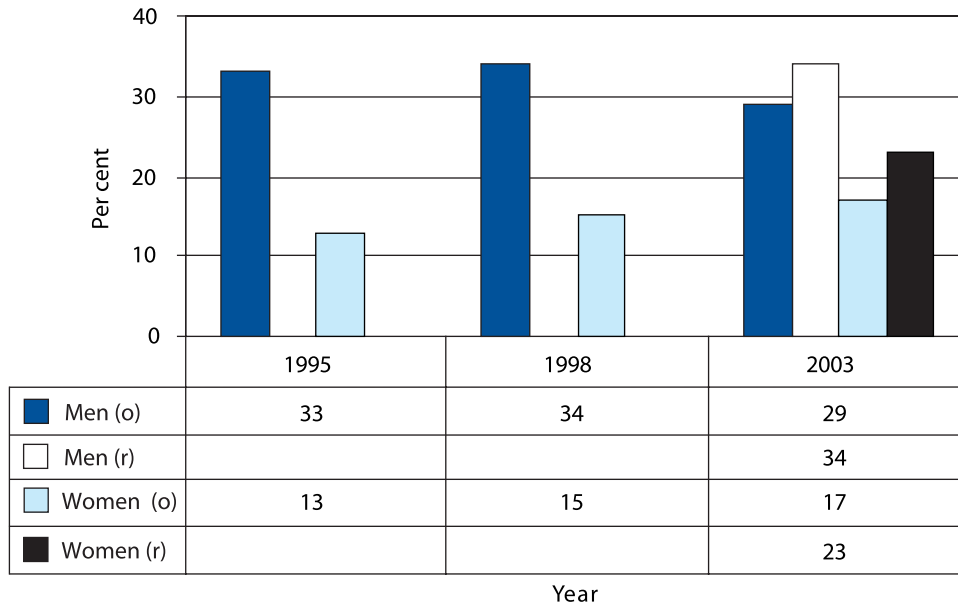
Source: HSE, 2006 (National Statistics, 2006).

Figure 29: Trends in the proportion of men in Scotland drinking more than 21 units a week and women drinking more than 14 units a week, 1996 to 2005



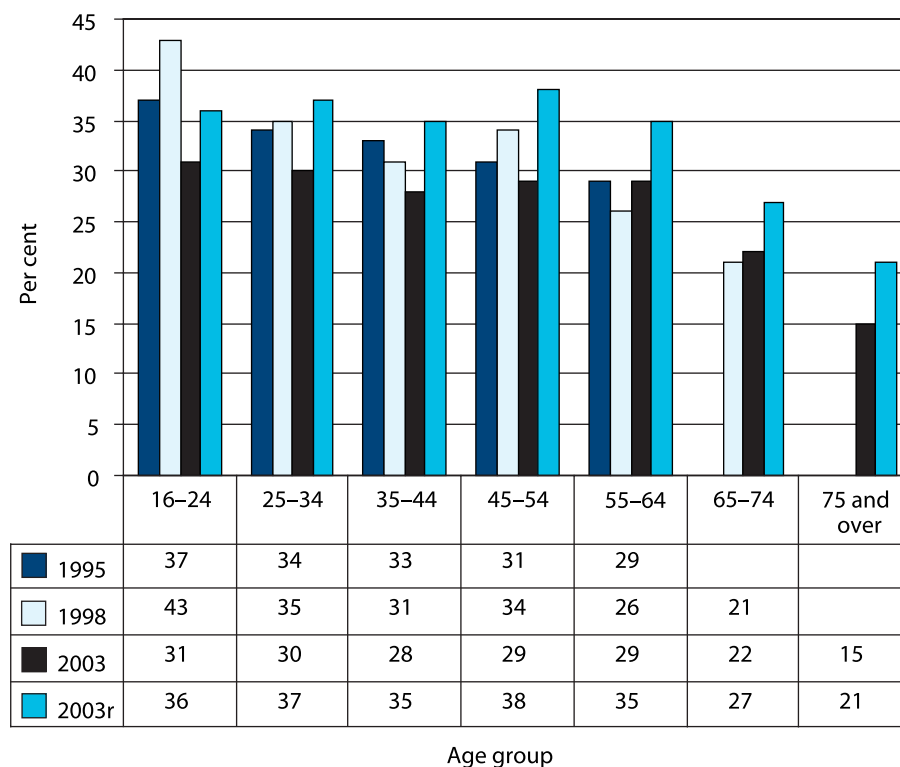
Source: HEPS, 2005 (Gosling, 2005).

Figure 30: Trends in the proportion of men in Scotland drinking more than 21 units a week, and women drinking more than 14 units a week, 1995 to 2003



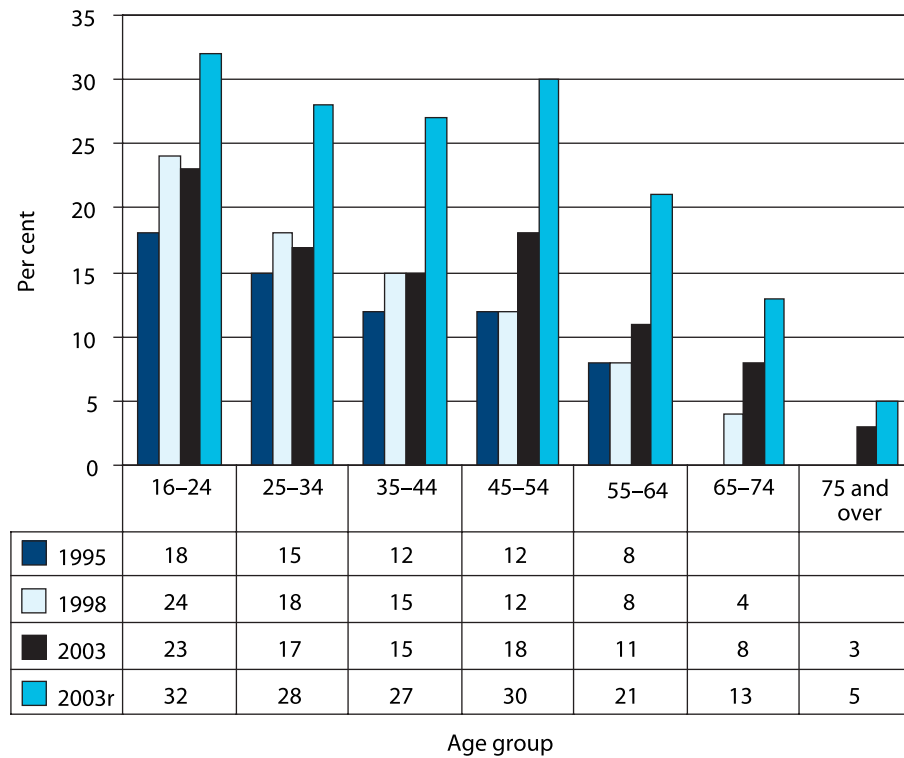
o = original method of calculating alcohol units; r = revised method applied to 2003 data.
 Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 31: Trends in the proportion of men in Scotland drinking more than 21 units a week, 1995 to 2003, by age



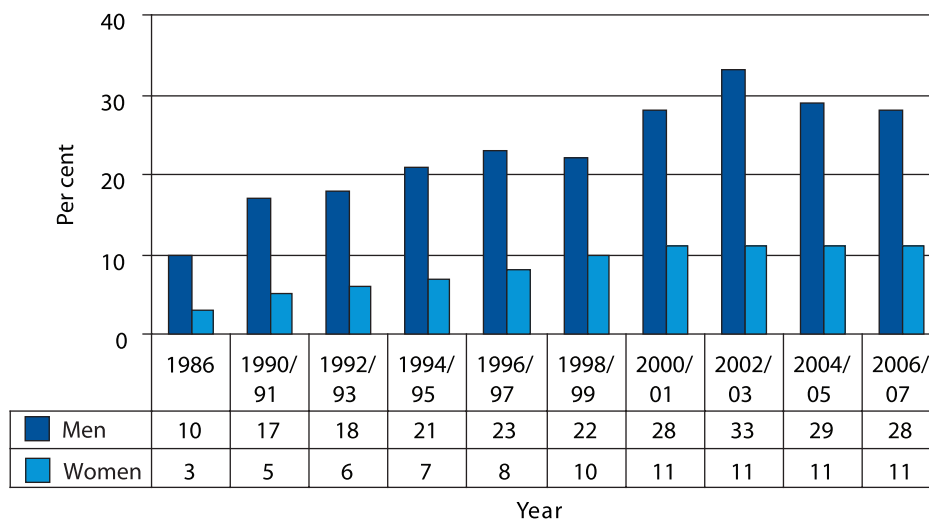
2003r represents 2003 estimates revised according to new method for alcohol unit calculation.
 Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 32: Trends in the proportion of women in Scotland drinking more than 14 units a week, 1995 to 2003, by age



2003r represents 2003 estimates revised according to new method for alcohol unit calculation.
Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 33: Trends in the proportion of men in Northern Ireland drinking more than 21 units a week, and women drinking more than 14 units a week, 1986 to 2007



Four-year time period between 1986 and 1990/01 is not the same as time period between other years.
Source: CHS 2006/07 (Northern Ireland Statistics and Research Agency, 2007).

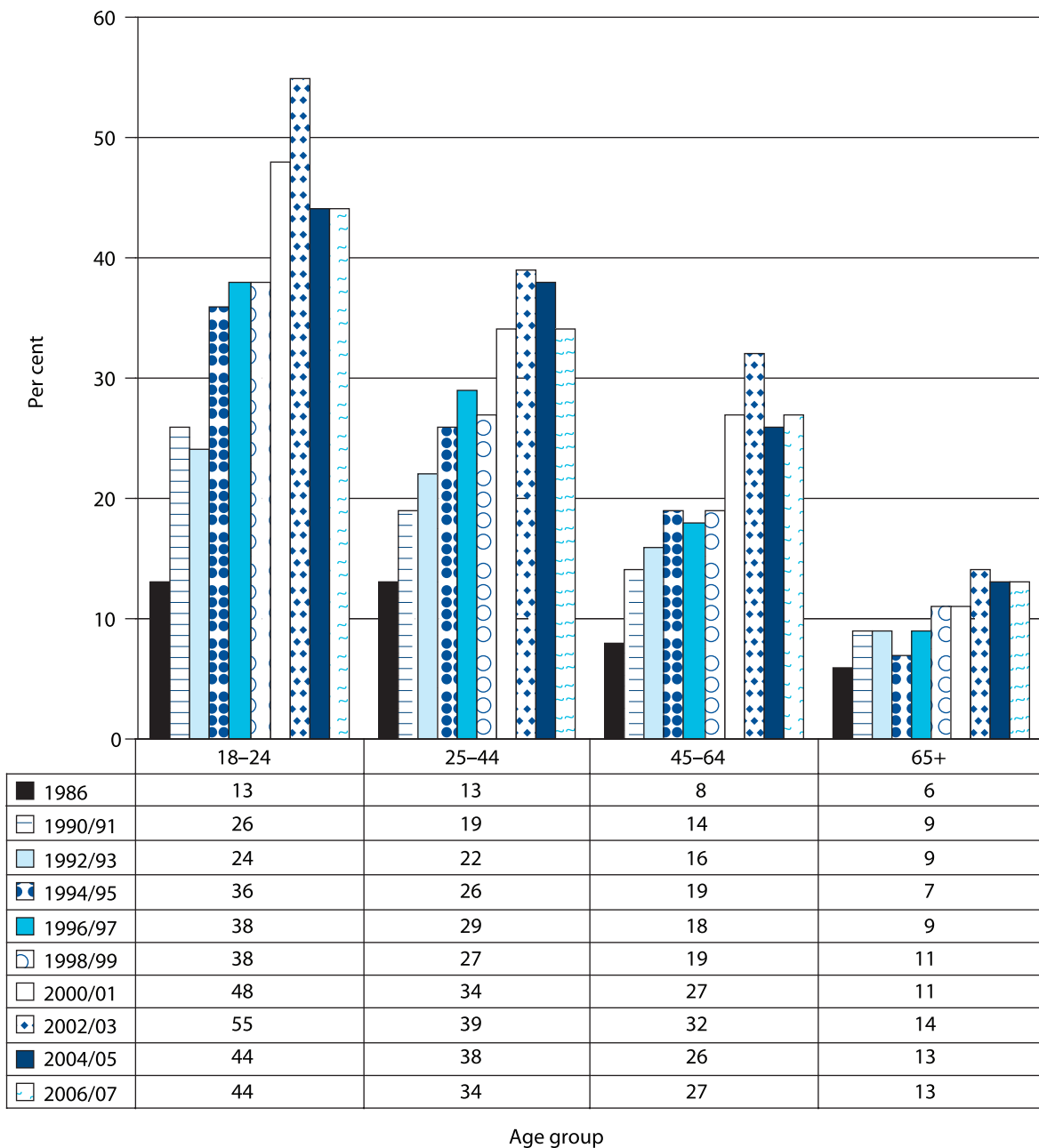
Great Britain

Data from the GHS shows the proportion of men and women drinking more than twice the recommended levels of eight units (men) and six units (women) of alcohol on at least one day in the previous week for Great Britain as a whole, and also for England, Scotland and Wales separately. The proportion of men and women drinking more than twice the recommended units on at least one day in the last week has fallen from 2003 to 2005 (see Figures 37 and 38). However, this does not take into account recent changes in the

way a unit of alcohol is calculated, which affects estimates for other drinking outcomes calculated for subsequent survey years. This data goes up to 2005 and the new way of recording units was introduced in 2006. Since wine drinkers may be underestimating their consumption, trends in women's drinking in particular may be masked. Therefore, cautious interpretation of this apparent decline is recommended.

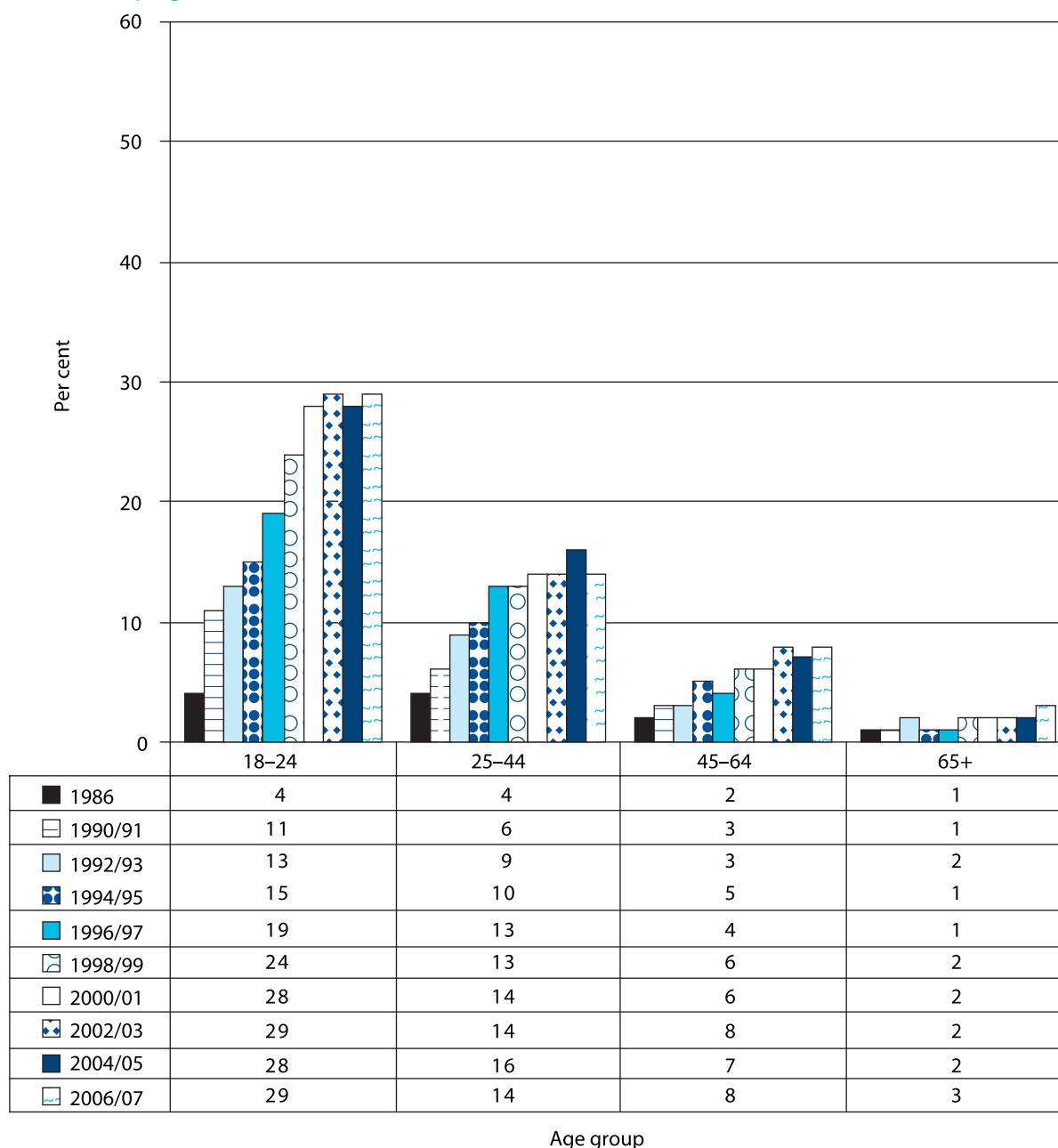
More up-to-date data from the GHS shows the proportion of men and women drinking more than twice the recommended levels of eight units (men)

Figure 34: Trends in the proportion of men in Northern Ireland drinking more than 21 units a week, 1986 to 2007, by age



Four-year time period between 1986 and 1990/01 is not the same as time period between other years.
Source: CHS 2006/07 (Northern Ireland Statistics and Research Agency, 2007).

Figure 35: Trends in the proportion of women in Northern Ireland drinking more than 14 units a week, 1986 to 2007, by age.



Four-year time period between 1986 and 1990/01 is not the same as time period between other years.
 Source: CHS 2006/07 (Northern Ireland Statistics and Research Agency, 2007).

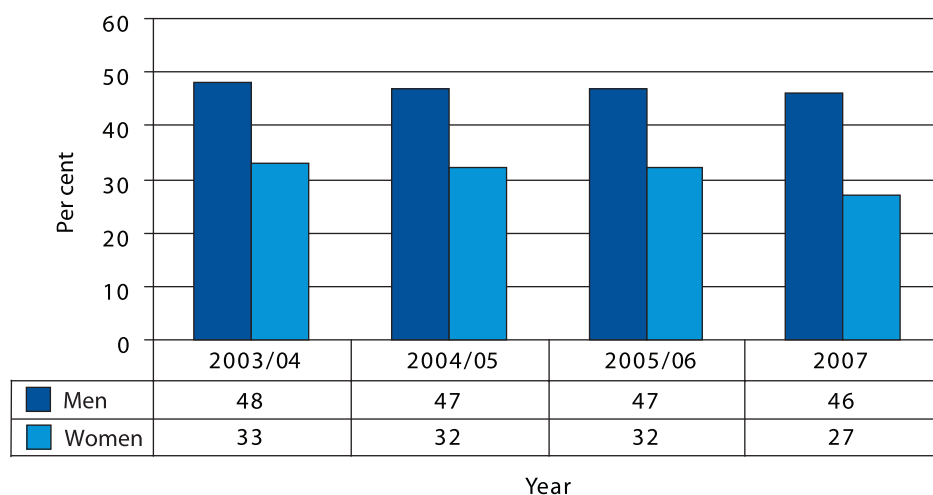
but has since fallen to a similar proportion as in 1988. A similar trend was observed in women aged 16 to 24 years, though the decline occurred after 2002. This is in contrast with older age groups where excessive consumption has either changed little or increased based on original and revised methods of unit calculation, respectively. Data for England and Scotland shows similar trends to Great Britain as a whole. For men and women in Wales, there was little change over a short time period from 2003 to 2007. In contrast,

for men and women in Northern Ireland, there has been an increase in the proportion exceeding recommended weekly limits over a longer time span from 1988 to 2007.

Proportion of people binge drinking

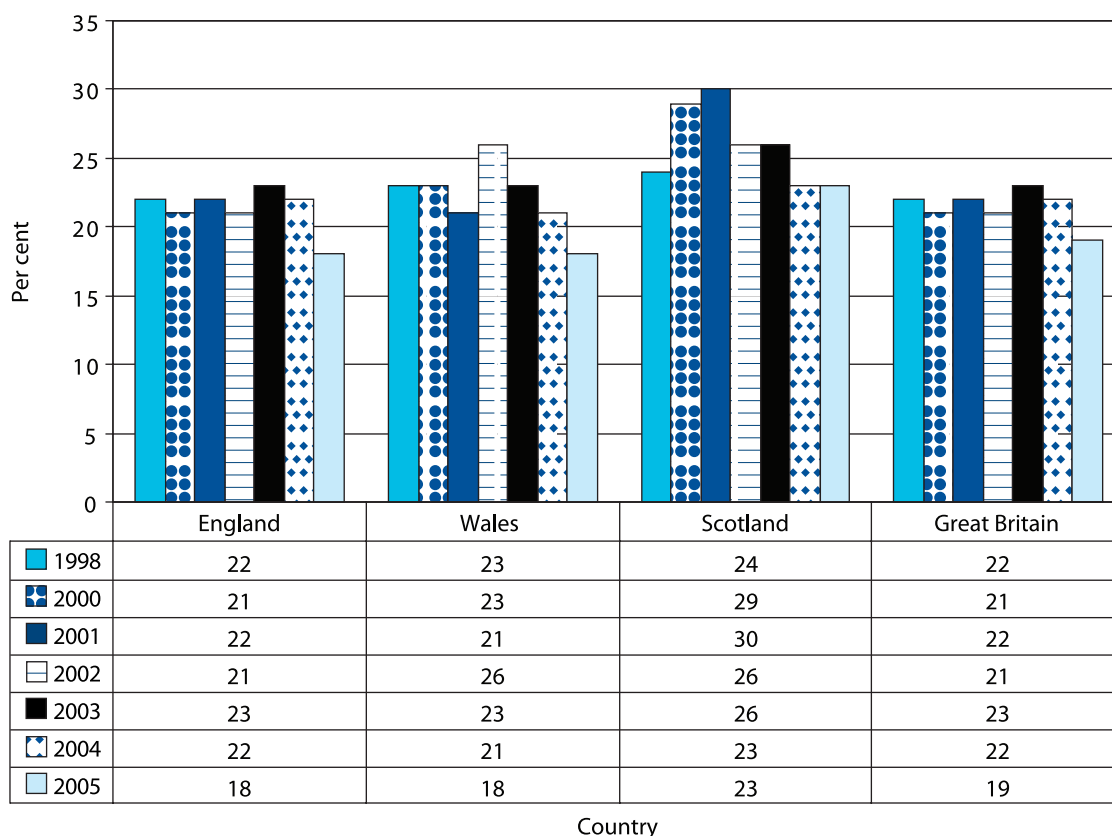
Although there is no standard definition of binge drinking, it is typically defined as drinking more than twice the recommended daily limit on any one day. This corresponds to more than eight units of alcohol in men and more than six units in women.

Figure 36: Trends in drinking above recommended guidelines in men and women in Wales, 2003/04 to 2007



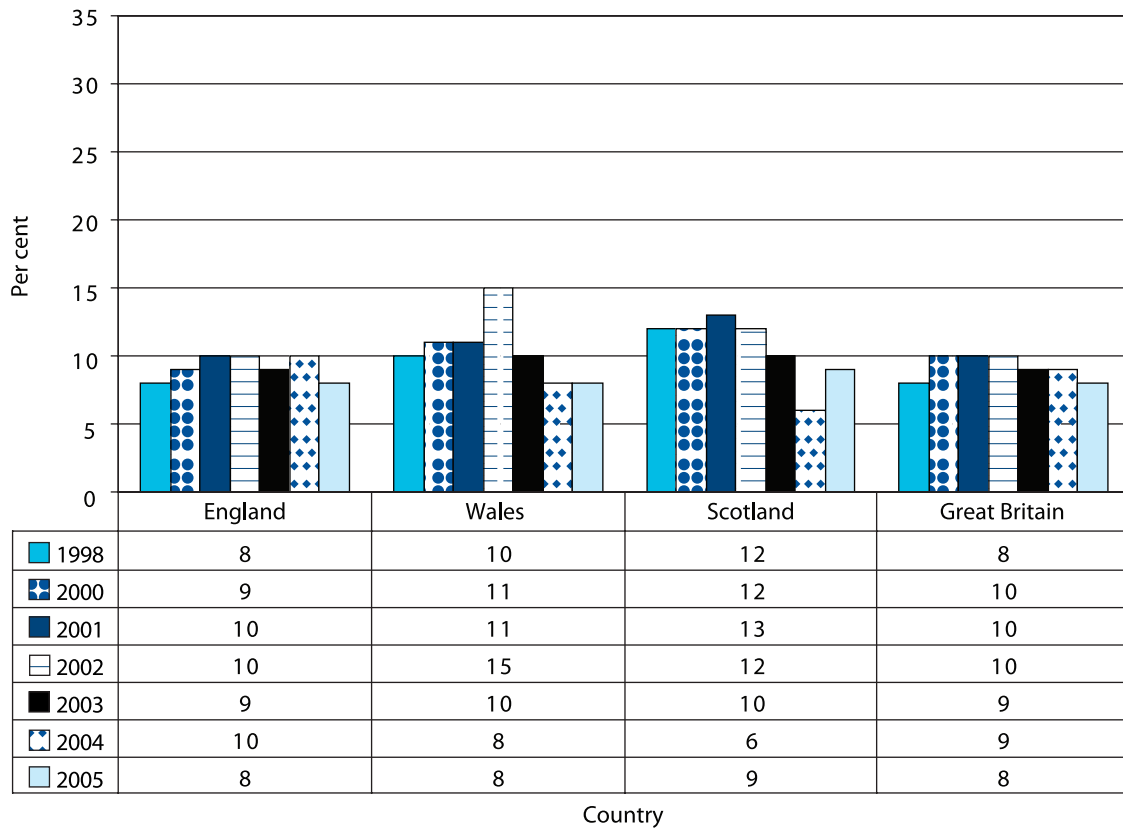
Participants aged 16 years and above (drinkers and non-drinkers).
Source: WHS, 2007 (Dolman *et al.*, 2007, 2008).

Figure 37: Trends in the proportion of men drinking more than eight units on any one day in the last week, 1998 to 2005



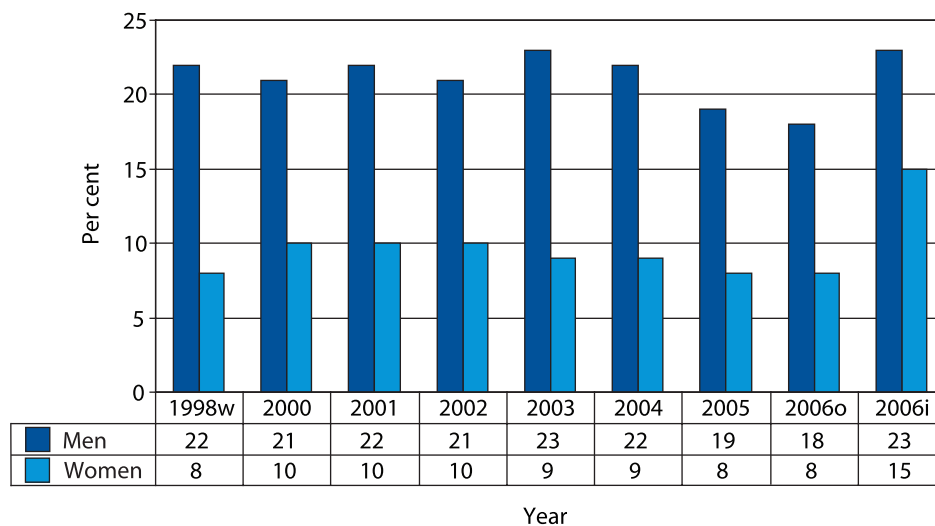
Two-year time period between 1998 and 2000 is not the same as time period between other years.
Source: GHS, 2006 (Goddard, 2006).

Figure 38: Trends in the proportion of women drinking more than six units on any one day in the last week, 1998 to 2005



Two-year time period between 1998 and 2000 is not the same as time period between other years.
 Source: GHS, 2006 (Goddard, 2006).

Figure 39: Trends in the proportion of men in Great Britain drinking more than eight units, and women drinking more than six units, on any one day in the last week, 1998 to 2006



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Two-year time period between 1998 and 2000 is not the same as time period between other years.
 Source: GHS, 2006 (Goddard, 2006).

and six units (women) on at least one day in the previous week for 1998 to 2006. The increase in women from 8 per cent in 1998 to 15 per cent in 2006 is more marked than the overall increase of 1 per cent seen for men (see Figure 39). It is worth noting that women are disproportionately affected by the change in unit calculation because of their greater representation as wine drinkers.

While the overall trend in consumption in men is little different from 1998 to 2006, there is a marked difference in young men compared with older age groups (see Figure 40). In young men aged 16 to 24 years there has been a marked decrease from 39 to 30 per cent in the

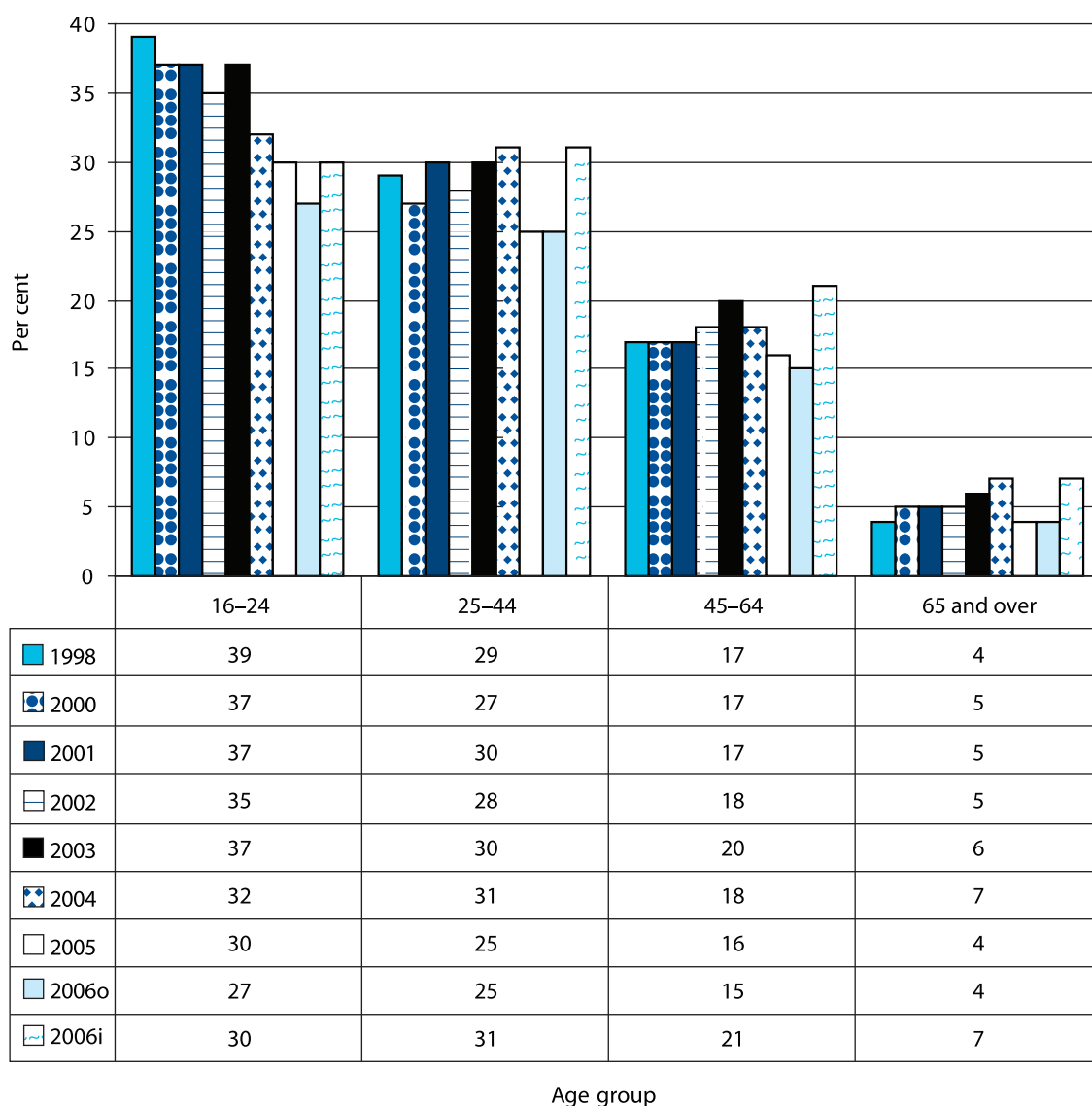
proportion drinking more than eight units on at least one day in contrast to a slight increase in the older age groups. Older age groups are also disproportionately affected by the change in method used to calculate alcohol units in 2006, as they are more likely to be wine drinkers.

In women, the greatest increase is seen in the 25 to 44 and 45 to 64 year age groups and little change has occurred in younger women aged 16 to 24 years (see Figure 41).

England

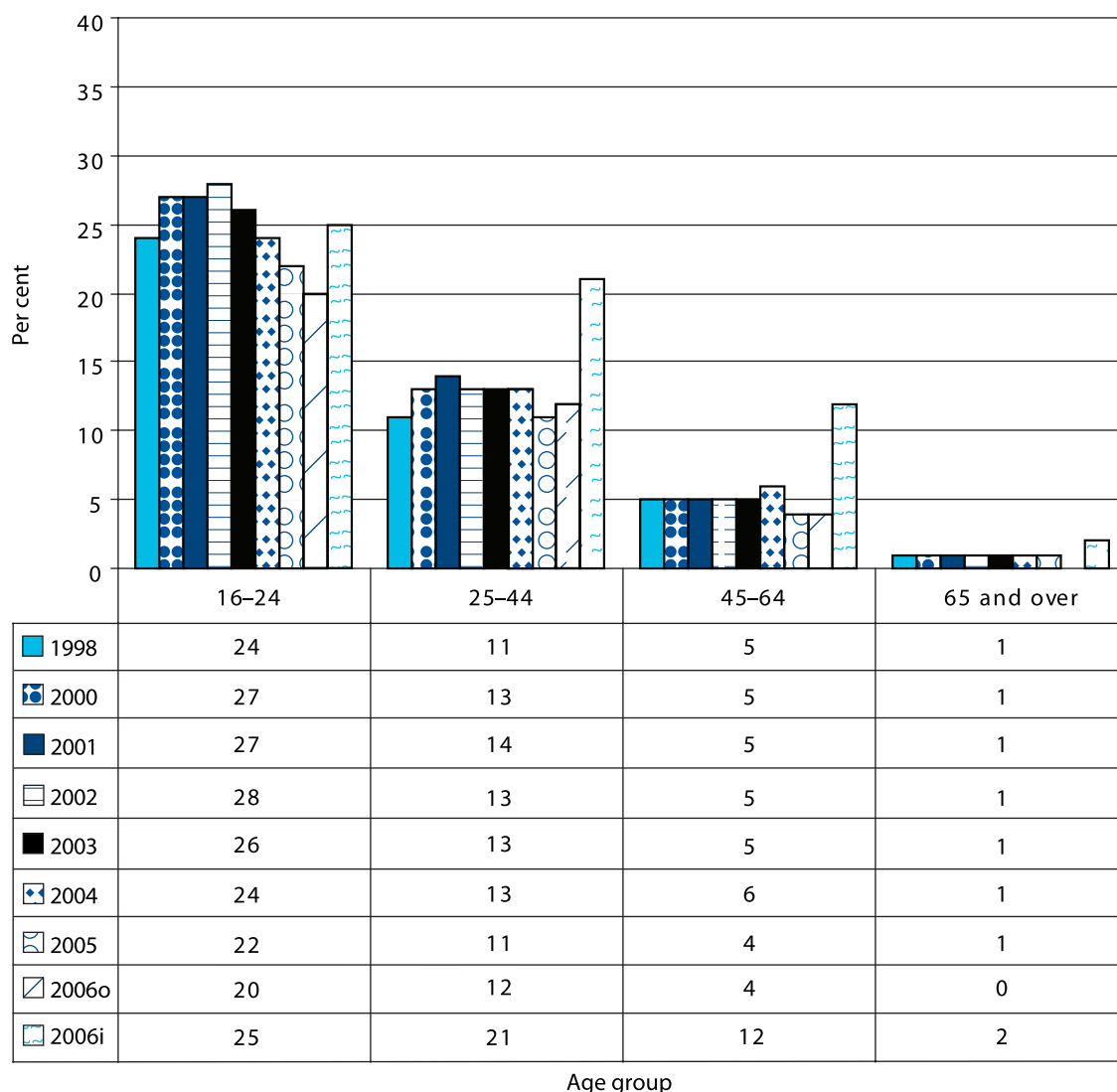
The trends shown in the HSE are in close agreement with data for the same time period

Figure 40: Trends in the proportion of men in Great Britain drinking more than eight units on any one day in the last week, 1998 to 2006, by age



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Two-year time period between 1998 and 2000 is not the same as time period between other years.
Source: GHS, 2006 (Goddard, 2006).

Figure 41: Trends in the proportion of women in Great Britain drinking more than six units on any one day in the last week, 1998 to 2006, by age



w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Two-year time period between 1998 and 2000 is not the same as time period between other years.
Source: GHS, 2006 (Goddard, 2006).

in the GHS. A similar increase is shown in the proportion of men and women drinking twice that recommended on at least one day in the last week, with the increase greater for women than men (see Figure 42).

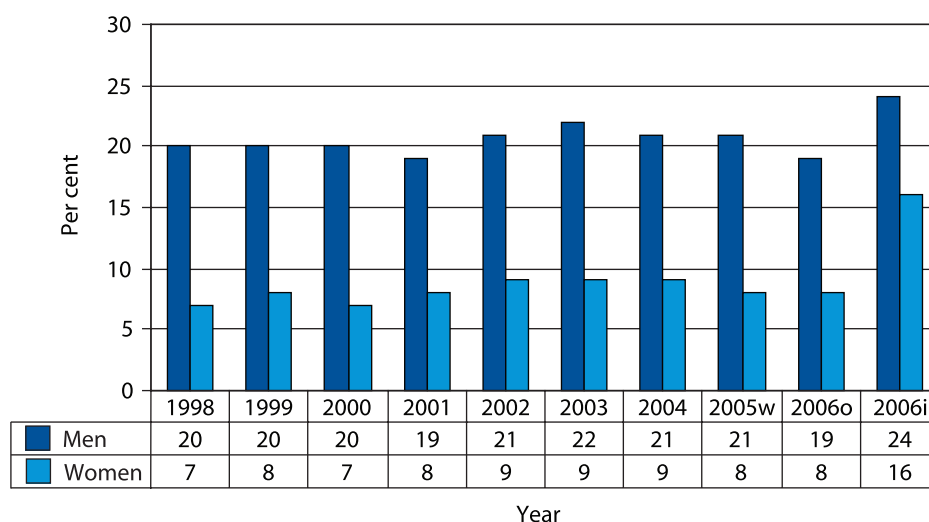
In common with the trends shown in the GHS, there is a marked difference in the proportion drinking at least eight units on at least one day in the last week in young men compared with older age groups (see Figure 43). In young men aged 16 to 24 years there has been a marked decrease from 37 to 31 per cent in the proportion drinking more than eight units on at least one day, in contrast with increased proportions in the older age groups. In women, there is a marked increase in the proportion drinking more than six units on

at least one day in the last week for all age groups (see Figure 44).

Scotland

There is limited trend data available for Scotland from the Scottish Health Survey for the proportion of men and women binge drinking (Bromley *et al.*, 2005, 2008). This was originally defined as drinking at least twice the recommended units (six or more for women; eight or more for men) on the heaviest drinking day in the last week, results for which are presented in the figures below. Revised estimates for 2003 (Bromley *et al.*, 2008) also incorporate a change in the definition of binge drinking to be consistent with other national surveys and have

Figure 42: Trends in the proportion of men in England drinking more than eight units and women drinking more than six units on any one day in the last week, 1998 to 2006



Outcome is >eight or >six units to tie in with the GHS definition and trend data has been recalculated to reflect this. w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method of calculating alcohol units.

Source: HSE, 2006 (National Statistics, 2006).

defined thresholds for binge drinking as more than six units for women and more than eight units for men. Unfortunately, results for binge drinking based on the revised unit calculation method and change in definition reported in the SHS 2003 (Bromley *et al.*, 2008) are not comparable to data for 1998, which is the proportion binge drinking among people who drink that is reported, rather than among drinkers and non-drinkers as in previous years.

Based on original estimates, from 1998 to 2003 the proportion binge drinking has decreased from 34 to 29 per cent in men, and increased from 16 to 19 per cent in women (see Figure 45). These trends are similar to those of the GHS, although the prevalence estimates are higher in the SHS, most probably due to a slightly different definition of binge drinking originally used (see Figure 37 earlier in this chapter). The effect of the revised thresholds and unit conversion suggests that data for 2003 was underestimated. It is difficult to predict the likely magnitude of the underestimate as the difference between 2003d and 2003r is based on estimates in drinkers, whereas data for 1998 and 2003 are for drinkers and non-drinkers.

Based on the original method, in all men, the reduction is seen for most age groups apart from older men aged 55 to 64 and 65 to 74 years.

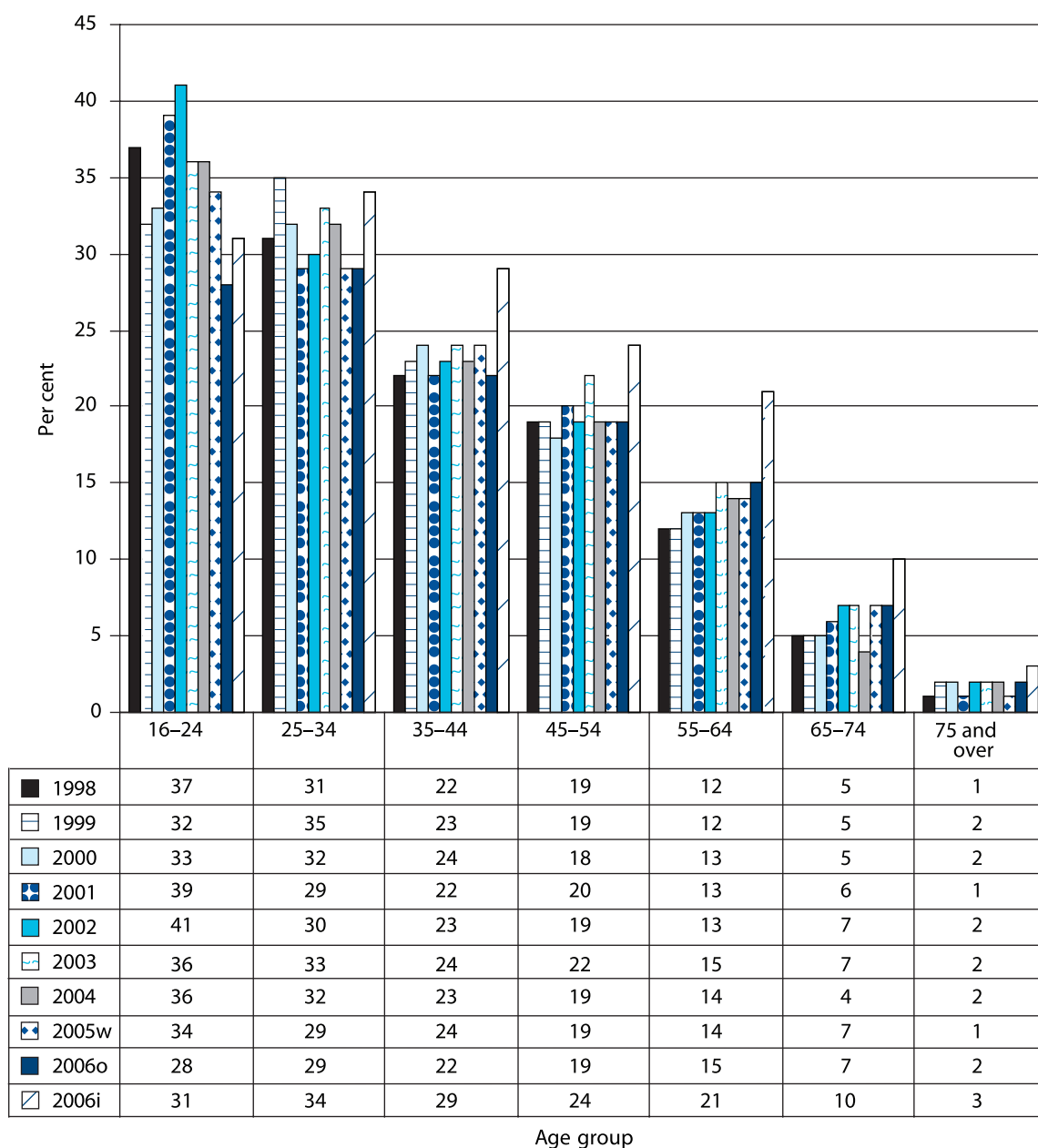
There is a slight increase in the proportion of men aged 65 to 74 years drinking at least eight units on the heaviest drinking day in the last week from 11 to 14 per cent (see Figure 46). In all women, the proportion drinking at least six units on the heaviest drinking day in the last week increased for all age groups, similarly (see Figure 47). Again, the effect of the revised thresholds and unit conversion suggests that data for 2003 was underestimated. In drinkers, men in all age groups between 25 to 34 and 55 to 64, and women in age groups between 16 to 24 and 55 to 64 years, show moderate to substantial increases in binge drinking.

The HEPS provides the proportion of men and women reporting at least four binge drinking sessions in the last month in Scotland from 1996 to 2005. This has decreased from 18 to 13 per cent in men and has increased from 4 to 6 per cent in women (see Figure 48).

Wales

Data from the GHS reports on trends in drinking more than twice the recommended units on any one day for people in Wales. In men and women there is an increase from 1998 to 2002 and then a decline in recent years. Again, it is likely that these estimates would be affected by recent changes to

Figure 43: Trends in the proportion of men in England drinking more than eight units on any one day in the last week, 1998 to 2006, by age



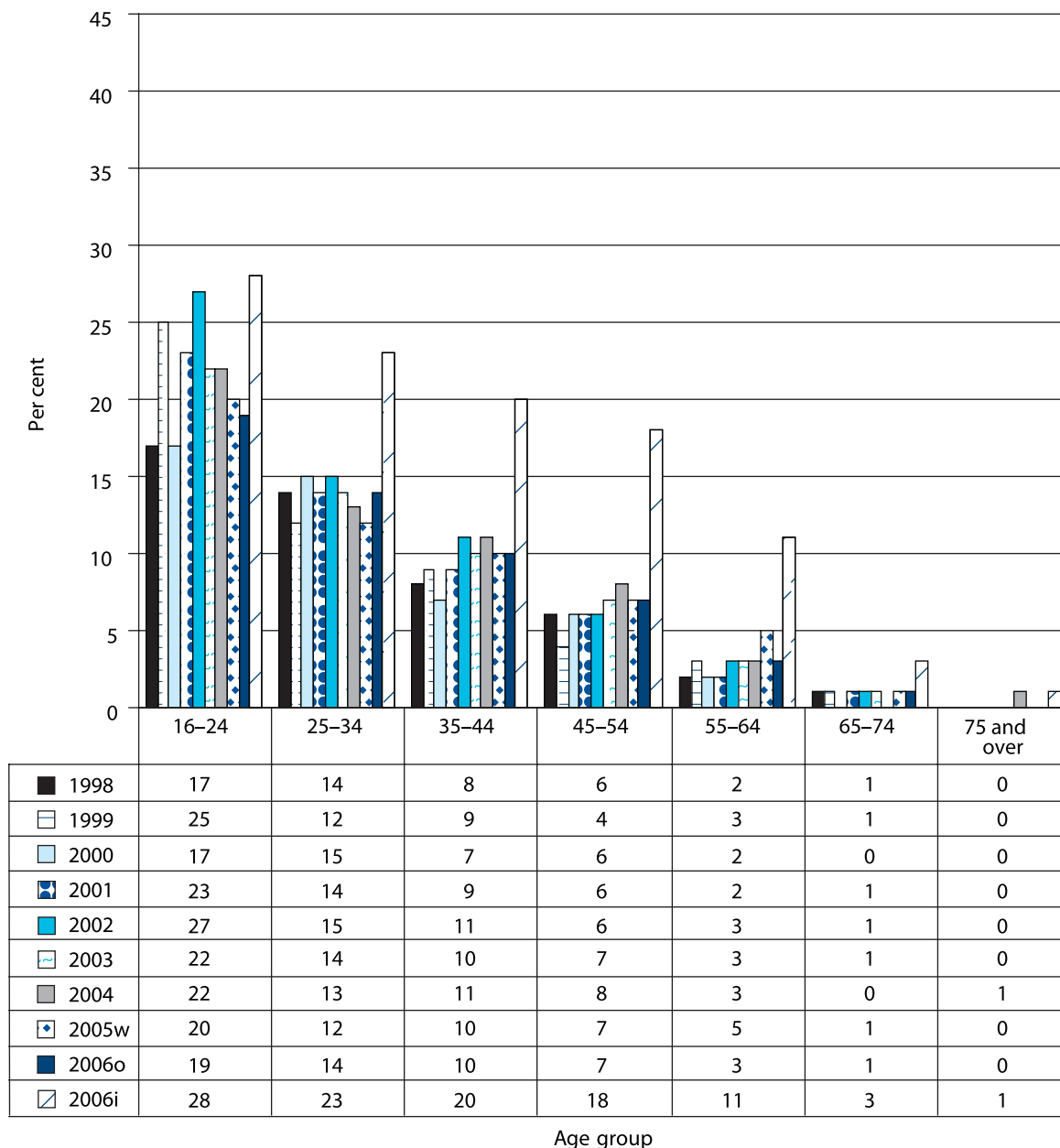
Outcome is >eight or >six units to tie in with the GHS definition and trend data has been recalculated to reflect this. w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Source: HSE, 2006 (National Statistics, 2006).

the method of calculation of an alcohol unit. They therefore represent an underestimate and may not be a true reduction (see Figures 37 and 38 earlier in this chapter). The WHS (Dolman *et al.*, 2007, 2008) used a different definition of binge drinking (the most units drunk on any one day in the past seven days) and showed no change in women or men from 2003 to 2007 (see Figure 49).

Taken together, these data suggest that levels of binge drinking among men in Great Britain

have remained fairly stable from 1998 to 2006. For women, the overall level of binge drinking has almost doubled from 8 per cent in 1998 to 15 per cent in 2006. The proportion of young men aged 16 to 24 years binge drinking has fallen from 39 per cent in 1998 to 30 per cent in 2006 despite taking into consideration revised methods for unit calculation. In older age groups, there was a steady increase over this period. For women, there was a sharp increase in binge drinking over this

Figure 44: Trends in the proportion of women in England drinking more than six units on any one day in the last week, 1998 to 2006, by age



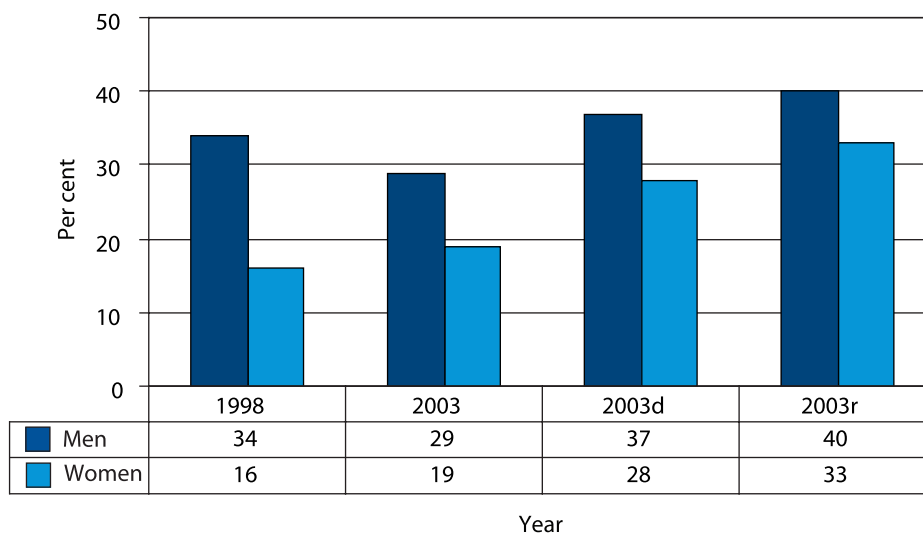
Outcome is >eight or >six units to tie in with the GHS definition and trend data has been recalculated to reflect this. w = data weighted from 1998; o = original method of calculating alcohol units; i = improved method. Source: HSE, 2006 (National Statistics, 2006).

period, especially in women aged 25 years and older.

Similar trends were observed for men and women in England. Limited data on trends in binge drinking was available for Scotland. Between 1998 and 2003, the proportion of men binge drinking has fallen; the decline was more apparent in young men aged 16 to 24 years. In women, an increase is seen for all age groups. Based on recent recalculations of 2003 data, taking into account

revised methods for unit calculation and a change in the definition of binge drinking to be consistent with other national surveys, the original values for 2003 for Scotland are likely to be underestimates. For men and women in Wales, there has been little change in the proportion of men and women binge drinking from 2003 to 2007.

Figure 45: Trends in the proportion of men in Scotland drinking at least eight units and women drinking at least six units on the heaviest drinking day in the last week, 1998 to 2003

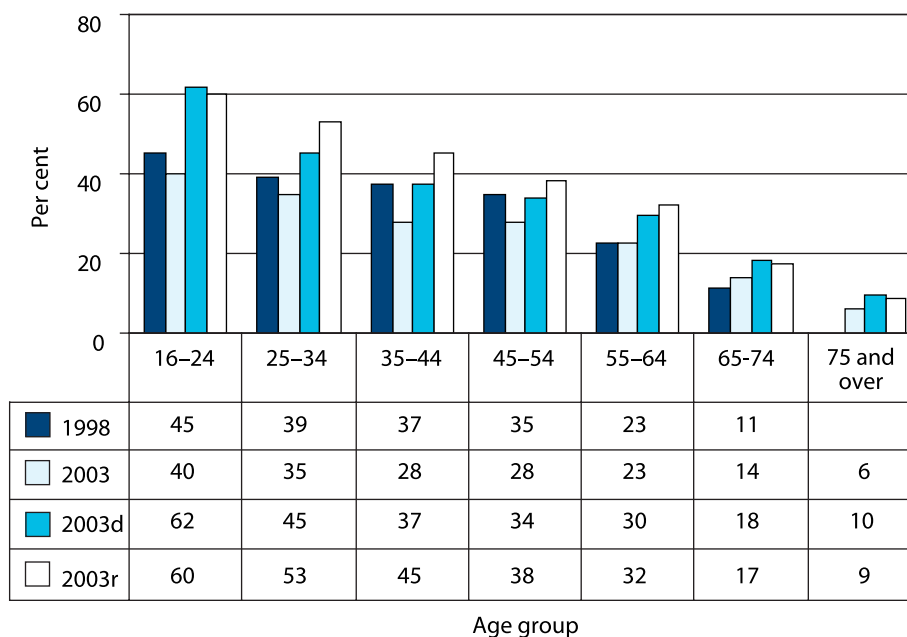


1998 and 2003 represents drinkers and non-drinkers

2003d represents people who drank in the past week; 2003r represents revised thresholds and unit conversion in people who drank in the last week.

Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 46: Trends in the proportion of men in Scotland drinking at least eight units on the heaviest drinking day in the last week, 1998 to 2003, by age

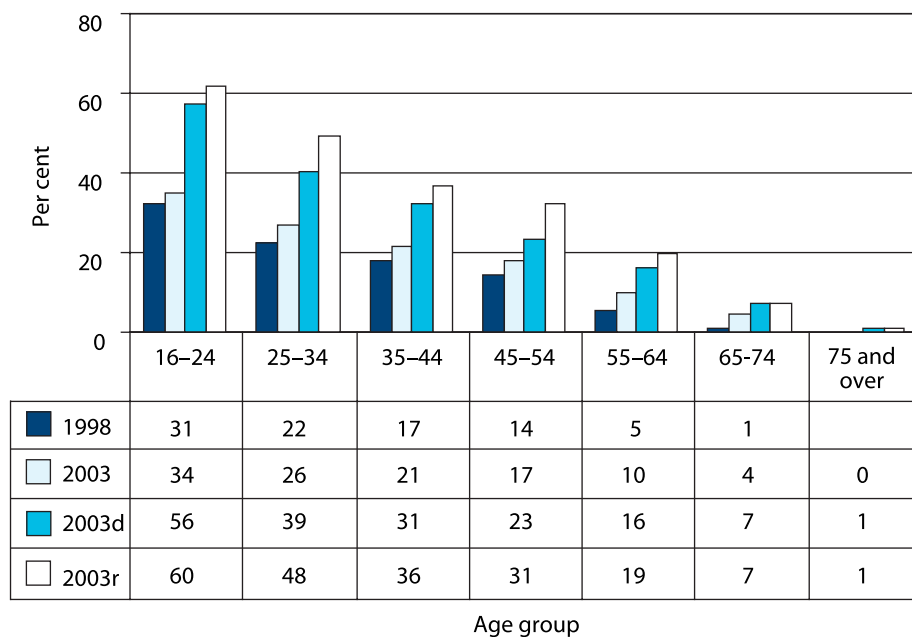


1998 and 2003 represents drinkers and non-drinkers

2003d represents people who drank in the past week; 2003r represents revised thresholds and unit conversion in people who drank in the last week.

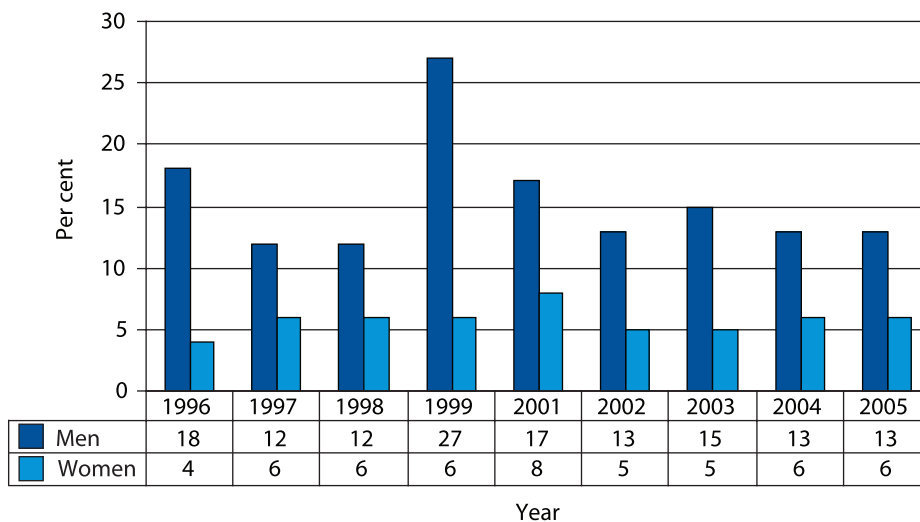
Source: SHS, 2005 (Bromley *et al.*, 2005, 2008).

Figure 47: Trends in the proportion of women in Scotland drinking at least six units on the heaviest drinking day in the last week, 1998 to 2003, by age



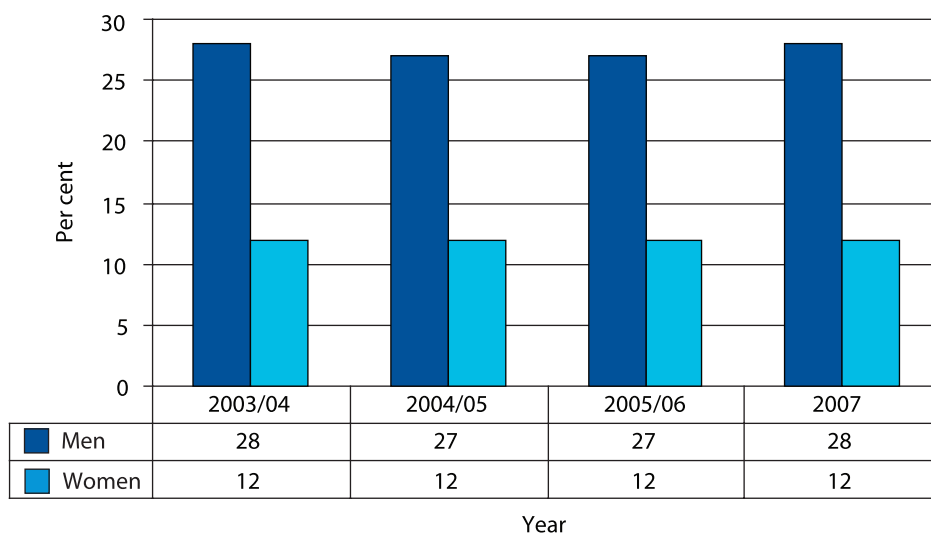
1998 and 2003 represents drinkers and non-drinkers
 2003d represents people who drank in the past week; 2003r represents revised thresholds and unit conversion in people who drank in the last week.
 Source: SHS, 2005 (Bromley *et al.*, 2005, 2008),

Figure 48: Trends in the proportion of men and women in Scotland reporting at least four binge drinking sessions in the last month, 1996 to 2005



Source: HEPS, 2005 (Gosling, 2005).

Figure 49: Trends in the proportion of men and women in Wales binge drinking, defined as the most units drunk on any one day in the past seven days



Participants were aged 16+ (drinkers and non-drinkers).
Source: WHS, 2007 (Dolman *et al.*, 2007, 2008).

Trends in drinking in young people

Proportion ever drunk alcohol

England

SDD (Fuller, 2006, 2008) and the HSE (National Statistics, 2006) provide data on trends in the proportion of young people drinking in England. SDD is a large national survey of secondary school children aged 11 to 15 years (Fuller, 2006, 2008). Data on alcohol consumption is ascertained by self-reported questionnaires filled out in the classroom. The HSE ascertains alcohol use using self-reported questionnaires that are filled out at home during the investigator visit with an interview to ascertain other health information (National Statistics, 2006).

In the SDD survey, the proportion of pupils who report ever having drunk a proper alcoholic drink has been variable overall (Fuller, 2006, 2008). Between 1988 and 2001, there was no clear pattern in either boys or girls. From 2001, the overall trend shows a small decrease from 62 to 54 per cent in 2007 in boys and from 60 to 54 per cent in girls (see Figure 50).

The trends described above are similar to those of children aged 8 to 15 years from the HSE (National Statistics, 2006) (see Figure 51). The age group covered in the survey includes children

from as young as 8 and there is a difference in the way that the question is asked so the overall proportions are much lower.

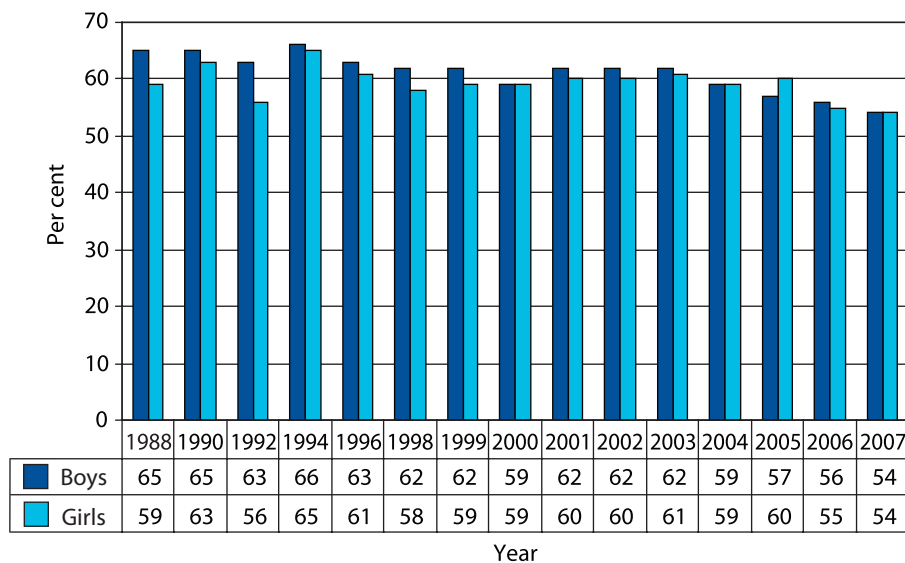
The HSE reports trends in the proportion of boys and girls aged 8 to 15 years who have ever had a proper alcoholic drink by age group (see Figure 52). Following rising trends from 1995 to 2003, there were reductions in recent years for all age groups. The proportion of boys aged 9, 13, 14 and 15 years ever having an alcoholic drink was higher in 2006 than in 1995.

The trends in girls were similar to those in boys, with increasing prevalence from 1995 until around 2003 followed by a reduction in the proportion of girls ever having had an alcoholic drink (see Figure 53). The proportion of 8-, 13- and 15-year-old girls ever having had an alcoholic drink is slightly higher in 2006 than in 1998.

Northern Ireland

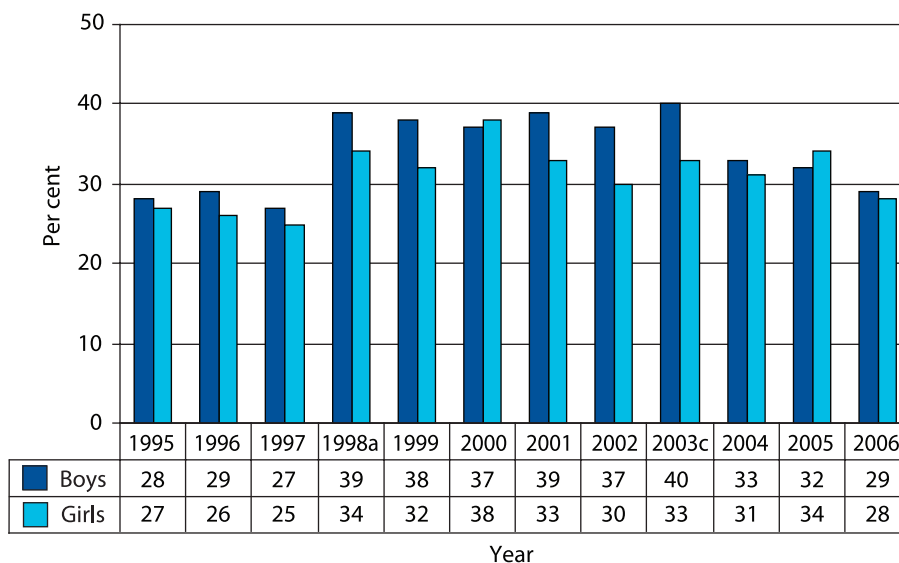
Trends in drinking prevalence for Northern Ireland are provided by a secondary analysis using two different surveys – the HBSC and the YPBAS (Health Promotion Agency for Northern Ireland and Irish Temperance League, 2005). The proportion of 11 to 15 year olds for Northern Ireland is difficult to interpret because of the different surveys that have been used to compile the trend data. For HBSC, the question asked was ‘have you ever tasted a

Figure 50: Trends in the proportion of 11 to 15 year olds in England who have ever had a proper alcoholic drink, 1988 to 2007, by gender



Two-year time period between 1988 and 1998 is different from subsequent years.
 Source: SDD, 2007 (Fuller, 2006, 2008).

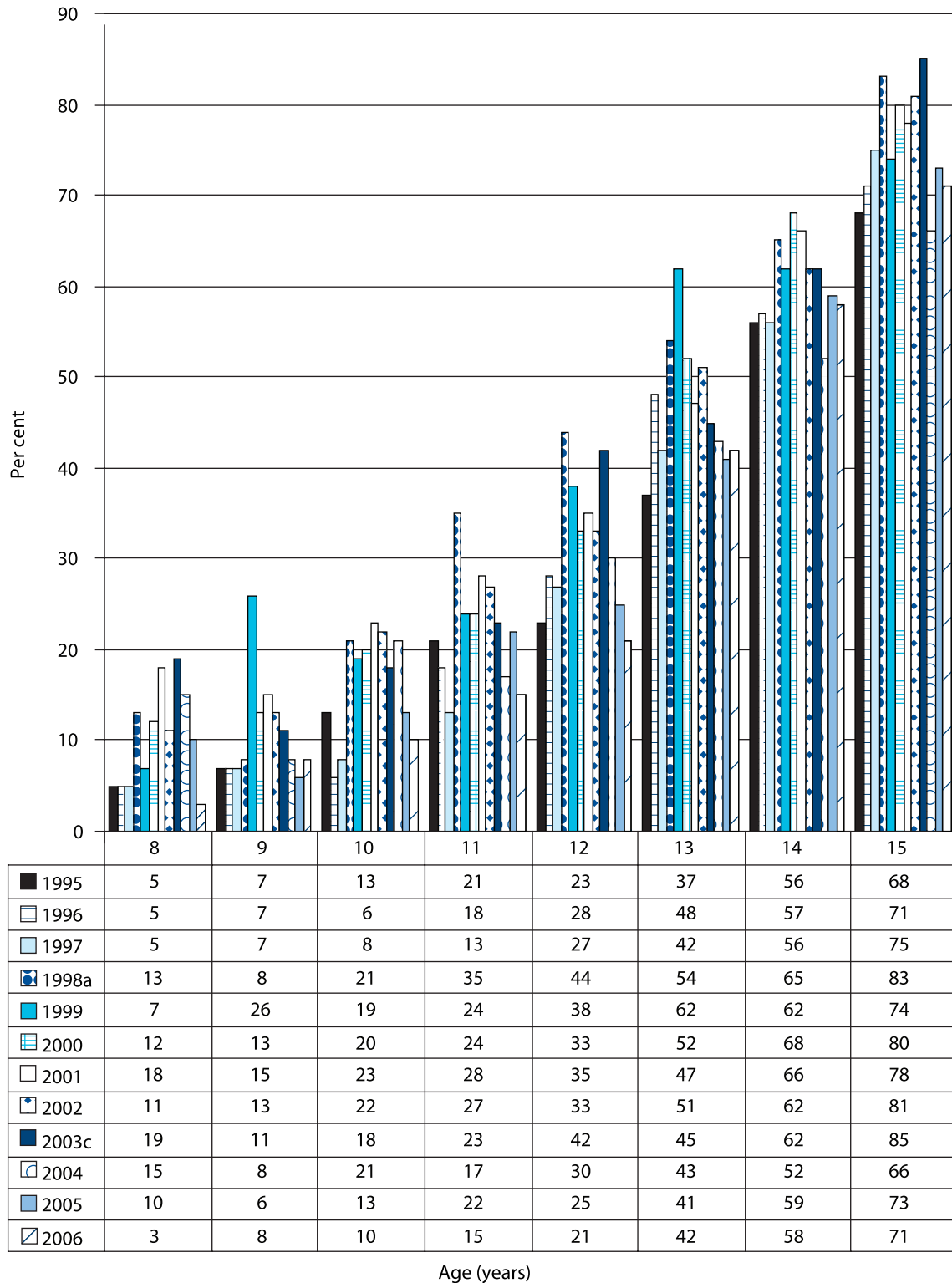
Figure 51: Trends in the proportion of 8 to 15 year olds in England who have ever had a proper drink, 1995 to 2006, by gender



a = results based on all children who answered yes to the question about ever having had a proper drink, but do not include those who said no and said yes to the question on drinking alcopops, i.e. original pre-1998 question and not the same as question asked in SDD. c = all years weighted to adjust for selection probability, from 2003 non-response weighting introduced.

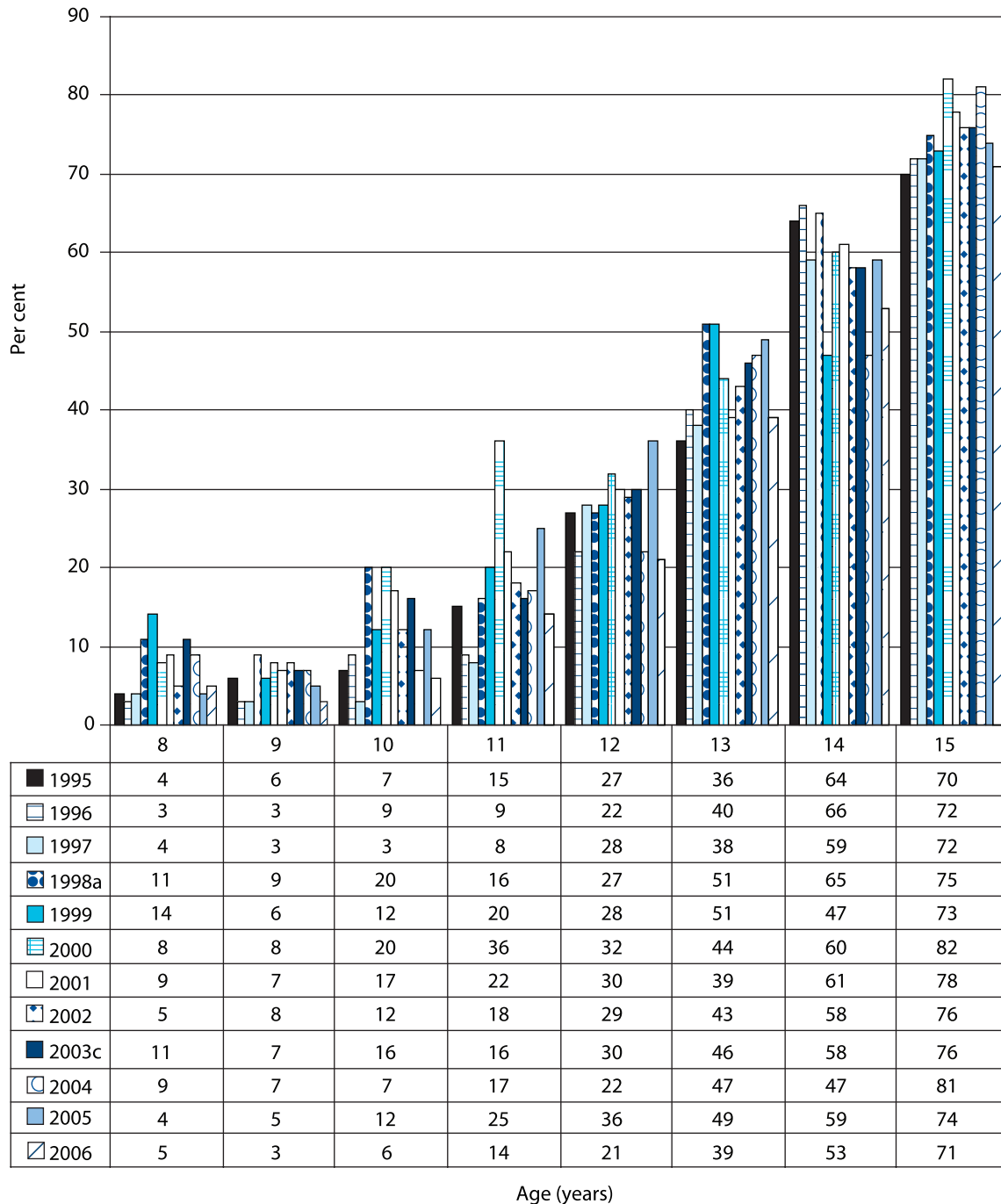
Source: HSE, 2006 (National Statistics, 2006).

Figure 52: Trends in the proportion of 8- to 15-year-old boys in England who have ever had a proper alcoholic drink, 1995 to 2006, by age



a = results based on all children who answered yes to the question about ever having had a proper drink, but do not include those who said no and said yes to question on drinking alcopops, i.e. original pre-1998 question, and not the same as SDD. c = all years weighted to adjust for selection probability, from 2003 non-response weighting introduced. Source: HSE, 2006 (National Statistics, 2006).

Figure 53: Trends in the proportion of 8- to 15-year-old girls in England who have ever had a proper alcoholic drink, 1995 to 2006, by age



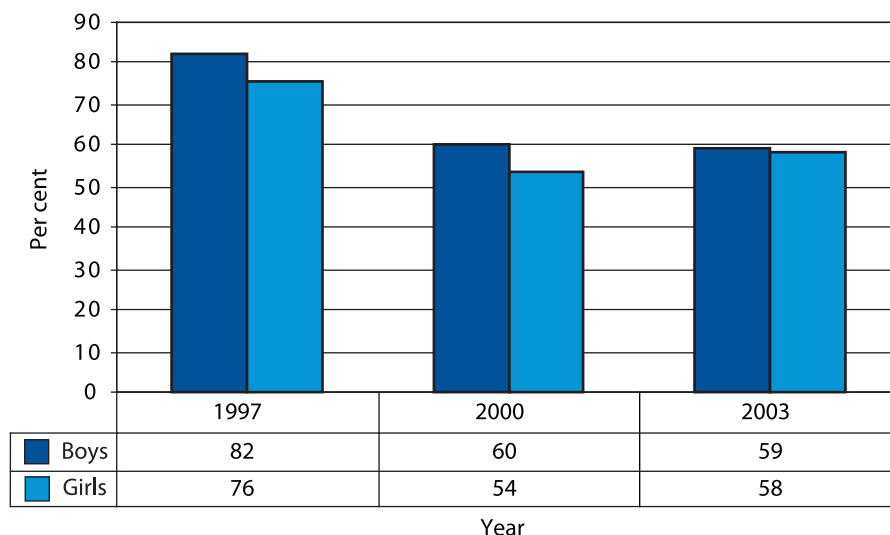
a = results based on all children who answered yes to the question about ever having had a proper drink, but do not include those who said no and said yes to question on drinking alcopops, i.e. original pre-1998 question and not the same as SDD. c = all years weighted to adjust for selection probability, from 2003 non-response weighting introduced. Source: HSE, 2006 (National Statistics, 2006).

drink?', whereas, in YPBAS, it is 'have you ever taken a drink, not just a taste or a sip?' (see Figure 54).

It is unclear if the lower proportions seen in boys and girls aged 11 to 15 years for 2000

and 2003 compared with 1997 are due to a true subsequent decrease in the proportion ever having had an alcoholic drink or reflect the difference in style of question (see Figure 55). Data was not given separately for each gender.

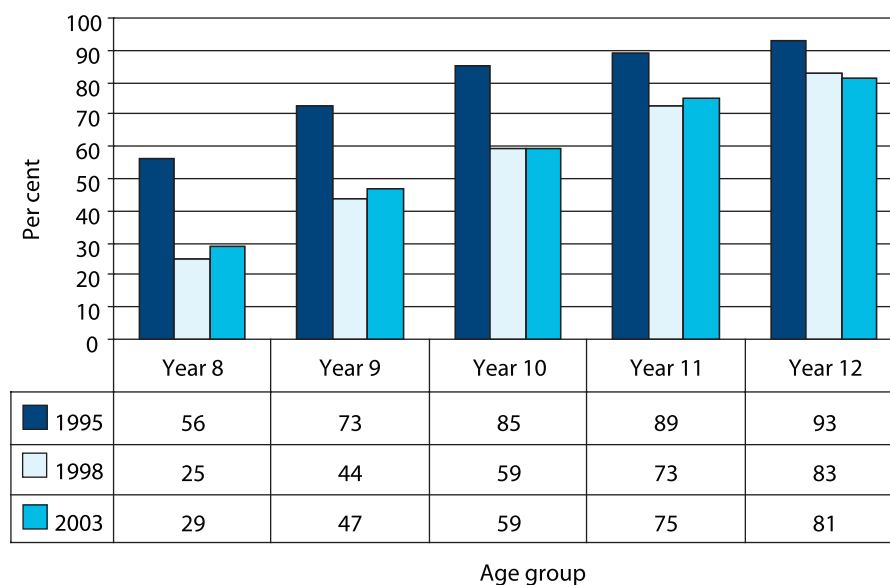
Figure 54: Trends in the proportion of 11 to 15 year olds in Northern Ireland who have ever had a proper drink, 1997 to 2003, by gender



1997 HSBC = 'have you ever tasted a drink?'; 2000 and 2003 YPBAS = 'have you ever taken a drink, not just a taste or a sip?'

Source: Health Promotion Agency for Northern Ireland and Irish Temperance League (2005).

Figure 55: Trends in proportion of boys and girls in Northern Ireland aged 11 to 16 years who have ever had a proper alcoholic drink, 1997 to 2003, by age



Year 8 includes 11 to 12 year olds; year 9 includes 12 to 13 year olds; year 10 includes 13 to 14 year olds; year 11 includes 14 to 15 year olds; and year 12 includes 15 to 16 year olds.

Source: Health Promotion Agency for Northern Ireland and Irish Temperance League (2005).

Scotland

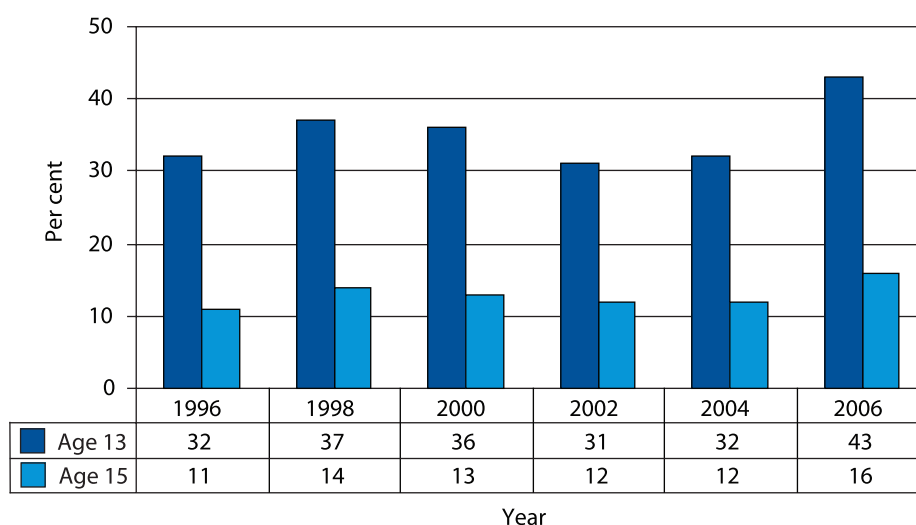
SALSUS (Maxwell *et al.*, 2006) and the SHS (Bromley *et al.*, 2005) provide data on trends in drinking in Scotland. SALSUS reports the proportion of 13 and 15 year olds who have never had a proper drink (Maxwell *et al.*, 2006) and the SHS reports the proportion of 8 to 15 year olds that have ever had a proper drink (Bromley *et al.*, 2005).

The proportion of boys and girls aged 13 years who have never had a drink changed little between 1996 and 2004, then showed a sudden increase

from 2004 to 2006. This pattern is also shown for 15 year olds with a more modest increase from 2004 to 2006. Overall, the proportion increased from 32 to 43 per cent between 1996 and 2006 in 13 year olds and from 11 to 16 per cent in 15 year olds (see Figure 56).

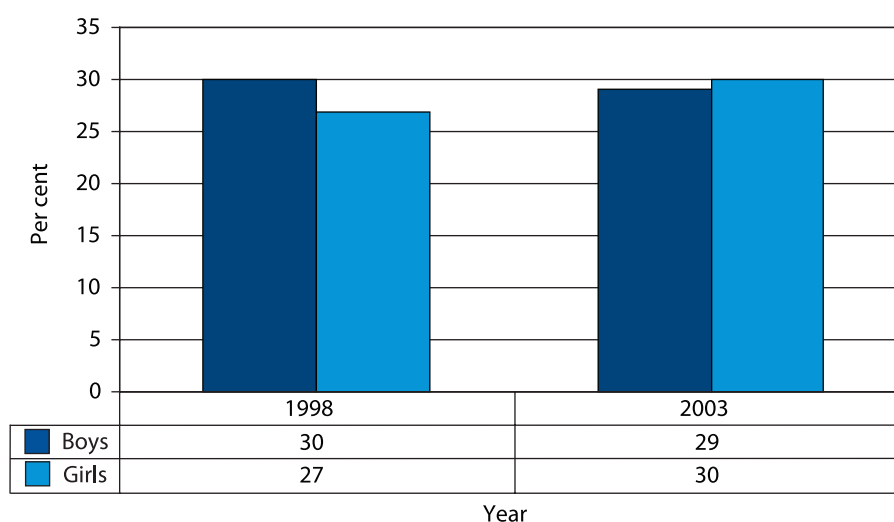
There is limited data on trends in the proportion of 8 to 15 year olds who have ever had a proper drink available from the SHS. From 1998 to 2003, there has been an increase in girls from 27 to 30 per cent and a decrease from 30 to 29 per cent in boys (see Figure 57).

Figure 56: Trends in the proportion of 13 and 15 year olds in Scotland who have never had a proper alcoholic drink, 1996 to 2006, by gender



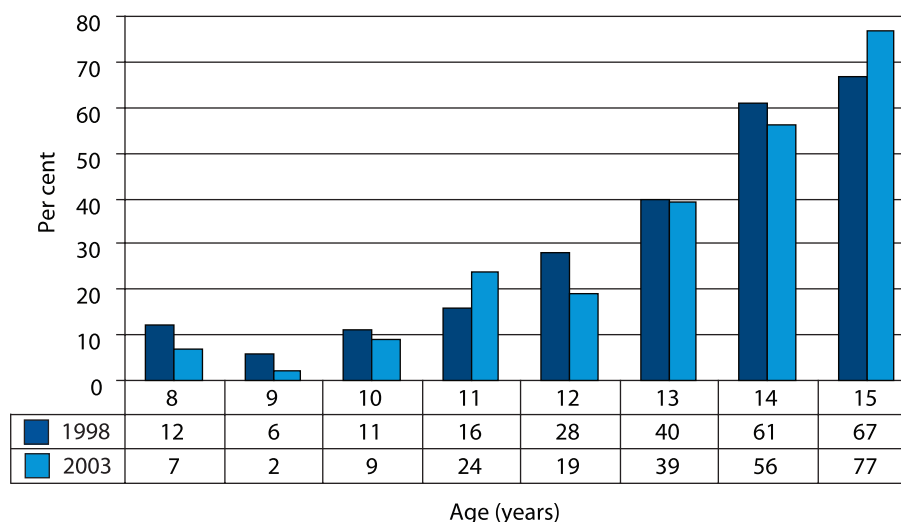
Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 57: Trends in the proportion of 8- to 15-year-old boys and girls in Scotland who have ever had a proper alcoholic drink, 1998 to 2003, by gender



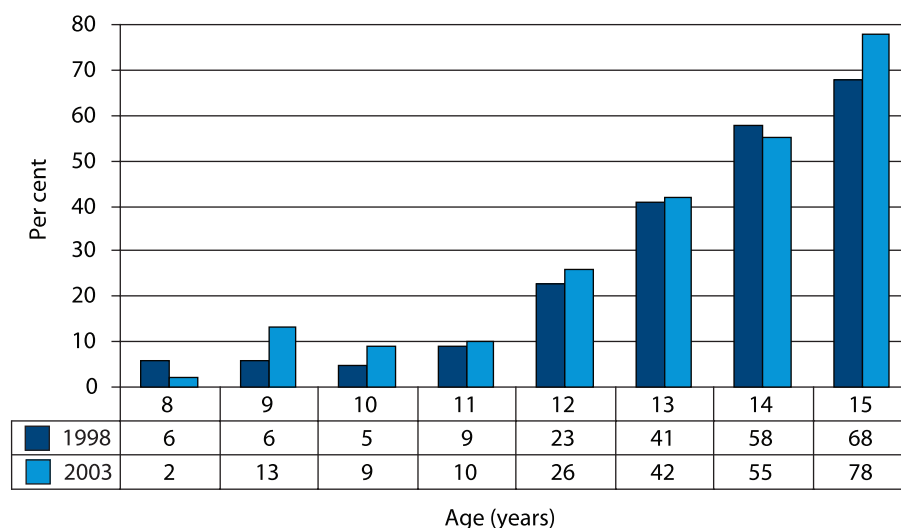
Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 58: Trends in the proportion of boys aged 8 to 15 years in Scotland who have ever had a proper alcoholic drink, 1998 to 2003, by age



Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 59: Trends in the proportion of girls aged 8 to 15 years in Scotland who have ever had a proper alcoholic drink, 1998 to 2003, by age



Source: SHS, 2005 (Bromley *et al.*, 2005).

In boys there was a decrease in most age groups, but an increase from 1998 to 2003 in 11 and 15 year olds (see Figure 58).

In girls there was an increase in all age groups apart from 8 and 14 year olds, which decreased (see Figure 59).

Similar trends for England, Northern Ireland and Scotland were shown across the various national surveys. Prevalence of 'ever' drinking decreased in boys and girls aged 8 to 15 years in England from 2002 to 2007. An increase in 'never' drinkers in boys and girls aged 13 and 15

in Scotland was shown in one survey (SALSUS), with an increase in 'ever' drinking in girls aged 8 to 15, but a slight reduction in boys in the SHS. The slight reduction of 'ever' drinking occurred across boys of most ages (bar 11 and 15 year olds) and the increase of 'ever' drinking occurred in girls of all ages (bar 8 and 14 year olds). Data for Northern Ireland was difficult to interpret because of the slight differences in survey questions, but a reduction was shown in children aged 11 to 15 years from 1997 to 2003.

Drinking frequency

United Kingdom

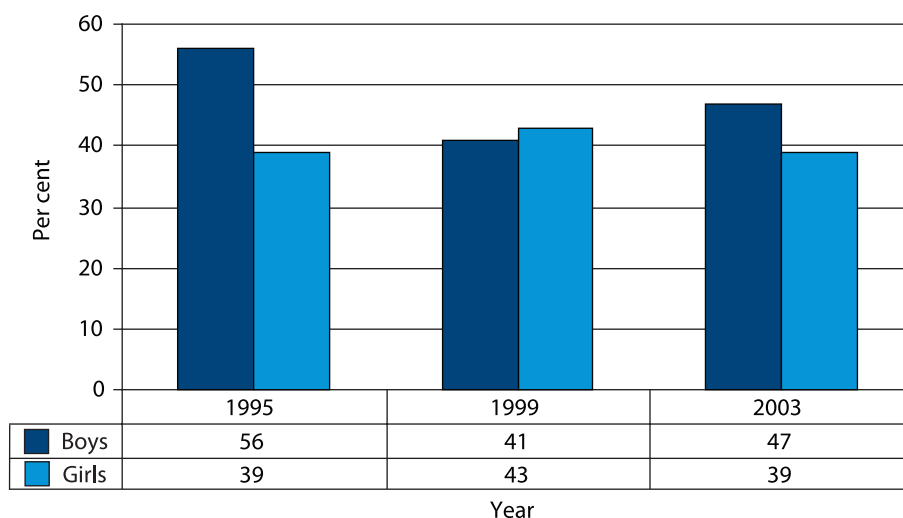
Data for trends in drinking in young people in the UK is provided by the ESPAD study (Hibell *et al.*, 2004). Disaggregated data for each constituent country is not possible because of funding restrictions for this survey.

The proportion of 15- to 16-year-old boys drinking 40 times or more in their lifetime decreased from 56 to 41 per cent and then rose

to 47 per cent between 1995 and 2003. In girls it increased from 39 to 43 per cent and then dropped to 39 per cent between 1995 and 2003 (see Figure 60).

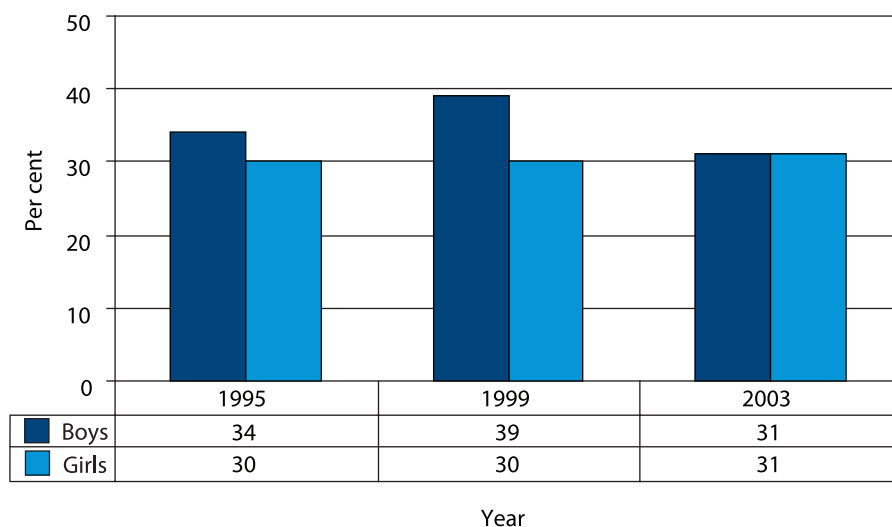
Trends in the proportion of pupils drinking 20 times or more in the last 12 months show less change than the proportions drinking 40 times or more in their lifetime. Between 1995 and 2003, for boys there was a decrease from 34 to 31 per cent and for girls a slight increase from 30 to 31 per cent (see Figure 61).

Figure 60: Trends in the proportion of pupils aged 15 to 16 in the UK years who drank 40 times or more in their lifetime, 1995 to 2003, by gender



Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 61: Trends in the proportion of pupils aged 15 to 16 years in the UK who drank 20 times or more in the last 12 months, 1995 to 2003, by gender



Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Heavier alcohol use of ten times or more in the last 30 days is less common, and has increased slightly in boys and girls aged 15 to 16 years. Between 1995 and 2003, the proportion increased from 16 to 18 per cent in boys and from 11 to 15 per cent in girls (see Figure 62).

Proportion drinking in the last week

England

The SDD survey shows the trends in the proportion of girls and boys who have drunk alcohol in the last week, which are similar to the trends for ever having drunk alcohol (Fuller, 2006, 2008). There has been a reduction in recent years from 2001 to 2007 following fluctuating trends from 1988 to 2001 in boys (see Figure 63). The pattern of fluctuating but generally increasing trends followed by a reduction from 2001 onwards is seen for all age groups of boys, with the changes more marked in the older age bands (see Figure 64).

In girls the patterns are similar to patterns in boys, with fluctuating trends from 1988 to 2001 and a subsequent decline in the proportion of girls drinking in the last week from 2001 to 2007 (see Figure 65). The difference in prevalence of last-week drinking between girls and boys has become smaller over the last 20 years and, in 2007, the prevalence is identical (see Figure 63). Also, the changes over time are more marked in the older age bands compared with the two younger age groups (see Figure 65).

The HBSC survey shows the trends in the proportion of 11- to 15-year-old girls and boys who drink alcohol at least once a week. Following an initial increase from 1998, there has been a decline in 2006 in boys (see Figure 66) and girls (see Figure 67).

Scotland

Three studies report on drinking in the last week in young people in Scotland: SALSUS (Maxwell *et al.*, 2006), SHS (Bromley *et al.*, 2005) and HBSC (World Health Organization, www.hbsc.org/). Trends for pupils aged 13 and 15 years are reported for 1990 to 2006 by the SALSUS study (Maxwell *et al.*, 2006). Across both age groups, in boys and girls combined, the proportion who drank in the last week increased between 1990

and 1998, reached a peak in 2002 following a slight dip in 2000 and has declined since. The overall trend in both age groups from 1990 to 2006 shows an increase (see Figure 68).

The trend has been for more boys to report drinking in the last week (see Figure 69), but from 2004 to 2006 the proportion of girls drinking is slightly higher, and the overall increase from 1990 to 2006 is greater in 13- and 15-year-old girls (see Figure 70).

The HBSC survey shows the trends in the proportion of 11- to 15-year-old girls and boys who drink alcohol at least once a week in Scotland. Following an initial increase from 1990 to 1998, there has been a decline in 2006 in both boys (see Figure 71) and girls (see Figure 72) in all age groups.

Data is available only for 1998 and 2003 from the SHS (Bromley *et al.*, 2005), and shows no change in the proportion of 8- to 15-year-old boys or girls drinking at least once a week (see Figure 73).

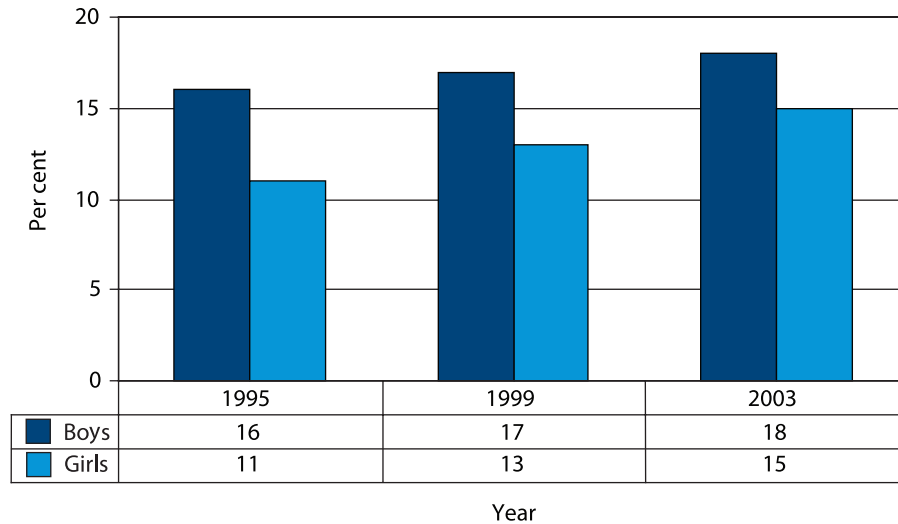
Although, there is insufficient data to draw any firm conclusions about trends by age groups, there is a rise in the proportion of 14- and 15-year-old boys and girls drinking at least once a week reported in the SHS (see Figures 74 and Figure 75).

Wales

Trends for pupils aged 11 to 16 years are reported for 1988 to 2006 by the HBSC study (World Health Organization, www.hbsc.org/). Up to 2002, a screening question first asked whether pupils had ever tasted drinks containing alcohol. Those responding yes were then asked how frequently they drink alcohol and response categories included 'at least once a week'. In 2002, the screening question was eliminated and the question was amended to ask how often alcohol is drunk and response categories included 'every week'. Consequently, because of a slight difference in the wording of the question, data before 2002 is not directly comparable with data for 2002 onwards.

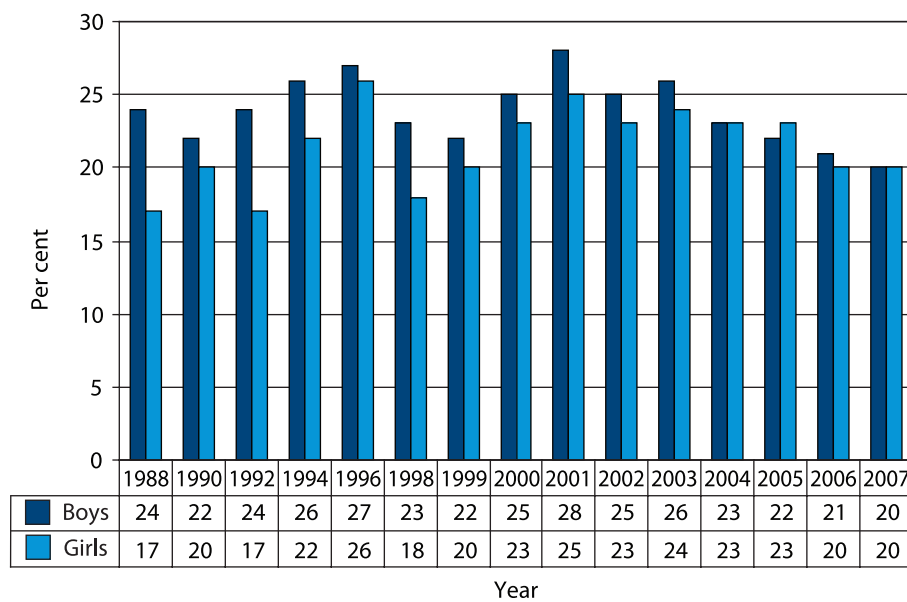
Across each age group in boys, the proportion who reported weekly drinking increased from 1988, reached a peak in 1996 and declined in subsequent years. Boys 13 to 14 years old are the only age group where weekly drinking is more prevalent in 2006 compared with 1988 (see Figure 76). A similar trend is seen in girls with

Figure 62: Trends in the proportion of pupils aged 15 to 16 years in the UK who drank ten times or more in the last 30 days, 1995 to 2003, by gender



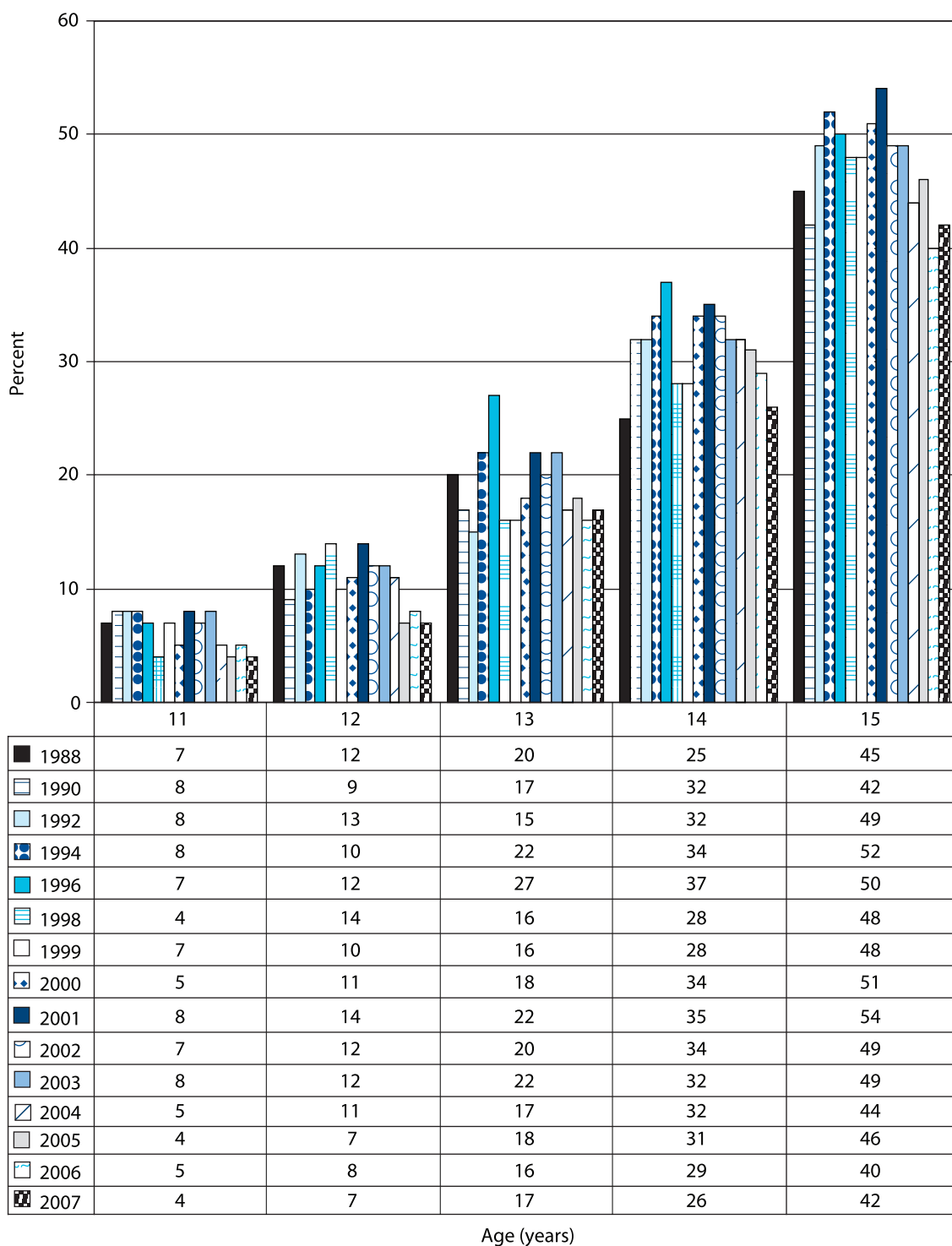
Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 63: Trends in the proportion of boys and girls aged 11 to 15 years in England who drank in the last week, 1988 to 2007, by gender



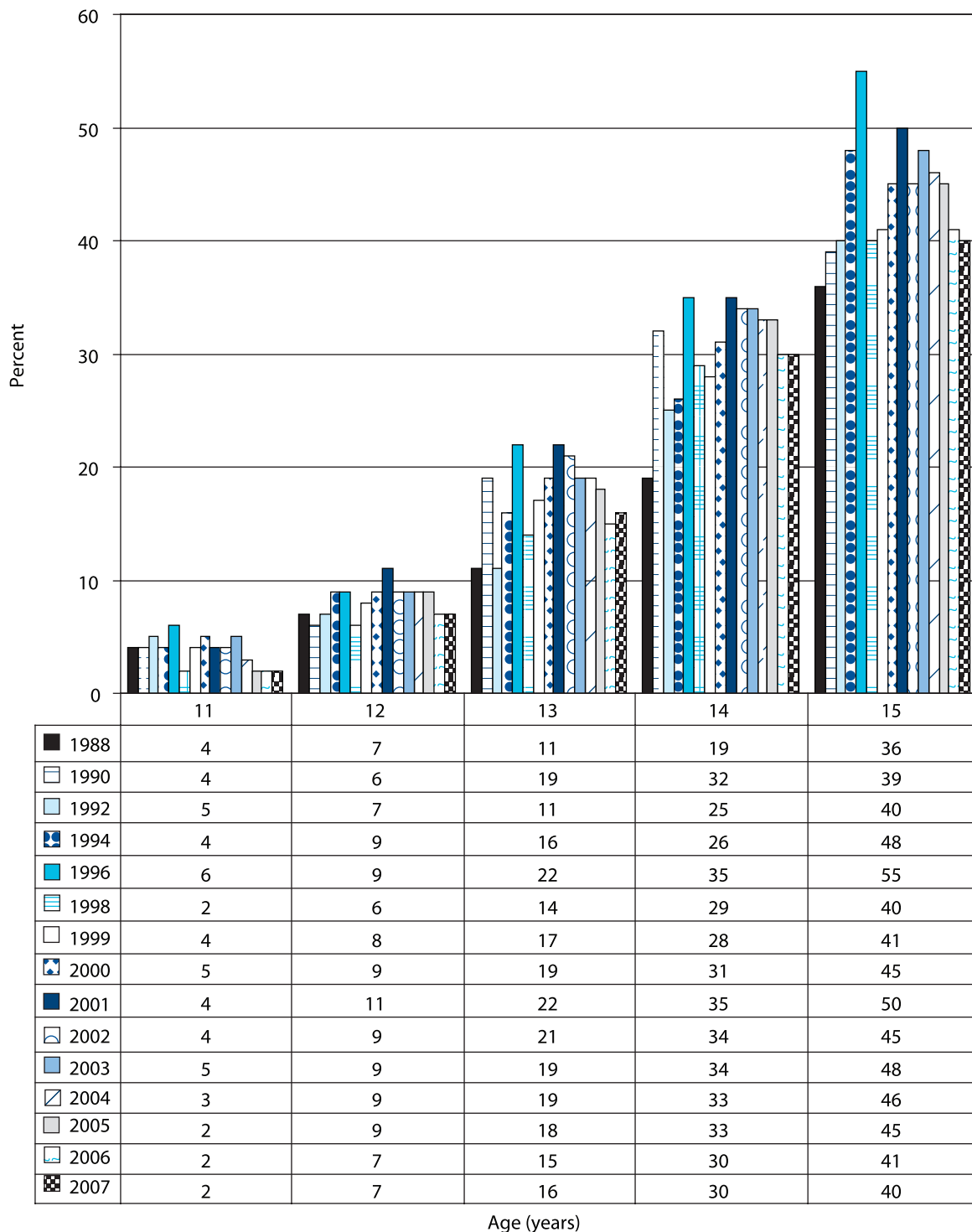
Two-year time periods in the years between 1988 and 1998 is not the same as time period between other years.
Source: SDD, 2007 (Fuller, 2008).

Figure 64: Trends in the proportion of boys aged 11 to 15 years in England who drank in the last week, 1988 to 2007, by age



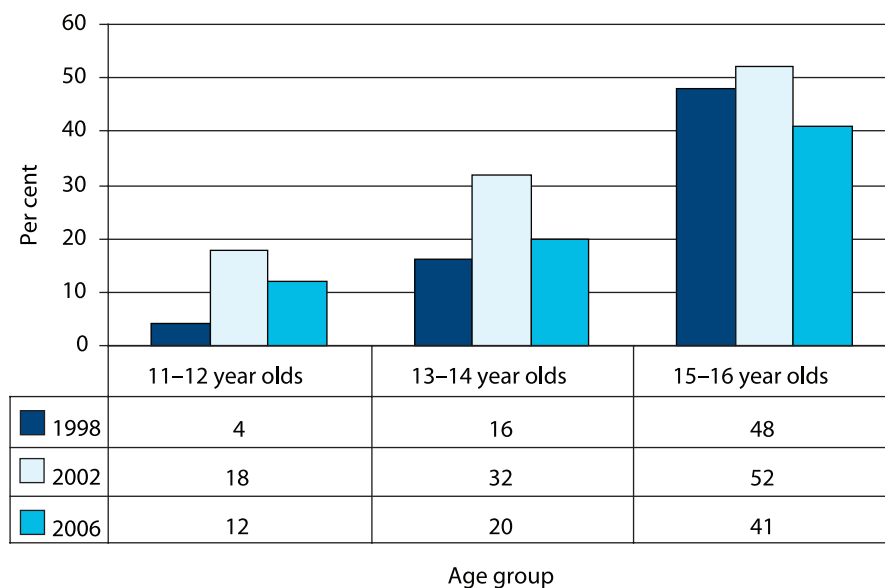
Two-year time periods in the years between 1988 and 1998 is not the same as time period between other years.
 Source: SDD, 2007 (Fuller, 2008).

Figure 65: Trends in the proportion of girls aged 11 to 15 years in England who drank in the last week, 1988 to 2007, by age



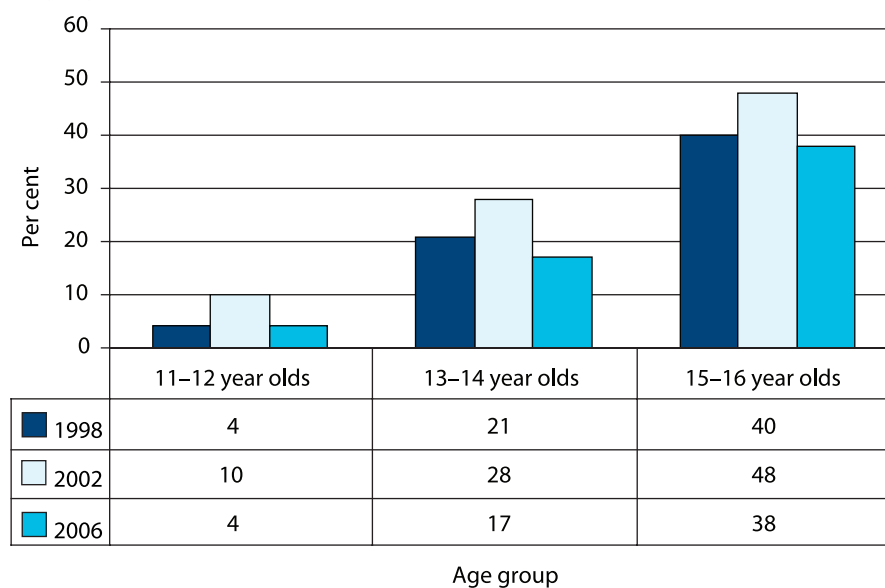
Two-year time periods in the years between 1988 and 1998 is not the same as time period between other years.
 Source: SDD, 2007 (Fuller, 2008).

Figure 66: Trends in the proportion of boys aged 11 to 15 years in England who drank in the last week, 1998 to 2006, by age group



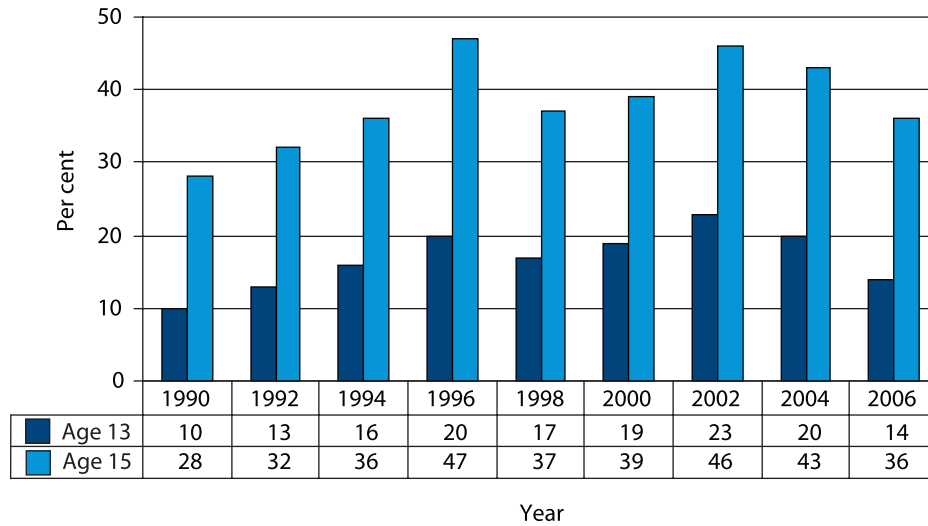
Source: HBSC, 2006 (World Health Organization, www.hbsc.org/).

Figure 67: Trends in the proportion of girls aged 11 to 15 years in England who drank in the last week, 1998 to 2006, by age group



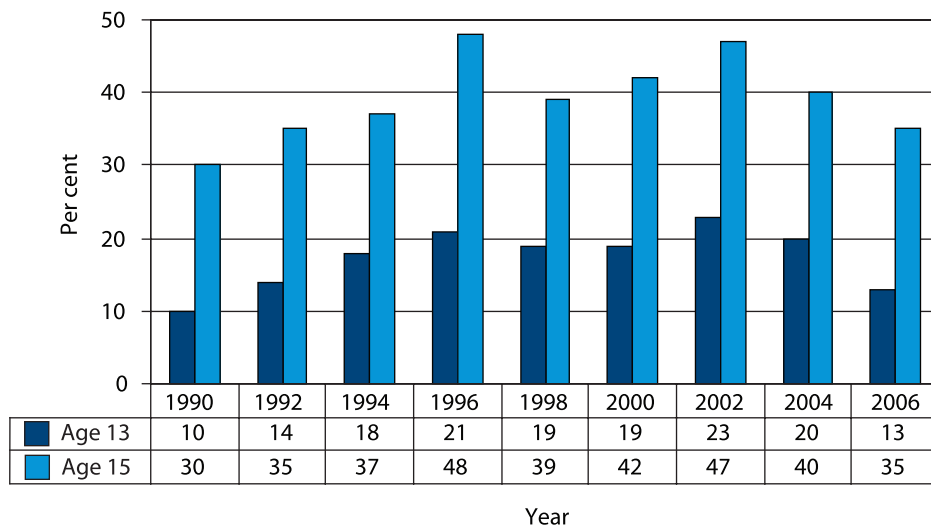
Source: HBSC, 2006 (World Health Organization, www.hbsc.org/).

Figure 68: Trends in the proportion of boys and girls aged 13 and 15 years in Scotland who drank in the last week 1990 to 2006, by age



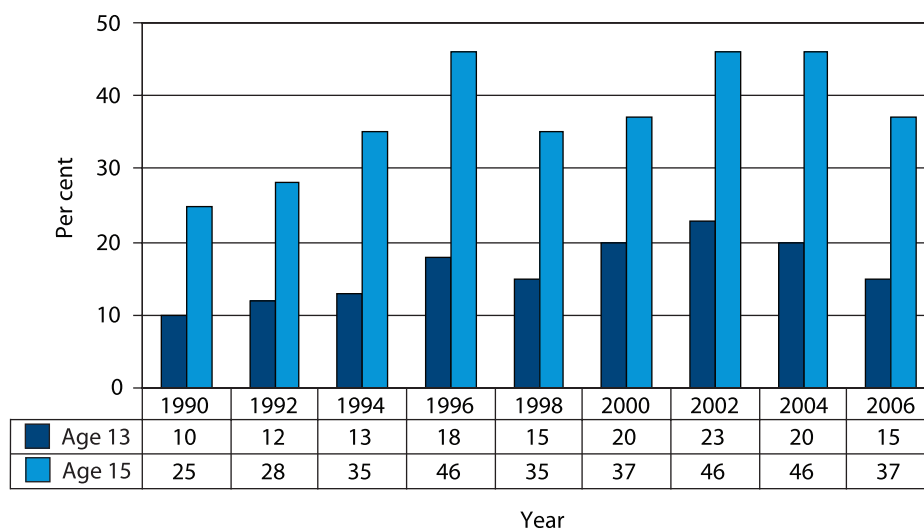
Source: SALSUS (Maxwell *et al.*, 2006).

Figure 69: Trends in the proportion of boys aged 13 and 15 years in Scotland who drank in the last week, 1990 to 2006, by age



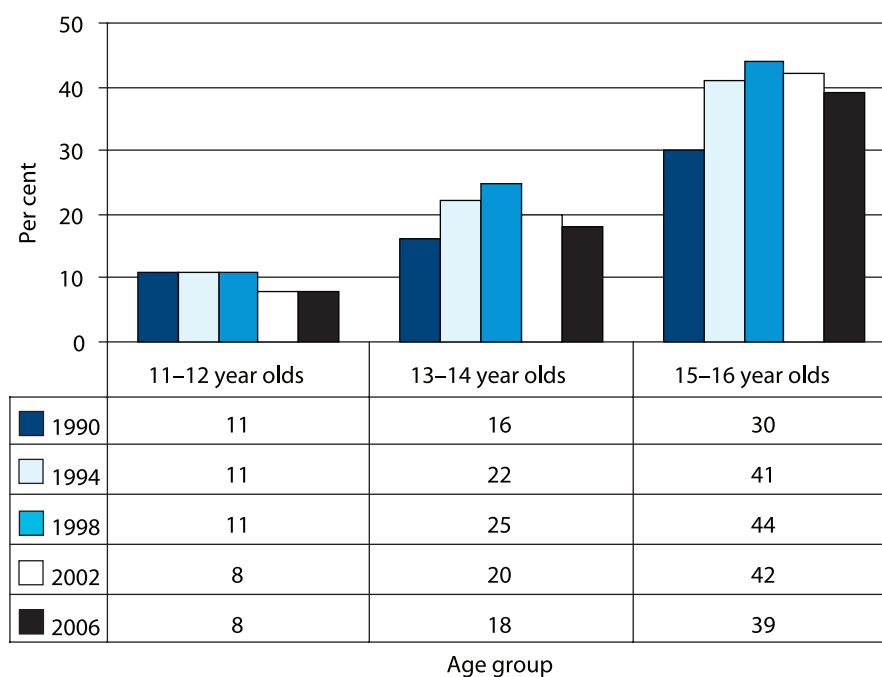
Source: SALSUS (Maxwell *et al.*, 2006).

Figure 70: Trends in the proportion of girls aged 13 and 15 years in Scotland who drank in the last week, 1990 to 2006, by age



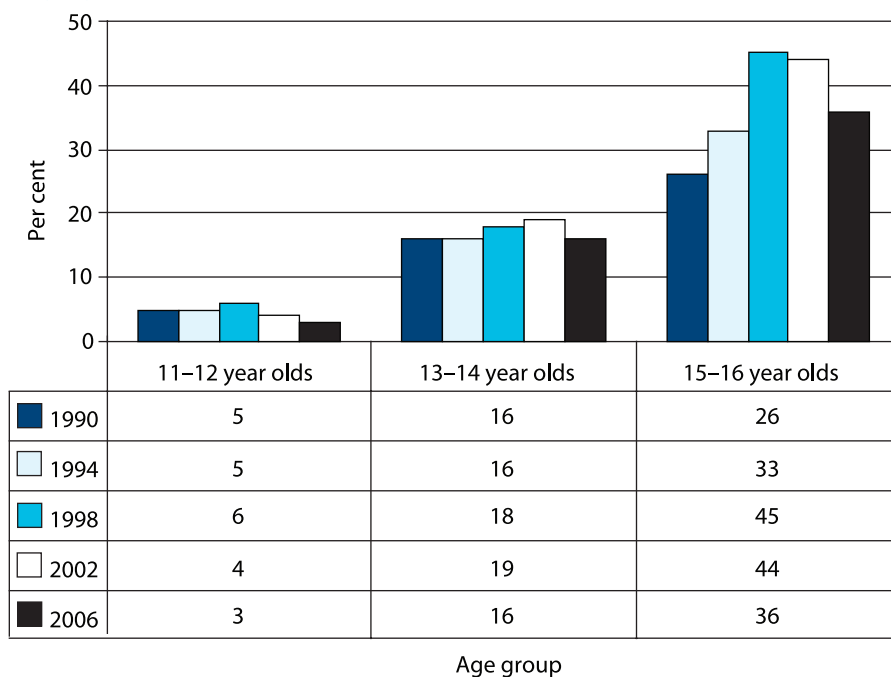
Source: SALSUS (Maxwell *et al.*, 2006).

Figure 71: Trends in the proportion of boys aged 11 to 15 years in Scotland who drank in the last week, 1990 to 2006, by age group



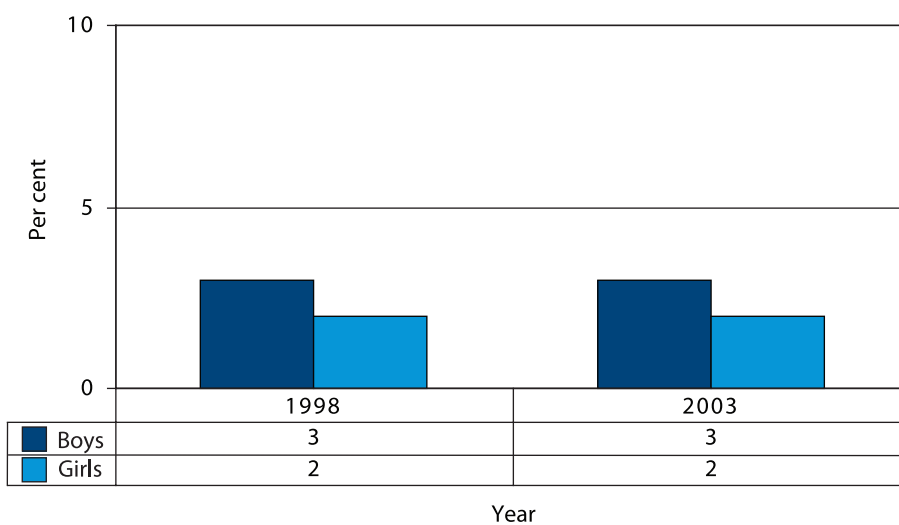
Source: HBSC, 2006 (World Health Organization, www.hbsc.org/).

Figure 72: Trends in the proportion of girls aged 11 to 15 years in Scotland who drank in the last week, 1990 to 2006, by age group



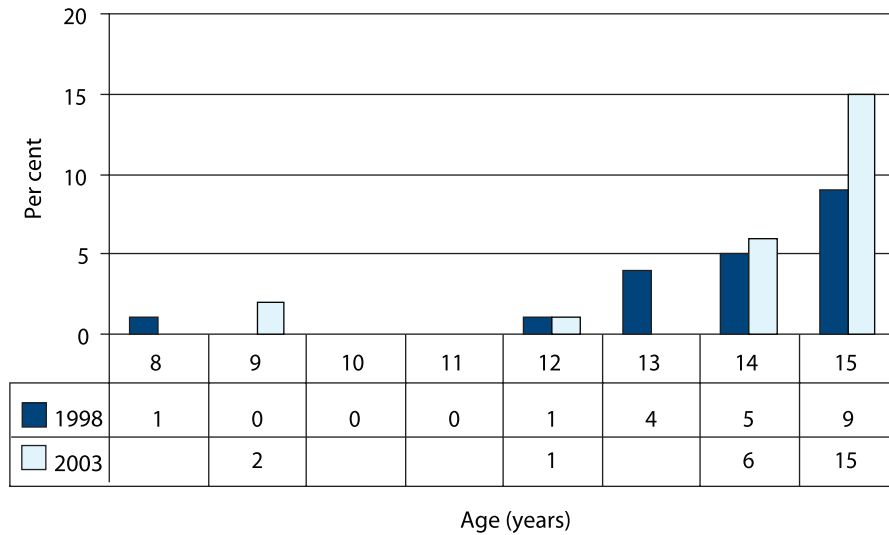
Source: HBSC, 2006 (World Health Organization, www.hbsc.org/).

Figure 73: Trends in the proportion of young people aged 8 to 15 years in Scotland who drink at least once a week, 1998 to 2003, by gender



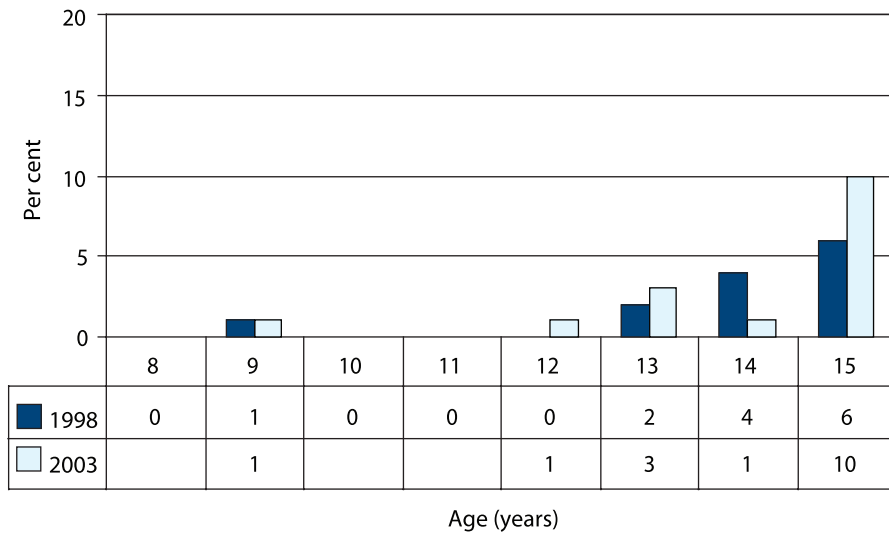
Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 74: Trends in the proportion of boys aged 8 to 15 years in Scotland who drink at least once a week, 1998 to 2003, by age



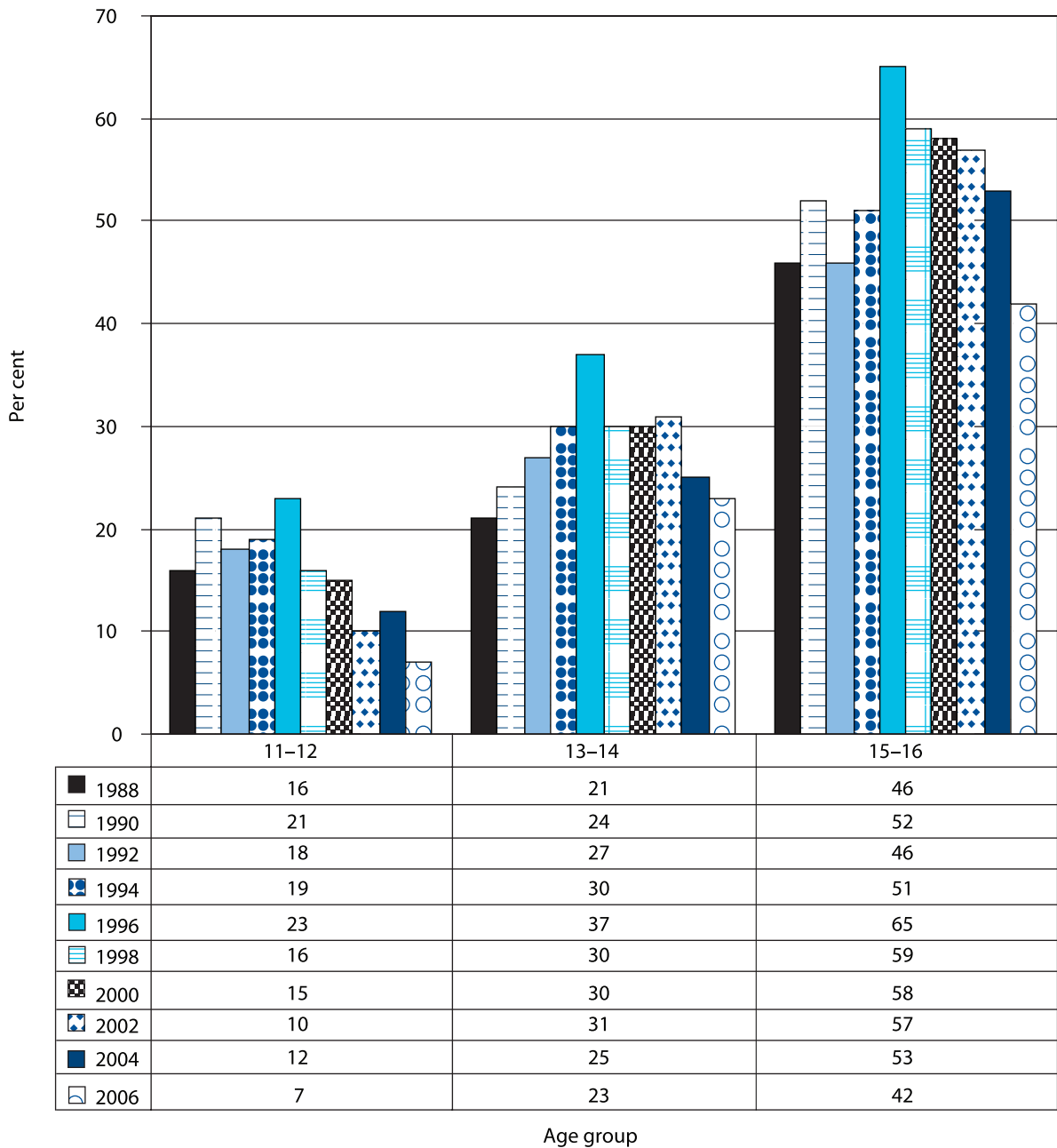
Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 75: Trends in the proportion of girls aged 8 to 15 years in Scotland who drink at least once a week, 1998 to 2003, by age



Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 76: Trends in the proportion of boys aged 11 to 16 in Wales drinking every week, 1988 to 2006, by age



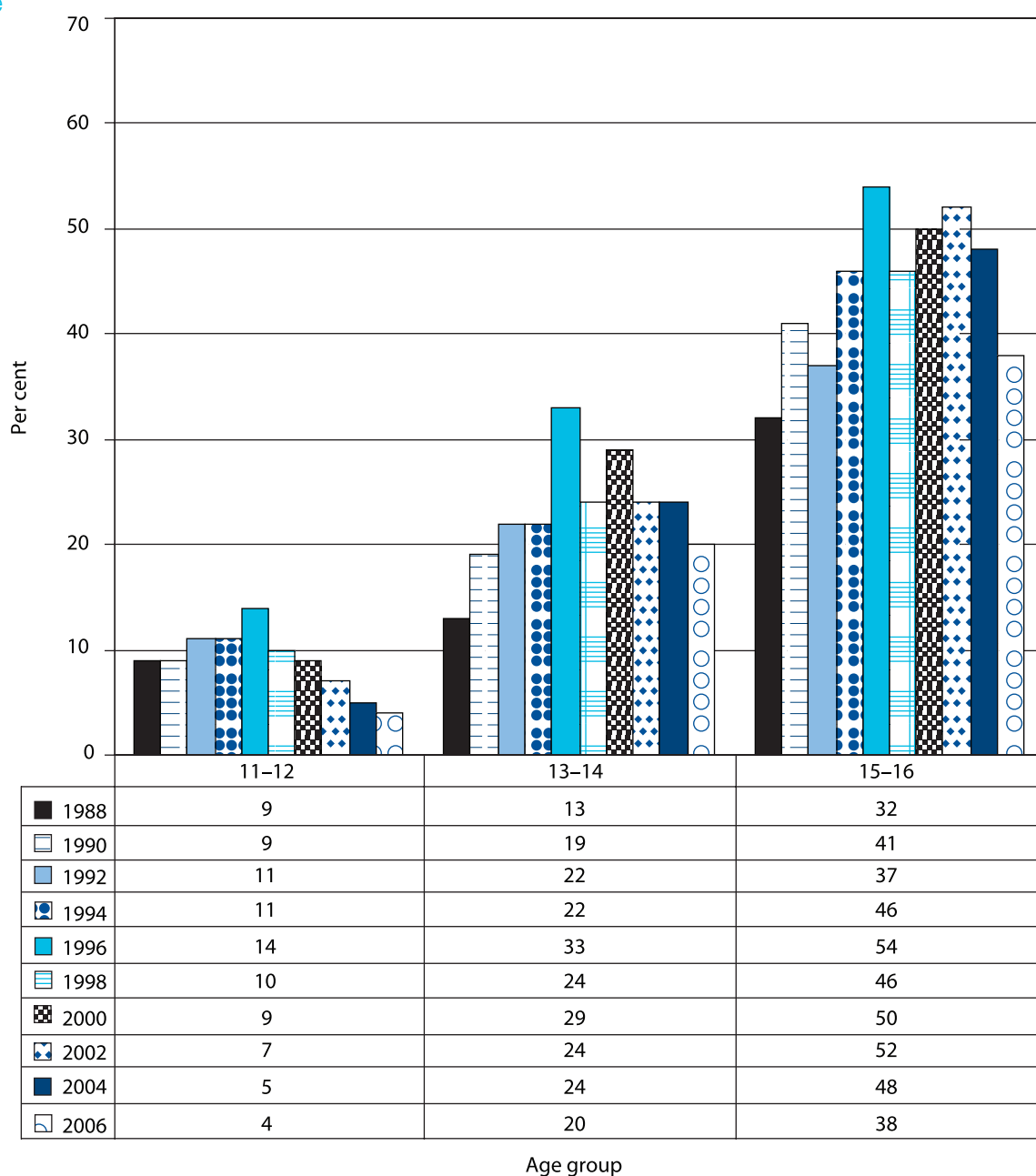
Question to derive response to weekly drinking changed in 2002, so results before 2002 not directly comparable.
 Source: HSCB – Wales (World Health Organization, www.hbsc.org/).

the proportion drinking weekly reaching a peak in 1996. However, for girls in the two older age groups, the prevalence is higher in 2006 compared with 1988 (see Figure 77).

The trends suggest that, in both girls and boys from 8 to 15 years old, there has been a recent decline in the prevalence of weekly drinking in England, Scotland and Wales. The reductions were more marked in older age groups. The prevalence in 2006 is the same in 11- to 15-year-old girls as in boys of the same age in England; in Scotland the decline was greater in boys such that

the prevalence in 2006 is actually higher in 13- and 15-year-old girls than boys. While the SHS showed an increase in 14- and 15-year-old boys and girls, the sample sizes were small and data is available only for 1998 and 2003. The other national surveys show declines in weekly drinking in more recent years. There has been no clear pattern overall for the proportion of 15- and 16-year-old pupils in the UK drinking 40 times or more in a lifetime or ten times or more in the last 30 days from 1998 to 2003.

Figure 77: Trends in the proportion of girls aged 11 to 15 in Wales drinking every week, 1988 to 2006, by age



Question to derive response to weekly drinking changed in 2002, so results before 2002 not directly comparable.
Source: HSBC – Wales (World Health Organization, www.hbsc.org/).

Mean alcohol consumption

England

Data on mean alcohol consumption for England is provided by the SDD survey (Fuller, 2006, 2008). In boys and girls who had drunk alcohol in the last week, the trend from 1990 to 2006 showed an increase from 5.7 to 12.3 units in boys and from 4.7 to 10.5 units in girls. The greatest change is seen between 1990 and 2000, with the change fluctuating in recent years (see Figure 78). The interpretation of the recent trends is dependent on which estimate for 2007 is used. In line with other national surveys, the method for calculating a pupil's alcohol consumption has been revised. Using the revised methods, mean alcohol consumption in 2007 is higher than in 2006, whereas, using the original method, the value is lower for both boys and girls.

The mean alcohol units consumed by younger boys and girls aged 11 to 13 who drank in the last week continued to rise from 2000 to 2006, but then decreased sharply according to both methods of unit calculation (see Figures 79 and 80). Interpretation of trends from 2006 to 2007 in the two older age groups is dependent on which estimate for 2007 is used. According to the original method of unit calculation, there was either little change or a marked reduction in 14-

and 15-year-old boys, respectively, from 2006 to 2007. However, based on the revised method, mean alcohol consumption increased in both age groups, which was a marked increase in 14-year-old boys. The pattern was similar in girls with 15-year-old girls showing a marked increase in mean alcohol consumption.

Scotland

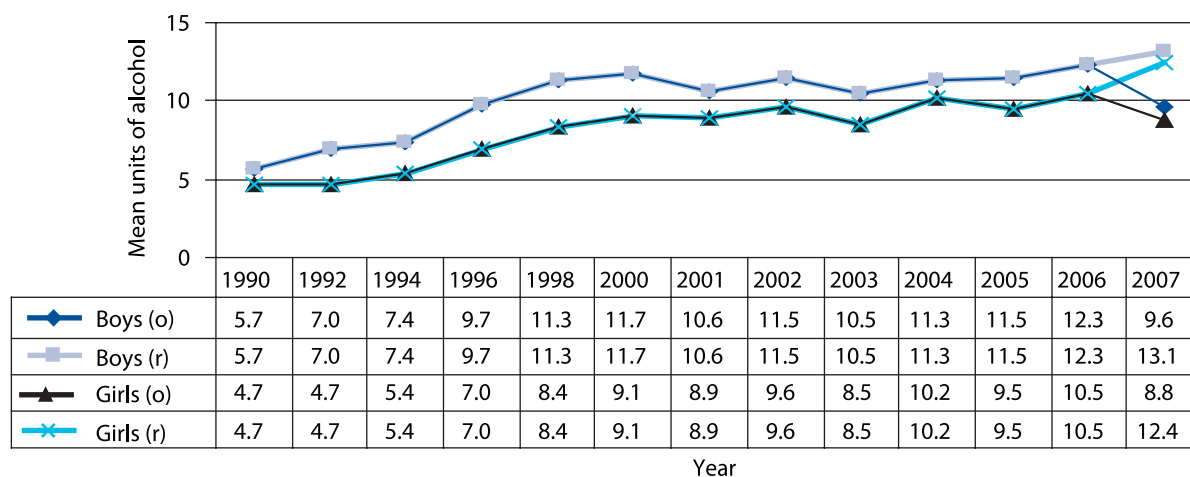
Data on trends in mean alcohol consumption for Scotland is provided by the SHS (Bromley *et al.*, 2005). Among young people aged 13 to 15 years, mean alcohol consumption reported as units per capita, has risen from 0.7 to 1.2 units for boys and from 0.6 to 1.2 units for girls (see Figure 81). The increase is greater in 15-year-old boys and girls, though the data is insufficient to draw firm conclusions (see Figures 82 and 83).

Drunkenness and binge drinking

United Kingdom

Data on trends in drunkenness and binge drinking for the UK is provided by the ESPAD study (Hibell *et al.*, 2004). The proportion of 15 to 16 year olds who reported being drunk 20 times or more changed little between 1995 and 2003 (see Figure 84). Similarly, the proportion who reported being drunk ten times or more in the last twelve

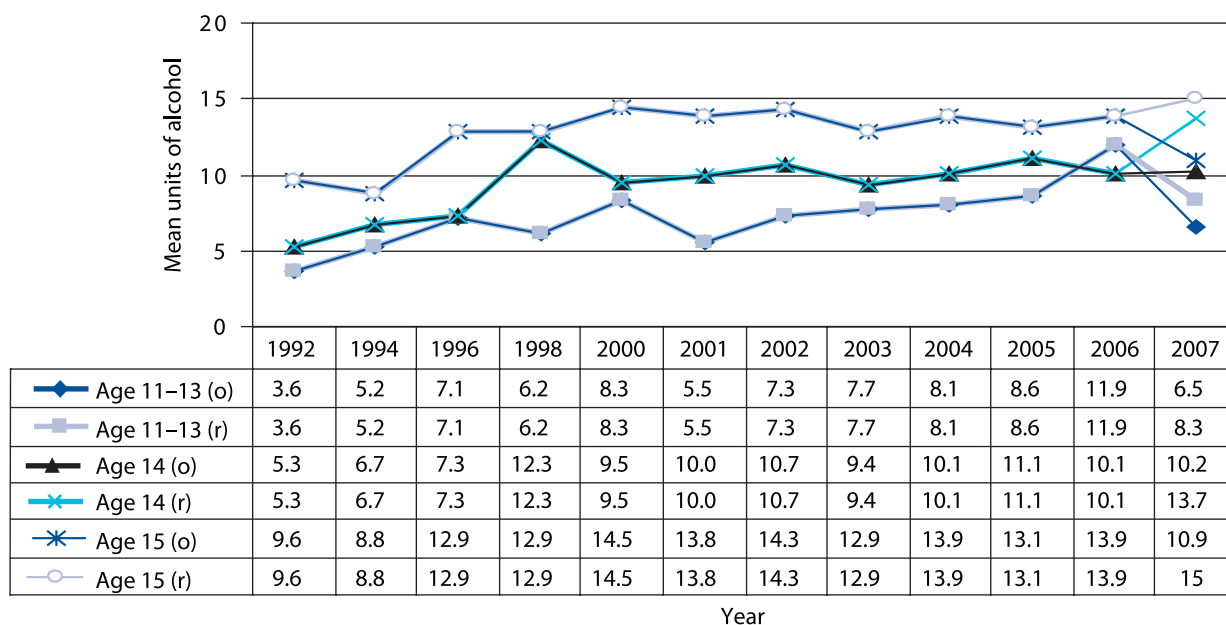
Figure 78: Trends in mean alcohol consumption in pupils aged 11 to 15 years in England who drank alcohol in the last week, 1990 to 2007, by gender



o = original method of calculating alcohol units; r = revised method applied to 2007 data.

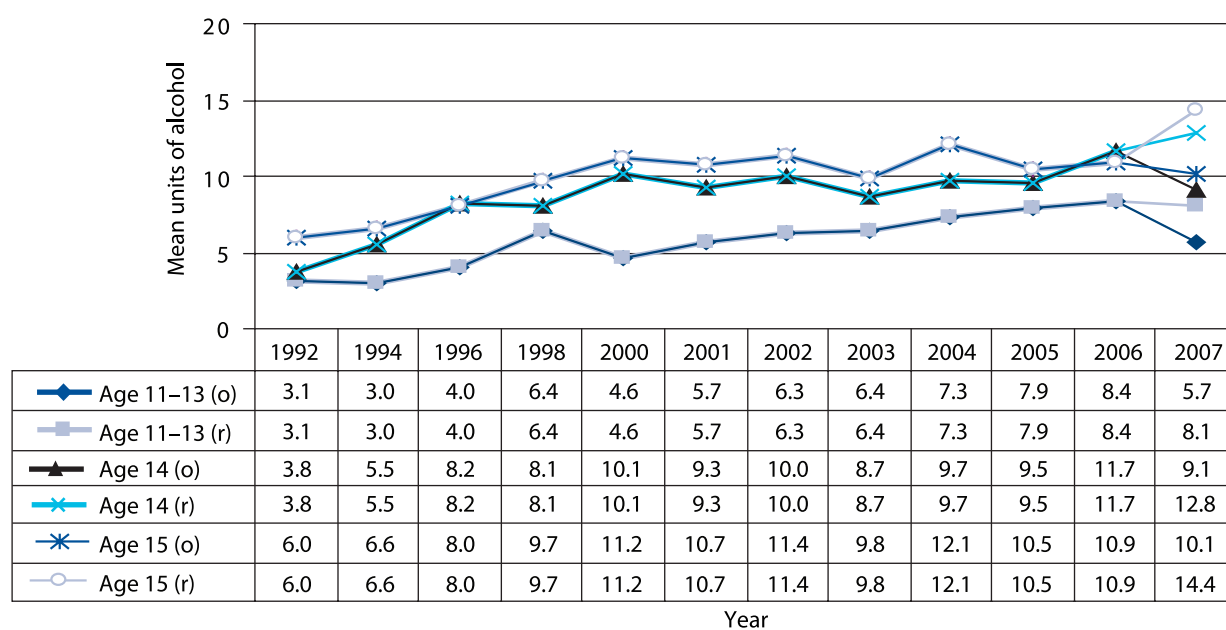
Source: SDD, 2007 (Fuller, 2008).

Figure 79: Trends in mean alcohol consumption in boys aged 11 to 15 years in England who drank alcohol in the last week, 1992 to 2007, by age



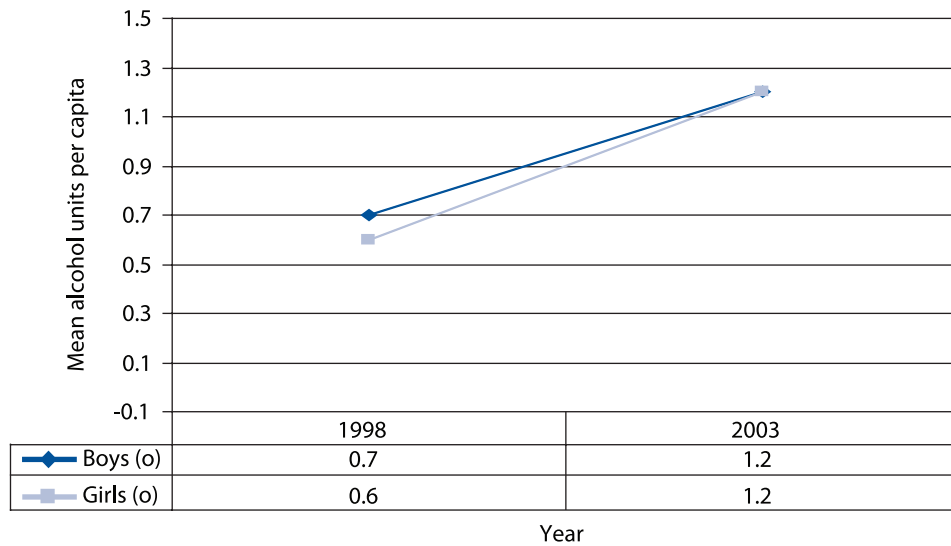
Data was not available by age group for 1990. o = original method of calculating alcohol units; r = revised method applied to 2007 data.
Source: SDD, 2007 (Fuller, 2008).

Figure 80: Trends in mean alcohol consumption in girls aged 11 to 15 years in England who drank alcohol in the last week, 1992 to 2007, by age



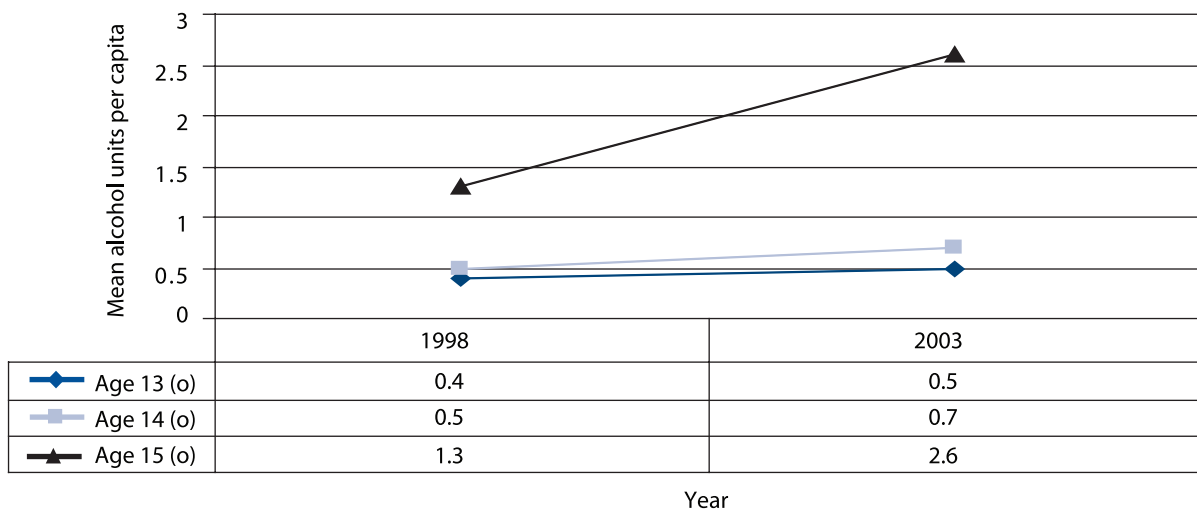
Data was not available by age group for 1990. o = original method of calculating alcohol units; r = revised method applied to 2007 data.
Source: SDD, 2007 (Fuller, 2008).

Figure 81: Mean units of alcohol per capita in last week in young people in Scotland aged 13 to 15 years



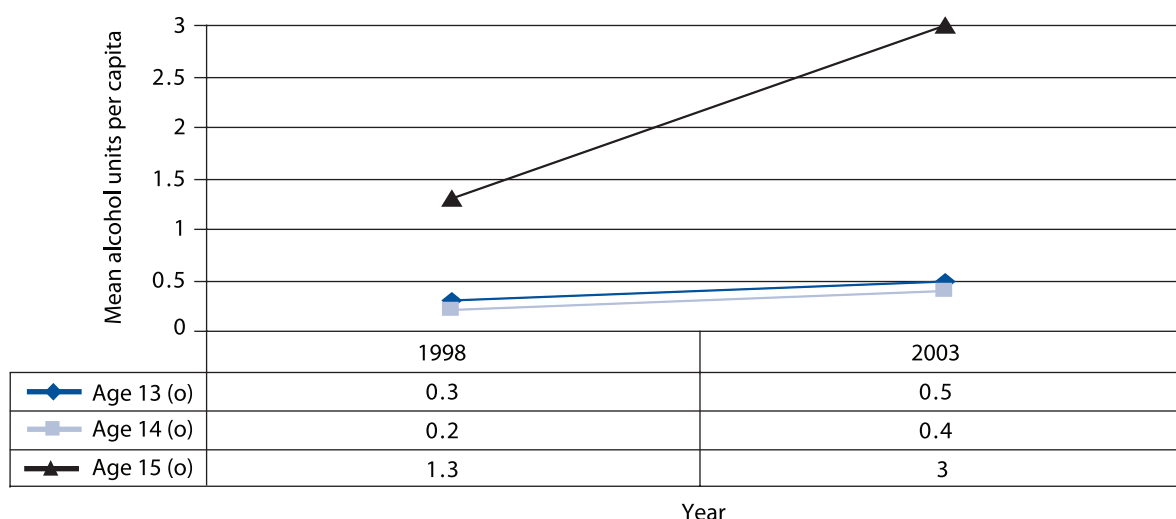
Mean units per drinker not reported, as unweighted bases for drinkers in last week within age are less than 30.
 Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 82: Mean units of alcohol per capita in last week in boys in Scotland aged 13 to 15 years



Mean units per drinker not reported, as unweighted bases for drinkers in last week within age are less than 30.
 Source: SHS, 2005 (Bromley *et al.*, 2005).

Figure 83: Mean units of alcohol per capita in last week in girls in Scotland aged 13 to 15 years



Mean units per drinker not reported, as unweighted bases for drinkers in last week within age are less than 30.
 Source: SHS, 2005 (Bromley *et al.*, 2005).

months showed little change (see Figure 85) and the prevalence is little different for drunkenness 20 times or more in a lifetime. The proportion reporting drunkenness three times or more in the last three months was slightly lower and decreased from 24 to 22 per cent in boys, and increased from 20 to 25 per cent in girls (see Figure 86).

The proportion of pupils aged 15 to 16 years who reported binge drinking (defined as five or more drinks in a row on one occasion) increased between 1995 and 2003 (see Figure 87). The increase was greater in girls, from 20 to 29 per cent than in boys, 24 to 26 per cent.

Scotland

The proportion of pupils aged 13 years who reported being drunk on at least one occasion decreased slightly between 2002 and 2006, and of 15 years old increased slightly (see Figure 88).

In boys aged 13, there was a small decrease and, in 15-year-old boys a small increase (see Figure 89). In 13- and 15-year-old girls, there was a slightly greater increase, such that the prevalence of drunkenness on at least one occasion was three and two percentage points higher in 13- and 15-year-old girls than in boys of the same ages in 2004 and 2006 (see Figure 90).

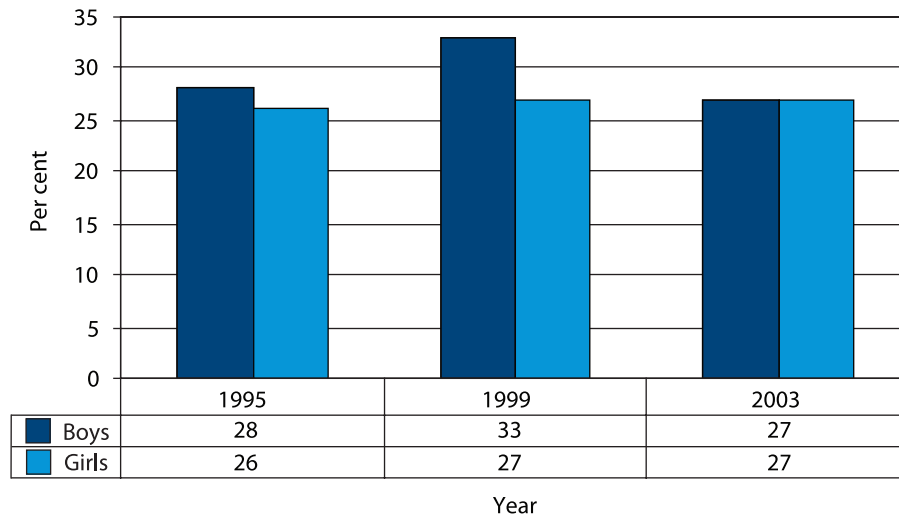
In 13- and 15-year-old pupils, the proportion reporting drinking five or more drinks on the same occasion in the last 30 days has declined slightly in both boys and girls of both ages (see Figures 91, 92 and 93).

There was little data on trends in prevalence of drunkenness and binge drinking in young people. Data from ESPAD for pupils 15 and 16 years old in the UK shows an increase from 1995 to 2003, particularly for girls. For pupils in Scotland, there was no consistent pattern, with little overall change in excessive drinking.

Trends in different ethnic and socio-economic groups

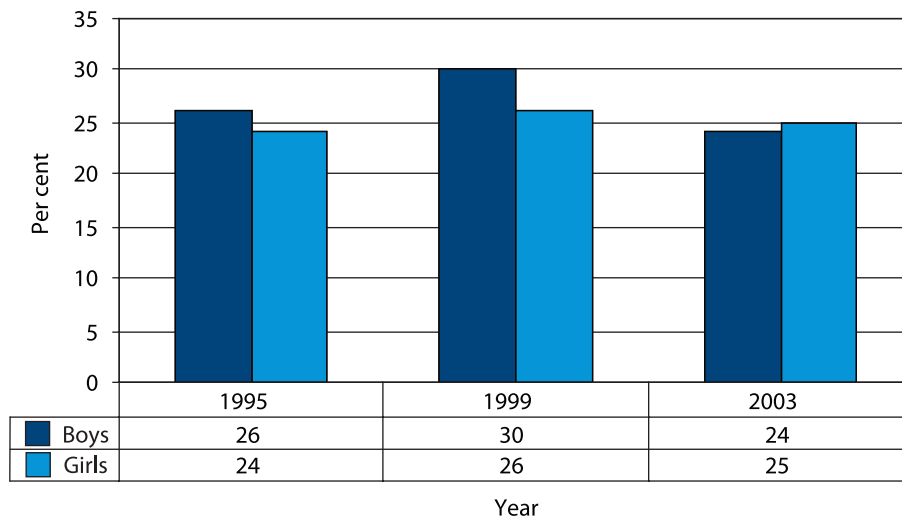
One aim we were unable to address was to investigate trends in consumption in different ethnic groups. Generally people from different ethnic groups form a very small proportion of the general population in these surveys, precluding reliable comparisons in time trends to be investigated. A review of questionnaires used in surveys such as the GHS and HSE to ascertain alcohol and tobacco use has called into question the reliability of prevalence data from these surveys for minority ethnic groups (Bhopal *et al.*, 2004). The authors of the review highlight the lack of linguistic equivalence and state that there is an urgent need to improve cross-cultural validity of survey methods, particularly for multi-ethnic societies. Also, trend data for different socio-economic groups was not reported. To reliably compare trends across different survey years by different socio-economic groups would require secondary analysis of raw data from the respective surveys.

Figure 84: Trends in the proportion of pupils aged 15 to 16 years in the UK who reported being drunk 20 times or more in their lifetime, 1995 to 2003, by gender



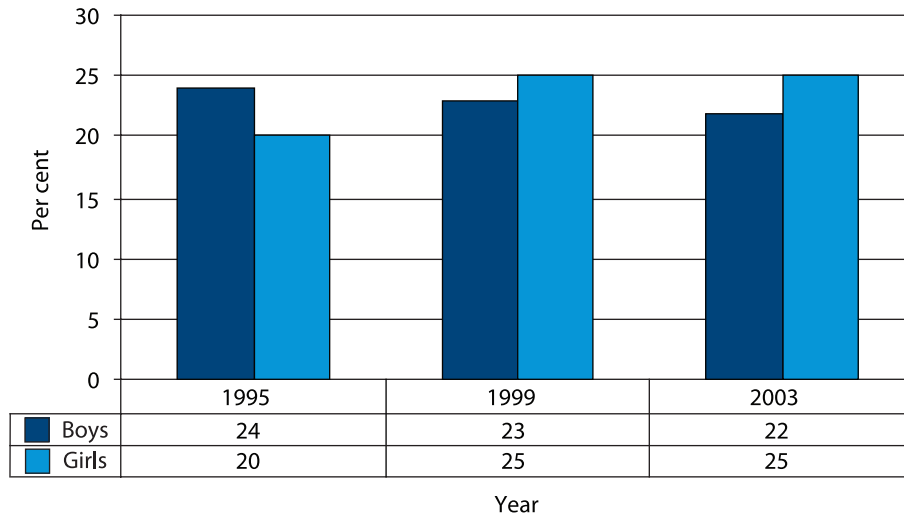
Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 85: Trends in the proportion of pupils aged 15 to 16 years in the UK who reported being drunk ten times or more in the last twelve months, 1995 to 2003, by gender



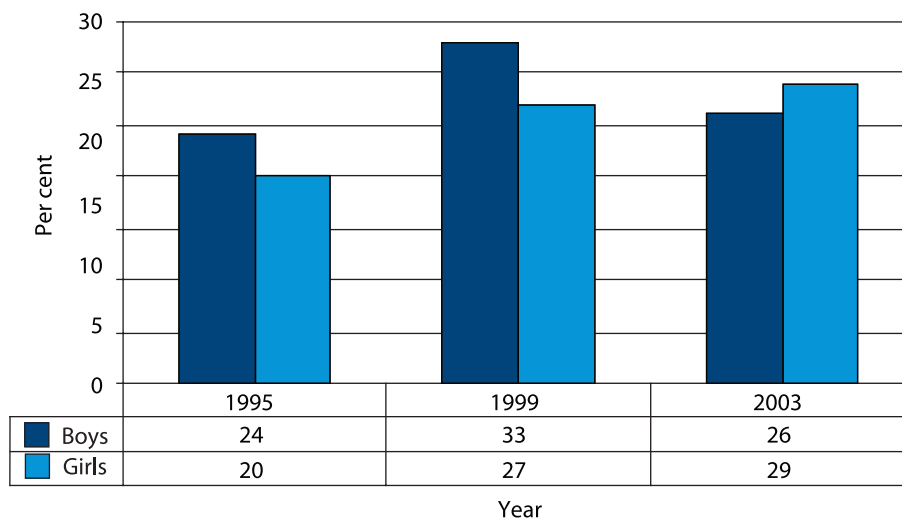
Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 86: Trends in the proportion of pupils aged 15 to 16 years in the UK who reported being drunk three times or more in the last twelve months, 1995 to 2003, by gender



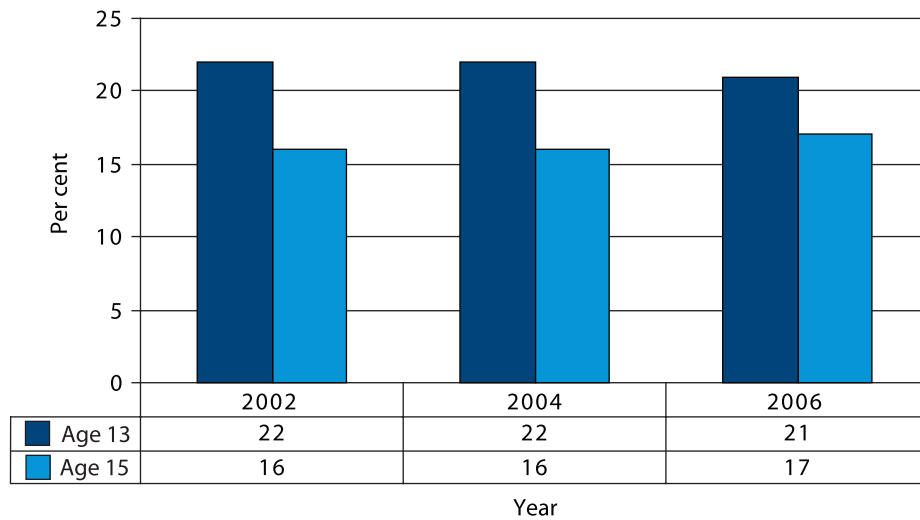
Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 87: Trends in the proportion of pupils aged 15 to 16 years in the UK who reported binge drinking three times or more in the last 30 days, 1995 to 2003, by gender



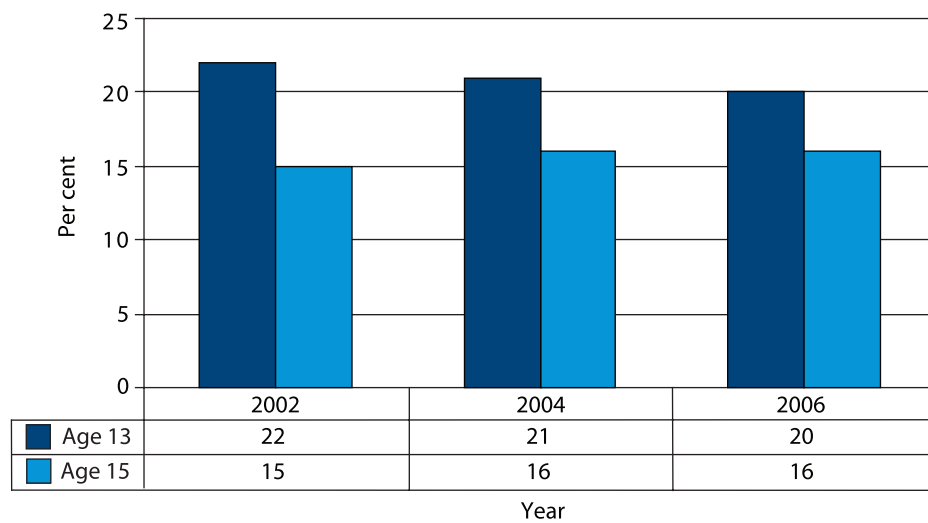
Source: ESPAD, 2004 (Hibell *et al.*, 2004).

Figure 88: Trends in the proportion of pupils aged 13 and 15 years (drinkers) in Scotland who reported being drunk on at least one occasion, 2002 to 2006



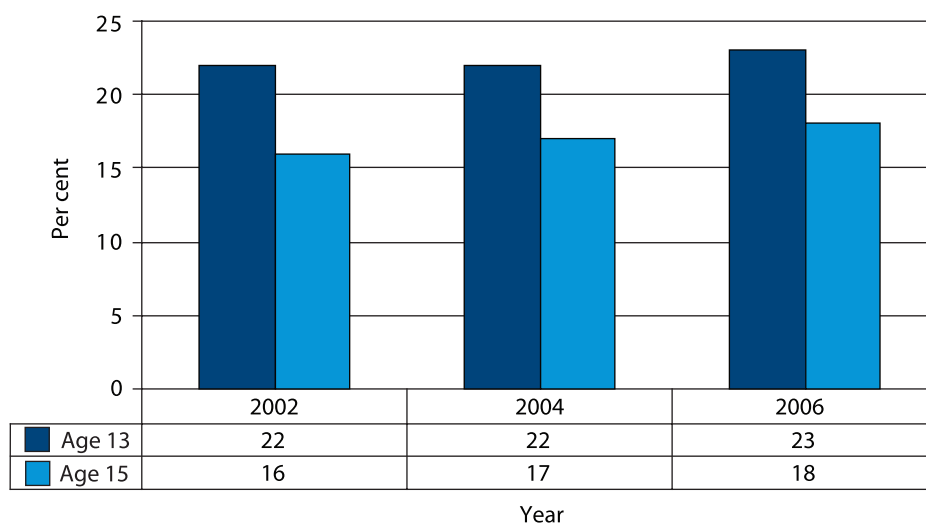
Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 89: Trends in the proportion of boys (drinkers) aged 13 and 15 years in Scotland who reported being drunk on at least one occasion, 2002 to 2006



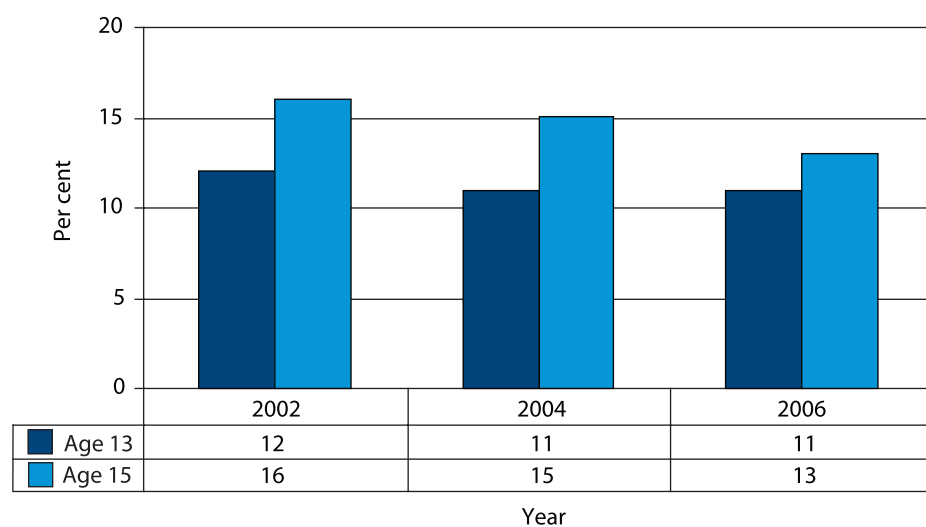
Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 90: Trends in the proportion of girls (drinkers) aged 13 and 15 years who in Scotland reported being drunk on at least one occasion, 2002 to 2006



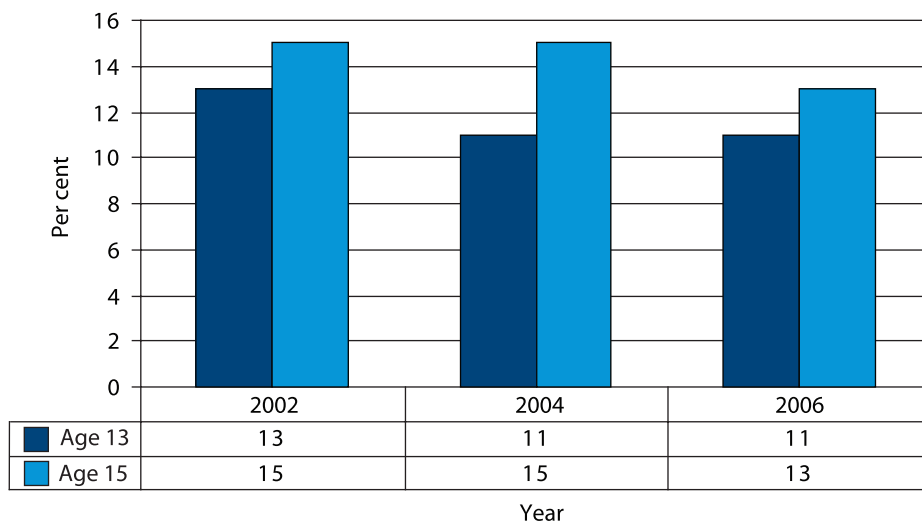
Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 91: Trends in the proportion of pupils (drinkers) aged 13 and 15 years in Scotland who reported drinking five or more drinks on at least one occasion in the last 30 days, 2002 to 2006



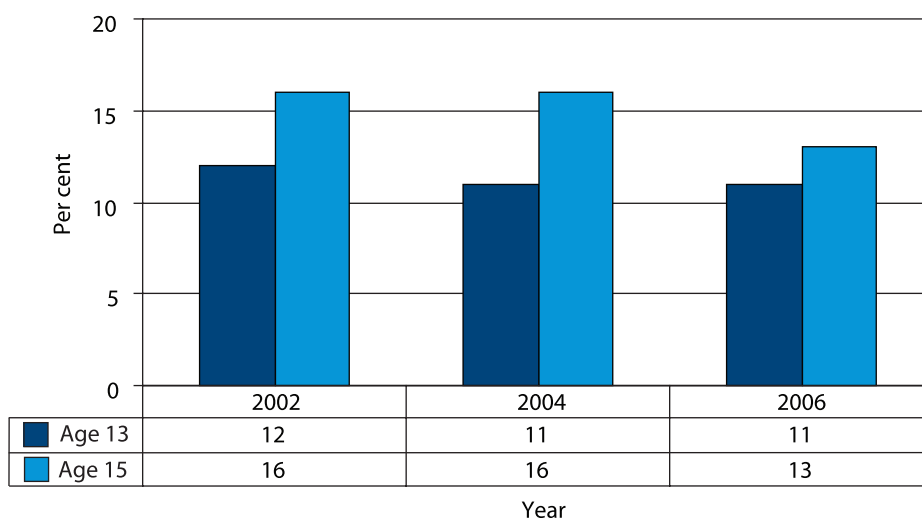
Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 92: Trends in the proportion of boys (drinkers) aged 13 and 15 years in Scotland who reported drinking five or more drinks on at least one occasion in the last 30 days, 2002 to 2006



Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Figure 93: Trends in the proportion of girls (drinkers) aged 13 and 15 years in Scotland who reported drinking five or more drinks on at least one occasion in the last 30 days, 2002 to 2006



Source: SALSUS, 2006 (Maxwell *et al.*, 2006).

Trends in alcohol spending and alcohol sales

We also assessed trends over time in alcohol consumption as measured by spending on alcoholic beverages and alcohol sales. Three sources of data provided this information: the Family Expenditure Survey (Dunn and Gibbins, 2008), alcohol drinks industry statistics and Customs and Excise data from the 2007 Statistical Handbook (British Beer and Pub Association, 2007).

Trends in consumption – sales volume

Data for the UK is provided by HM Revenue and Customs, National Statistics and BBPA (British Beer and Pub Association, 2007). There has been a large increase in the volume of alcohol consumed over the last 35 years, rising from 7.4 to 10.9 litres of pure alcohol per person aged at least 15 years from 1971 to 2006 (see Figure 94).

The type of alcoholic beverage consumed has changed over time, with a small decrease in beer consumption and increases in wine, cider, coolers/ flavoured alcoholic beverages (FABs) and spirits consumed (see Figure 95).

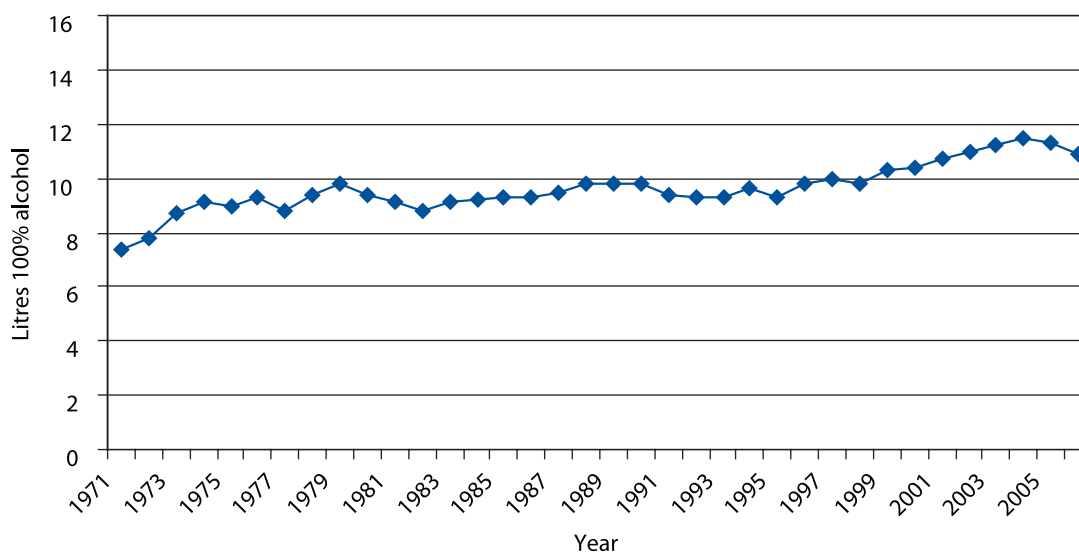
Trends in consumption – alcohol purchasing and prices

Trends in spending on alcoholic drinks from 1986 to 2006 are shown in Figure 96. The data is taken from the Family Expenditure Survey (FES) 2007 and uses the FES classification, which is deflated to 2006 prices (Dunn and Gibbins, 2008). Data using the internationally agreed standards, Classification of Individual Consumption by Purpose (COICOP) data, is only available for 2001/02 to 2005/06 and, therefore, is not shown. Average weekly expenditure on alcohol purchases has changed little overall from 1986 to 2006, averaging between about £15 and £17 a week per household. After a slight increase from 1995 to 2000, weekly expenditure decreased slightly in the subsequent years.

The figures and trends are in broad agreement with data compiled from National Statistics and BBPA data (British Beer and Pub Association, 2007). Over a longer time period than that reported in the Family Spending report, consumption in the UK in those aged 15 years and over has risen from £464 per head in 1964 to £774 per head in 2006 (2003 prices) – see Figure 97.

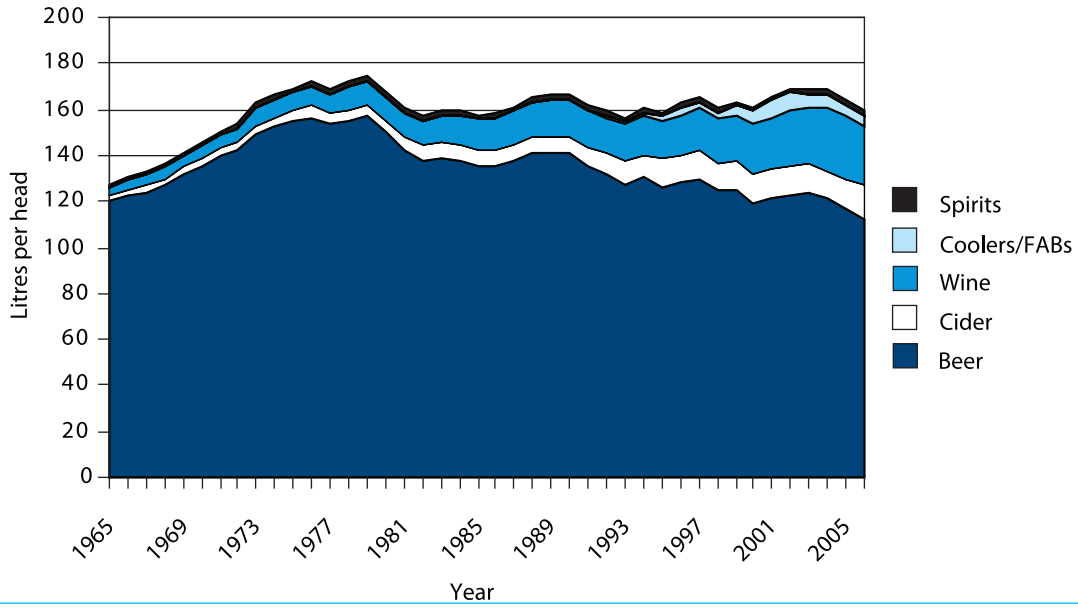
In contrast, the percentage of alcohol expenditure as a proportion of total expenditure has decreased (see Figure 98).

Figure 94: Trends in alcohol consumption – litres of pure alcohol per person aged 15 years and over, 1971 to 2006



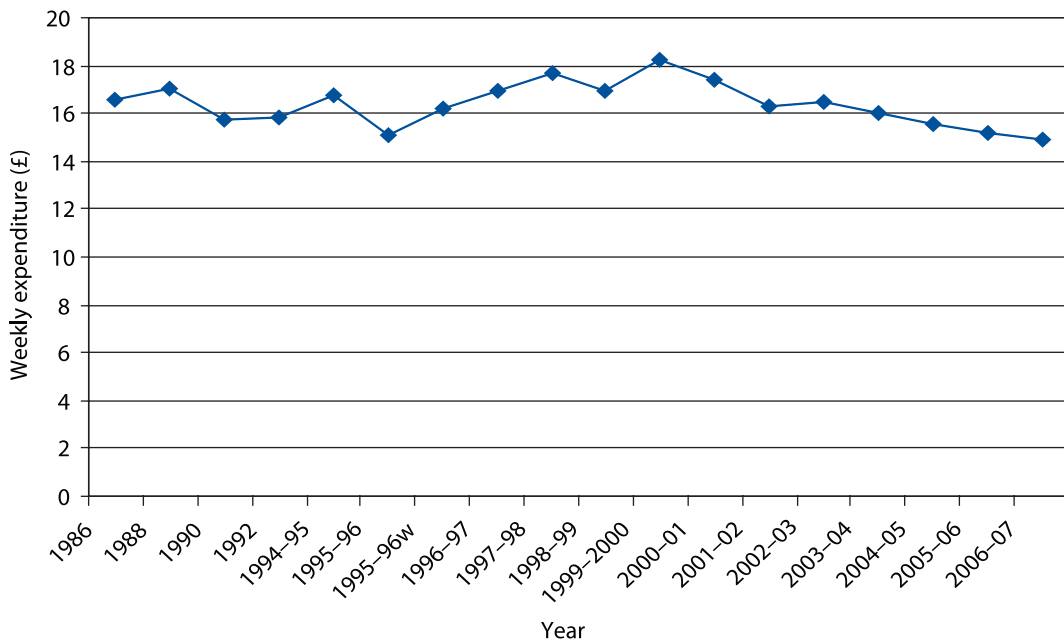
Source: 2007 Statistical Handbook (British Beer and Pub Association, 2007).

Figure 95: Trends in alcohol consumption: litres of pure alcohol per person aged 15 years and over, 1965 to 2006, by type of beverage



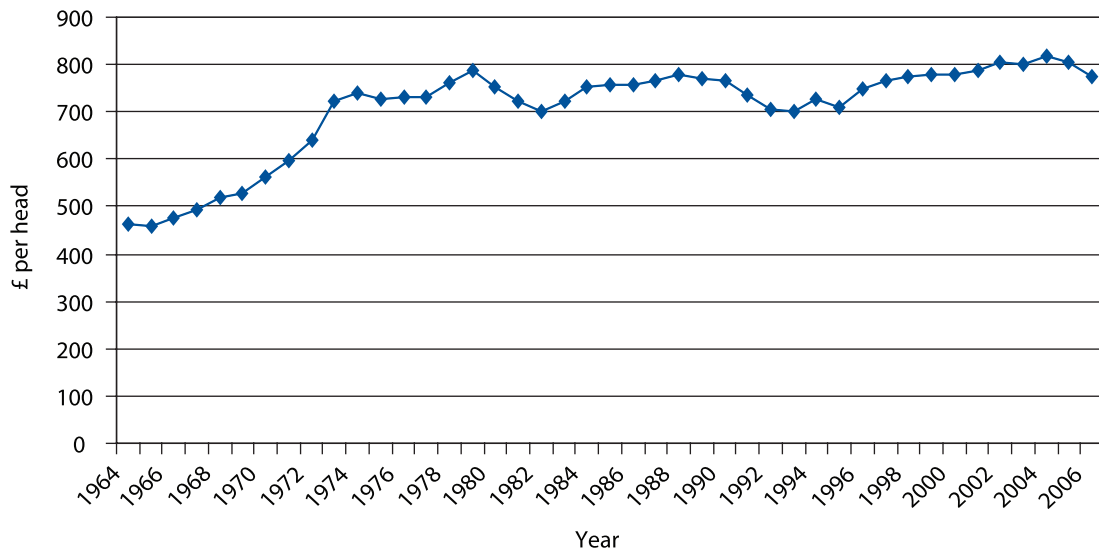
Cider includes perry from 1980, spirits include spirit-based coolers, wine includes made-wine, which included coolers up until 1990. Coolers/flavoured alcoholic beverages (FABs) are shown separately thereafter and include spirit-based as well as wine-based coolers.
 Source: 2007 Statistical Handbook (British Beer and Pub Association, 2007).

Figure 96: Average weekly household expenditure (£) based on the Food Expenditure Survey (FES) classification at 2006 prices



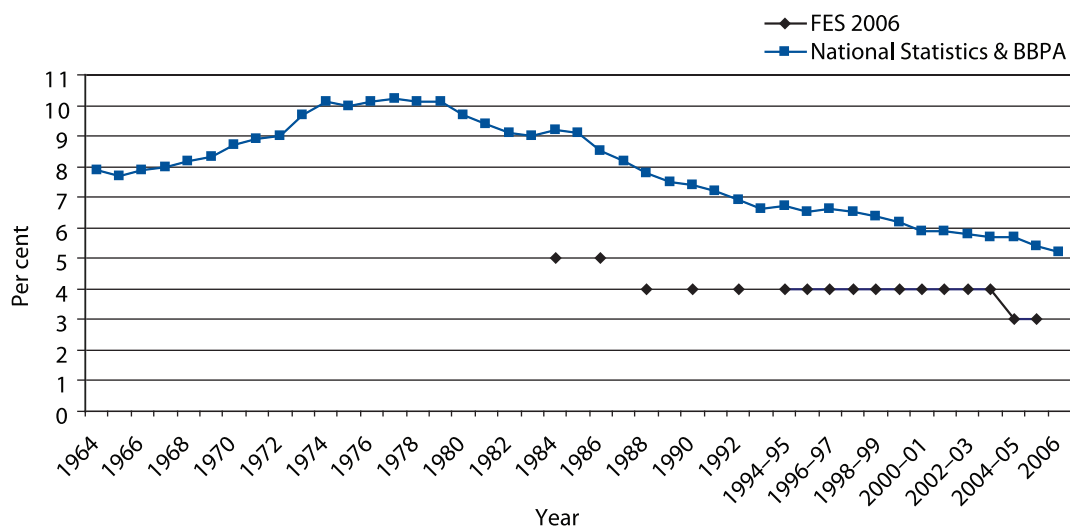
Figures deflated to 2006 prices using Retail Price Index (RPI) all items index. From 2001-02 onwards, commodities and services are based on COICOP codes broadly mapped to FES (Family Spending 2007). w = weighted.

Figure 97: Trends in alcohol expenditure per head aged 15 years and over, 1964 to 2005



Source: 2007 Statistical Handbook (British Beer and Pub Association, 2007).

Figure 98: Trends in expenditure on alcoholic drink as a percentage of total expenditure, 1964 to 2006



Source: 2007 Statistical Handbook (British Beer and Pub Association, 2007).

In the UK, between 1971 and 2006, there has been an increase in alcohol sales made through off-trade premises (off-licences and supermarkets, etc.) and a corresponding decrease in on-trade sales (pubs, clubs, restaurants, etc.) – see Figure 99.

Trends in the Retail Price Index (RPI) by alcohol type and also for all items combined are shown in Figure 100. From 1987 to 2007, RPI increased for total beer sales, ‘on’ beer sales and wine and spirit sales. However ‘off’ beer sales were lower than the average for all items combined and for total beer sales, with little change in the RPI since 1993.

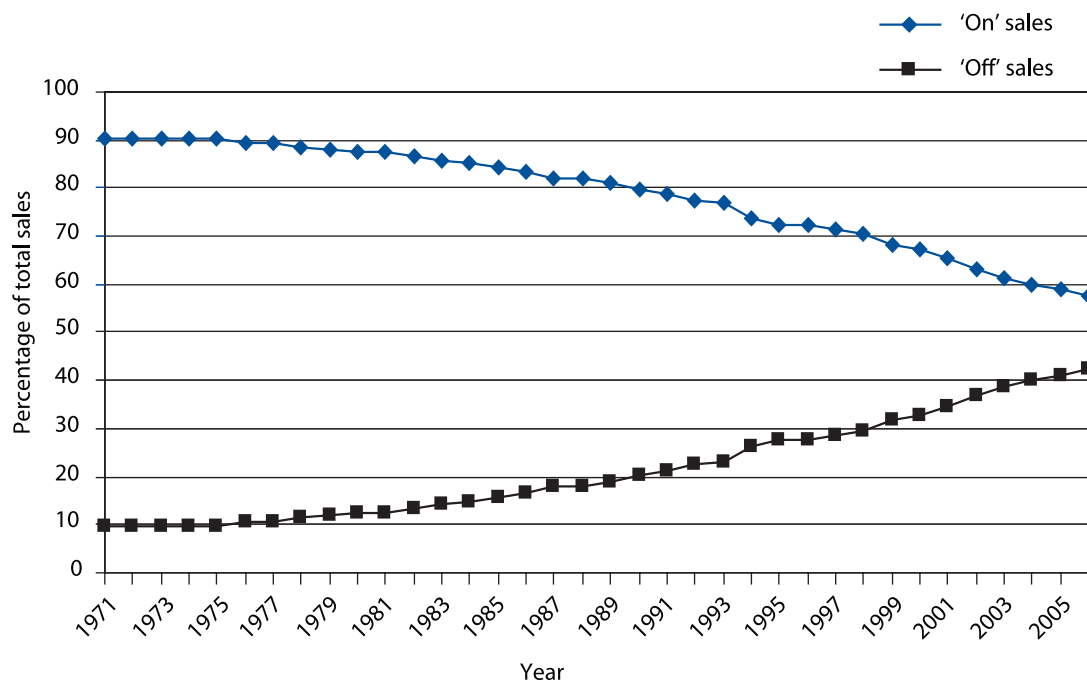
Household disposable income has increased by 97 per cent in real terms between 1980 and 2005, so alcohol is 62 per cent more affordable in 2005 than in 1982 (National Statistics, 2007).

Comparisons of self-reported alcohol consumption data and Customs and Excise data show generally lower levels of consumption in the self-reported data. Customs and Excise data for

1998 showed that adults in the UK drank 18.5 units per week on average. Surveys for this period generally showed that people reported drinking ten to eleven units a week. The difference may not be entirely due to underestimation of drinking and lack of full representation of heavy drinkers in the general population surveys. Surveys tend to be conducted during periods of the year to avoid Christmas and other periods when consumption is likely to be heavier than usual, whereas the Customs and Excise duty is an average across the whole year. It is not clear how this variability contributes to the data.

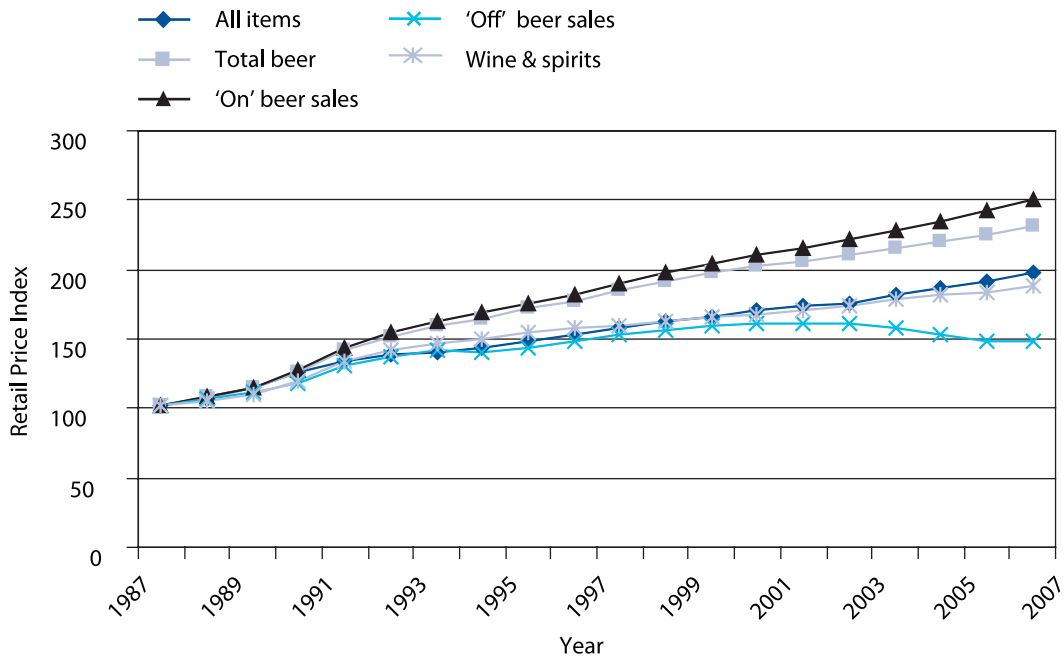
While the absolute cost of alcohol has increased over the last 30 to 40 years, the increase in price has not kept up with the rise in income. Trends in alcohol consumption and prices adjusted for income show a decrease from 1960 to 2005 matched by a corresponding increase in consumption of alcohol in litres per capita over the same time period (see Figure 101).

Figure 99: Trends in UK beer sales by ‘on’ and ‘off’ channels, 1971 to 2006



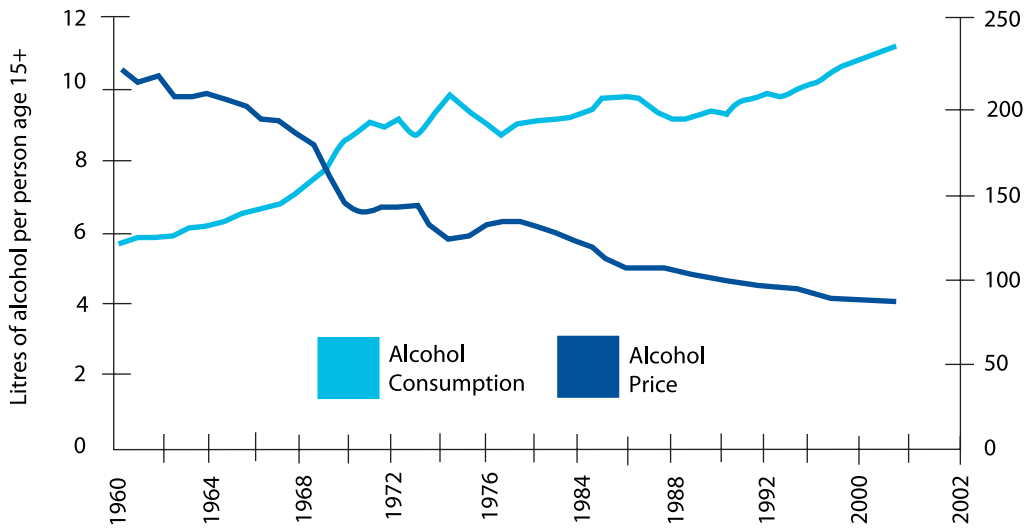
Source: 2007 Statistical Handbook (British Beer and Pub Association, 2007).

Figure 100: Trends in the Retail Price Index, 1987 to 2006



Source: 2007 Statistical Handbook 2007 (British Beer and Pub Association, 2007).

Figure 101: Consumption of alcohol in the UK per person (aged at least 15 years) relative to its price, 1960 to 2002



Index is weighted for quantity of different beverages consumed and their prices using 1995 as 100. The price of alcohol is divided by gross household income after tax.

5 Discussion of selected trends

In this systematic review of recent trends in alcohol consumption in the United Kingdom we have reported results from a number of high-quality surveys using data from several time points. Selecting which of these results to focus on for further discussion was somewhat arbitrary and it was beyond the scope of this review to undertake detailed analyses of identified trends in order to provide a thorough explanation of factors that may have influenced consumption and, therefore, trends. To do this, the obvious starting point would be to undertake separate comprehensive reviews of the literature focusing on all possible causal influences.

As such additional reviews were beyond the scope of this project, we were initially cautious about speculating too much on explanations for the trends in the absence of robust evidence. However, we have attempted to selectively identify a few results and provide some initial thoughts regarding what may account for these trends. To do this, each researcher (Lesley Smith, Jo Neale and David Foxcroft) first independently identified a set of interesting trends and these were then discussed among the research team, leading to a final set of trends selected for further consideration. This further consideration involved the same researchers independently summarising and offering brief explanatory notes for each selected trend. These independently produced notes were then pooled and edited for the discussion section of this final report.

One exercise that was not within the scope of this report and would be helpful for further examination of reported trends is to systematically map trends against other societal and population trends – for example, trends in poverty, income inequalities, illicit drug use and sexual lifestyles – or against key events such as political events, or key policy changes, or key health campaigns. We selected five interesting trends for further consideration:

- increase in drinking among women;
- increase in drinking among middle and older age groups;
- increase in drinking in Northern Ireland compared with the rest of the UK;
- a possible recent decrease in drinking among 16 to 24 year olds;
- rising consumption among very young adolescents.

Increase in drinking among women

In the UK, women are less likely than men to drink and women who do drink consume less than men. However, it is the greater increase in alcohol consumption in women over recent years, with the gap between the genders closing, that gives rise to current concerns. Recent increases in drinking among women are demonstrated by a robust trend identified across several different surveys and different measures of alcohol consumption (GHS, CHS, Omnibus Survey, HSE and SHS).

These figures all show a general upward trend of women's drinking across all age groups, with the possible exception of very recent drinking among 16 to 24 year olds, which is discussed further below. One important factor that affects the interpretation of trends in consumption is the recent change to the method for calculating a unit of alcohol. The change in method doubles the units of wine consumed since a glass is now counted as two units instead of one. It also increases the units of strong beers by one-third and normal-strength beers by about 12 per cent. Groups more likely to drink wine, which include women and those aged 25 and older, are disproportionately affected by the change in conversion factors.

Possible reasons for increased drinking in women have been widely discussed in the scientific literature and media, and cover a number of different factors that include the following.

- Women have more equality in a wide range of life areas including educational and occupational opportunities, and have greater social freedom and financial independence.
- Women are more affluent now with more disposable income.
- More women are staying single for longer or are divorced with fewer family responsibilities.
- More people are living alone now than they used to – including women.
- The social acceptability of women drinking has increased.
- Alcohol is more readily available in supermarkets and shops, and drinking environments are no longer the domain of men – supermarkets are a common source of alcohol purchases for women.
- The ‘ladette’ culture may have glamorised drinking particularly among young women and is endorsed by prominent figures in the mass media.
- Advertising and promotional activity is increasingly directed at women.
- Women drink more wine than men and wine has been getting cheaper, wine strength has increased and wine glasses have been getting larger, disproportionately affecting women’s drinking more than men.
- Women are more likely to be home drinkers and, as home drinking is increasing, we would expect women’s drinking to increase relative to men’s drinking.
- The health implication of regular drinking in the home may not be fully appreciated

by women – recent campaign messages focus on ‘binge drinking’, which may not be a concept identified with by women who do not realise that they are exceeding recommended amounts and do not see their own consumption as remarkable.

Men and women have historically drunk in different ways, but there seems to be clear evidence that this has changed over recent years. The international GENACIS research project compared gender differences in drinking across many countries, concluding with the observation that the ‘gender gap’ in drinking behaviour is related to the gender equity of a society, as the smallest gender differences in drinking behaviour were found in the Nordic countries, followed by western and central European countries (Bloomfield *et al.*, 2005). The authors of the GENACIS report are unsure about how to interpret this finding:

Finally, our results do not tell us in any detail how gender differences in drinking behaviour decrease. Is it because women are drinking more in the countries where the differences are smaller, or alternatively, the difference is smaller because men happen to be drinking less or experiencing fewer problems? This is indeed an important question that has implications for future alcohol and public health policy in that it is crucial to know who may be drinking more or less when gender differences converge.

(Bloomfield *et al.*, 2005, pp. 19–20)

Our current examination of trends in drinking behaviour over the last 15 to 20 years indicates that it is the drinking behaviour of women that has increased compared with the drinking behaviour of men, at least in the UK where the gender gap in drinking at excessive and harmful levels has decreased over the period covered in this report. This can be interpreted as one expression of the historically recent emancipation of women in western society in terms of gender roles and also the increased financial security and independence of women. Interestingly, increasing alcohol consumption in women from 1978 to 1985 was reported 20 years ago resulting from a secondary analysis of two different surveys in England and

Wales (Dunbar and Morgan, 1987). The pressure of positive advertising and emancipation of women were cited as possible explanations for the drinking patterns of women more closely resembling men's (Filmore, 1984).

Factors that have been shown to be positively associated with drinking in women include affluence, educational achievement, belonging to managerial and professional groups, and living alone (Goddard, 2006; Pattenden *et al.*, 2008). These are all factors that increasing numbers of women have achieved over succeeding generations. Also women who are unmarried, separated or divorced are more likely to drink in excess of recommended limits than women who are married or co-habiting (Goddard, 2006).

Several qualitative studies of drinking in young women have indicated that many are unaware of a clinical definition of binge drinking and do not recognise their own drinking in these terms or identify with drinking described in this way (Gill and O'May, 2007; Guise and Gill, 2007). However, data from the Omnibus Survey (Goddard, 2007a) and GHS (Goddard, 2006) shows an increased awareness over time of knowledge of alcohol units (79 per cent to 85 per cent), and recommended daily limits in women of all ages (54 per cent to 69 per cent) from 1997 to 2006.

There may also be a tension within the explanations for increased drinking among women in terms of whether women are drinking more for enjoyment (hedonistic reasons) or to cope with the stresses of modern life (coping reasons). So, on the one hand, we have images of all female groups out drinking heavily for fun but, on the other, we have images of women having a drink at home after a hard day at work and/or looking after the children. Both types of explanation may well be relevant.

More information is needed: we need more research on what, when, where, how and why women are drinking, including women's knowledge of safe drinking limits and perceptions of associated risks of excessive consumption. We also need to know more about why increased knowledge does not always lead to behaviour change.

Increase in drinking among middle and older age groups

While alcohol consumption among middle and older age groups is lower than for younger age groups, in recent years there has been a small but steady increase in the amount of alcohol consumed by the middle and older age groups. The trend is consistent across different surveys and different consumption measures (GHS, SHS, CHS and HSE). This age group will also be disproportionately affected by the change in alcohol unit calculation method, as older age groups are more likely to drink wine. Other potential reasons for the observed trends include:

- greater affluence, earlier retirement so more free time, greater health, younger outlook;
- alcohol is more affordable;
- boredom, loneliness and difficulties with adjusting to a change in role such as caring for older relations or coping with offspring leaving home;
- cohort effects;
- alcohol education has focused on binge and problem drinking in younger age groups; therefore older people may be unaware of the recommended limits and health risks – in contrast, they be more aware of the reported beneficial effects of drinking on health.

One possible explanation for the increase in drinking among older age groups over recent years is that we have a more affluent and active older population, with more disposable income and better health. Investigation of associations between alcohol consumption and various socio-economic and health factors were investigated in about 15,000 community-dwelling people 75 years and older in England, Wales and Scotland. Drinkers were more likely to be people with an active and sociable lifestyle, and with better self-reported health status compared with non-drinkers (Hajat *et al.*, 2004). Interestingly, higher levels of anxiety were also associated with regular drinking

in this study. These groups may not perceive themselves as 'old' and drinking may be an activity that they feel they have the freedom to enjoy.

The increase in drinking among older people could also be related to a broader phenomenon of risk-taking among older people, who have been a target of the Government's 'Know before you Go' campaign designed to decrease risky behaviour while on holiday overseas (Foreign and Commonwealth Office, 2001).

Alcohol is 65 per cent more affordable now than in 1980 and accounts for only 5.2 per cent of household spending compared with 7.5 per cent in 1980 (Office for National Statistics, 2007). Older people today are better off financially than they have ever been. For the first time ever, pensioners are no more likely to be living in poverty than others in the general population, but we also know that there are large income inequalities among older people: all the people as a group are better off, but some are much better off than others. It is likely to be the wealthier, better-off individuals who are drinking more and enjoying their new freedoms.

Recent media reports have also focused on higher levels of drinking among older people, relating this to boredom, loneliness, worry of getting older, early retirement and isolation from families that are now more geographically dispersed than they used to be. Alcohol may be used as a social prop required at a time when an adjustment to a role change is required.

It may also reflect a generation of drinkers with drinking habits established during former years when alcohol generally has been more widely available, affordable and acceptable. Today's 50 to 60 year olds represent the 'baby boom' generation, which experienced young adulthood during the 1960s, a time of great social change associated with more liberal and permissive attitudes to many social activities. This generation may be more likely to retain old drinking habits as compared with previous generations whose formative drinking years were associated with greater austerity. Gilhooly (2005) noted that, although alcohol consumption declined steadily with age, most studies reporting this are cross-sectional surveys rather than longitudinal studies. Although it is generally assumed that the findings

from cross-sectional studies indicate that the consumption of alcohol declines because of factors associated with ageing, survey results such as these could reflect cohort as well as an ageing effect (Kemmm, 2003). Gilhooly (2005) goes on to suggest that it may be that the current cohort of older people drank less when they were young and have merely carried this pattern of consumption into old age, pointing to growing evidence that at least some of the apparent reduction in drinking with age can be accounted for by cohort differences, rather than the impact of ageing on drinking behaviour. This explanation also provides an interesting perspective on why consumption may be increasing among these middle and older age groups, as indicated by the trends in this report.

Another consideration is that, over the past few years, alcohol education and health strategies have focused on drinking outside of the home, in younger age groups and on binge and problem drinking. There has, therefore, been less focus on drinking in the home and on habitual drinking where middle-aged and older-aged adults may be exceeding daily and weekly recommended limits. Therefore any prevention impact is less likely in these drinkers.

Differences in drinking patterns and trends in middle and older age groups are likely to relate to age, socio-economic status, ethnicity, living arrangements and a whole host of other aspects. To what extent increases in drinking are affected by being female rather than male, or living alone rather than with a spouse or partner, or even living in a residential setting, seem important issues to consider in further research. Little research on alcohol drinking patterns in older people has been undertaken.

Increase in consumption in Northern Ireland compared with the rest of the UK

Drinking prevalence and excessive weekly drinking is increasing in Northern Ireland compared with Great Britain as a whole. This is especially the case among younger adults, between the ages of 16/18 and 24 years of age. One possible explanation for this rapid rise in drinking in Northern Ireland is the

change in the licensing laws in 1996 and the rapid growth in the leisure industry (number of pubs/bars/clubs) since the peace process began. The peace process has led to increased investment, employment, urbanisation, personal financial status and independence among the population and among young people especially. This social and economic emancipation, when set against a historic low baseline of alcohol use because of religious and cultural norms, has led to an increase in alcohol drinking over recent years, probably towards the levels in the rest of the UK through some sort of social and cultural osmosis.

Victor Robinson, a lecturer at the University of Ulster, has argued recently that a high percentage of people in Northern Ireland did not use alcohol at all, in large part because of religious beliefs. Catholic society had the pioneer movement, while the Temperance movement was strong among Protestants:

But those times are behind us: alcohol and drug use is increasing in Northern Ireland. There is an increasing trend for young people to drink alcohol, and for women to drink. Of course, women always did drink, but today their drinking is more public and visible.

(Robinson, 2005)

He also expresses concern that not enough is being done to combat alcohol abuse in Northern Ireland and that drug misuse seems to be a greater public health priority.

A survey of drinking patterns of about 1,000 adults in Northern Ireland (Health Promotion Agency for Northern Ireland, 2002, 2006) indicated that the factors that were shown to be associated with drinking were: higher income, higher level of educational attainment and being separated or divorced. The effect of marital status was more significant in women than in men and significantly more Catholics drank than Protestants. Binge drinking was also related to drinking company. Women were more likely to binge when drinking with a friend but not a partner and men were more likely to binge with a friend of the same sex. Bingeing was more likely to take part in groups. Single men and women were more likely to binge than those who were married. It is worth noting that a quarter of all men and women who stayed

within sensible guidelines for the week had participated in a binge in that week, lending further support to the recommendation for daily targets rather than weekly targets. The research also highlighted the lack of awareness among drinkers about the amount of alcohol that can damage their health.

A qualitative study of 18 to 35 year olds in Northern Ireland showed that knowledge of safe drinking guidelines was poor, and described a general acceptability of drinking and drunkenness by the participants interviewed (Health Promotion Agency Northern Ireland, 2003). There was a mismatch between what the interviewees defined as a problem drinker and their own drinking. They did not identify their own drinking as problematic as it did not conform to their beliefs about what constituted problem drinking. Overall, the negative impact of drinking on physical and mental health was not widely acknowledged or considered. The overwhelming message from this study is that drinking well in excess of current daily benchmarks at the weekends is perceived as normal and acceptable behaviour for many young adult drinkers in Northern Ireland. Alcohol drinking in this group was largely associated with positive expectancies.

A study of adolescents has shown that substantial increases in drinking were associated with changes in beliefs about the consequences of drinking behaviour and increases in perception of social approval over the same period of time (Morgan and Grube, 1997).

From 1960 to 2005, while there has not been much change in the number of licensed premises, there has been a change in the total number of establishments selling alcohol. This is largely due to increases in the number of off-licences and registered clubs. In 1960 there were 2,690 establishments selling alcohol and in 2005 this had increased to 3,246. The type of licensed premises has changed with a reduction in the number of pubs and an increase in the number of restaurants (Drugsalcohol.info, www.drugsalcohol.info/Home.aspx).

A key question is if – and when – the current levels will stabilise and what the likely drivers are for reducing levels of excessive drinking among young adults in Northern Ireland. It is also worth looking at the increase in drinking alongside the

increase in illicit drug use and possibly other illegal behaviours. An additional explanation for increased drinking and substance use in general is related to resolution of the political conflict, which started in the 1990s. This is because social issues that were previously hidden by the Troubles have now emerged into the limelight and may be worsened by paramilitary involvement in the drugs trade (Higgins *et al.*, 2004). The authors highlight the lack of prevention, treatment and harm reduction services established in Northern Ireland as a cause for concern.

A possible recent decrease in drinking among 16 to 24 year olds

This is a rather surprising finding, especially in the face of rising consumption in older age groups and among women generally across all age groups over the past 15 to 20 years. At first glance, this apparent recent downward trend may seem counterintuitive, as this age group have the highest consumption if one compares prevalence or unit consumption across ages, so the often cited message is that drinking is highest in young adults. That message still holds. It is just that, in the past few years, this age group may not be drinking quite as much as in preceding years. However, variability in consumption between successive survey years is greater in this age group than any other and this variability means that we should be more cautious about interpreting this as a convincing downward trend. Nevertheless, this trend is consistent across different surveys and different consumption measures (GHS, SHS and HSE).

Even if we lack confidence in the apparent downward trend – too recent to state as a robust, definite downward turn – it is still interesting and perhaps surprising that there is no further increase in drinking behaviour in this age group, and this warrants discussion. On the face of it, there appear to be many reasons to suppose that drinking among 16 to 24 year olds would have increased in recent years – the following, for example.

- The media frequently portray young people as drinking more heavily than ever.

- Advertising and promotional activities appeal to young people (Smith and Foxcroft, 2009).
- The night-time economy has grown, providing greater access to cheaper alcohol and more opportunity for young people to drink more.
- The under-25s are a target for cheap drink promotions.
- The drinking of young adults is more price responsive than the drinking of older adults, so, as alcohol has become cheaper, we might have expected drinking among young people to increase in line with affordability.
- There are high-level positive expectancies from drinking in young people in the UK (Engineer *et al.*, 2003).
- The adolescent period, a time associated with high-risk behaviour, has increased, with more young people living at home into their 20s.
- A new culture of intoxication and public drunkenness has emerged over recent years (Hayward and Hobbs, 2007; Measham *et al.*, 1994).
- There are more university students than ever before and university students are typically heavier drinkers than their aged-matched peers.

Given the reasons listed above, one would expect drinking to be increasing among younger adults rather than reaching a plateau or possibly declining. But the trend evidence is clear and it is likely that there is no single clearly identifiable reason for this, rather a set of factors contributing to the observed trend. Berridge (2007) has highlighted the role of multiple factors in changing patterns of tobacco consumption over the last few decades and multiple factors are also likely to contribute to changing patterns of alcohol consumption, including the following.

- Economic and financial pressures may be more pressing in recent years for this particular age

group. For young adults, the late teens and early 20s are typically a period of building up, and paying off, debts or perhaps saving for a deposit for a house.

- Although disposable income for the population as a whole has risen in the past few years, debt-service costs as a proportion of disposable incomes have risen over this period (PriceWaterhouseCoopers, 2007).
- Interestingly, young men are more likely to put a higher proportion of their disposable income into savings than young women and therefore perhaps have a higher responsiveness to the price of alcohol than young women.
- As the affordability of the housing stock for young people has decreased – first-time buyers are particularly pressured in this regard – this may result in less disposable income for young adults.
- More young people are entering higher education and, coupled with the introduction of student fees, this may mean that disposable income among young students and recent students paying off loans has declined over the past few years. However, it is not clear to what extent students are captured in the surveys included in this report, therefore the information contained in the surveys may represent a different or skewed demographic. There is some evidence to show that young people form a decreasing proportion of the respondents in the GHS and, while the data is weighted, it does not adequately compensate if those lost drink more heavily than the respondents included (Goddard, 2006).
- Young adults may be busier than ever before with less time for regular drinking. Coupled with this, the nature of social interaction is changing because of the internet and social networking. This means that young people may be less likely to go out to licensed premises to meet and socialise with other young people. Rather, for a proportion of young people, this interaction takes place online.

- It is also possible that consumers are becoming more sophisticated, that they are more health and lifestyle aware, though why this should affect younger adults and not other age groups is not clear unless it is a cohort effect.
- Local and national alcohol strategies, including the focus of the Government's National Alcohol Strategy on young binge drinkers, may have had an impact and may have led to more responsible drinking patterns and lower consumption in this age group over recent years.

Rising consumption amongst very young adolescents

The Government's alcohol strategy Safe. Sensible. Social (Department of Health, 2007) states that, while the proportion of young people who are drinking (i.e. prevalence) has declined in recent years, those who do drink are consuming more alcohol, more often. However, our study shows that the stated decline in the proportion of young people who are drinking is not consistently seen as a clear trend across different surveys, so this statement should perhaps be regarded as tentative.

It is clear, however, that young people who drink are drinking twice what they were in 1990 and that the amount of alcohol consumed by young adolescents aged 11–13 continued to climb until 2006, although there may have been a downturn more recently. Mean consumption among 14- and 15-year-old boys and 15-year-old girls showed less marked increases.

Reasons why consumption among 11 to 13 year olds showed an upward trend include the following.

- Younger adolescents may have fewer financial pressures than older adolescents and young adults, and may have a higher disposable income, leading to heavier drinking (Elgar *et al.*, 2005).

- Alcohol advertising and promotional activities are particularly appealing to young people, and can influence the development of drinking behaviour (Smith and Foxcroft, 2009). Alcohol advertising expenditure rose from £150 million to £250 million annually between 1989 and 2000 and, over the same period, mean weekly alcohol consumption by young people aged 11 to 15 years also rose and were highly correlated ($R = 0.995$) (Jernigan, 2001; World Advertising Research Center, 2002).
- Young people have high-level positive expectancies from drinking (Coleman and Carter, 2005).
- The home has been identified as the primary location where young people learn to drink, so parental influence and the family socialisation of drinking among this younger age group is an important consideration. An increase in home drinking among adults may be contributing to increased access to alcohol among their children.
- Related to this, intergenerational relationships and parenting practices are probably different now than in previous decades, with more permissive parenting (Valentine *et al.*, 2007).
- Parents and family friends are one of the main sources of alcohol for teenagers (Fuller, 2006). Studies have suggested that there is reduced binge drinking in older teens when parents provide alcohol, whereas other studies have shown increased drinking, particularly in girls, with imposition of strict rules on drinking (Marsden *et al.*, 2005). There seems to be a tension between providing alcohol as a means of regulating behaviour, and facilitating wider access to alcohol and creating a culture of acceptability and inevitability of drinking in teenagers.
- Young teenagers are able to buy alcohol (illegally) from shops, and to a lesser extent from pubs and bars (Matthews *et al.*, 2006). A covert survey of 1,825 targeted premises for the Home Office showed that 51 per cent of on-licences and 32 per cent of off-licences

were selling alcohol to the under-18s (Institute of Alcohol Studies, 2007).

- A study of young people aged 10 to 19 years living in deprived communities found that the three most common reasons for drinking in this age group were: friends did it and it looked like fun; a desire to experiment and see what it was like; and to follow the example of family members and relatives (Talbot and Crabbe, 2008).
- Recent policy efforts have focused on older teenagers and binge drinking, so increased drinking among younger age groups has not been effectively addressed by prevention efforts.

It is notable that many of these possible factors would not necessarily lead to different effects on younger versus older teenagers. Therefore the most compelling consideration when trying to explain the rising trend in consumption among 11 to 13 year olds compared with older teenagers and young adults is the influence of parents, family, friends and the home environment. A recent Joseph Rowntree Foundation study (Valentine *et al.*, 2007) reported that the home is increasingly where young people learn to drink and, as such, young people's drinking habits need to be understood and addressed in relation to parental attitudes to and use of alcohol. The implication of this is clear: we cannot understand drinking among young people unless we understand what is going on in their families; the family socialisation of alcohol use and misuse in young people is a key area for further research.

Conclusions and recommendations

The main topics in need of further research arising from this review are the following.

More information is needed to determine how aware people are that their drinking behaviour may be harmful to their health. What is their knowledge about alcohol content of commonly consumed alcoholic beverages? Do people know what safe drinking limits are and what are their perceptions of the risks of excessive consumption? What are the causes and consequences of current and future

drinking patterns? Given that increased knowledge does not always lead to a change in behaviour, more research exploring why this is so is required.

More research is needed to evaluate if screening for alcohol misuse and delivery of a brief intervention designed to reduce alcohol consumption is an effective strategy in women. A recent Cochrane Systematic Review (Kaner *et al.*, 2007) has suggested that brief interventions might not be as effective in women and has proposed that more research is required.

More research is needed to find out what parents of young people perceive to be acceptable in terms of quantity and frequency of drinking at different ages. When and why do parents and family members provide alcohol to their children? What guidelines do they expect their children to follow in terms of drinking behaviour and how do they enforce those guidelines?

In terms of health education, it would be useful to determine what young children want to know and how they would like this information to be delivered.

Greater knowledge of the influence of the family on drinking is required. More research is required on the socialisation of drinking in young people, paying attention to gender and age.

Policy and practice implications

Careful monitoring of women's drinking is required to determine whether the current trends continue to increase or taper off, whether heavy drinking patterns in younger women continue as women age and whether new generations will follow these recent trends and patterns.

While greater awareness among drinkers about the amount of alcohol that can damage health is required, effective health education strategies that incorporate approaches that facilitate behaviour change are needed.

Evidence-based prevention efforts to reduce risk drinking in young people are required. Several Cochrane Systematic Reviews have identified the importance of developing appropriate social norms and skills, and the role of parents in supporting this (Faggiano *et al.*, 2005; Foxcroft *et al.*, 2002; Gates *et al.*, 2006).

Routine monitoring of alcohol consumption across England, Scotland, Wales and Northern Ireland using consistent alcohol consumption measures will aid interpretation of future trends. Increased recruitment of under-represented groups such as different ethnic groups would improve making reliable comparisons between survey years.

List of abbreviations

BBPA	British Beer and Pub Association
CHS	Continuous Household Survey
COICOP	Classification of Individual Consumption by Purpose
ESPAD	European Schools Project on Alcohol and other Drugs
FAB	Flavoured alcoholic beverages
FES	Family Expenditure Survey
GHS	General Household Survey
HBSC	Health Behaviour in School-aged Children
HEPS	Health Education Population Survey
HPA	Health Promotion Agency
HSE	Health Survey for England
IBSS	International Bibliography of Social Sciences
ONS	Office for National Statistics
PAF	Postal address file
RPI	Retail Price Index
SDD	Smoking, drinking and drug use studies (Fuller, 2006, 2008)
SHS	Scottish Health Survey
WHO	World Health Organization
WHS	Welsh Health Survey
YPBAS	Young Persons' Behaviour and Attitudes Survey

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Appendix 1: Search terms used in electronic database searches

Search strategy MEDLINE via OVID SP, 1966 to February week 4 2008

- 1 exp Health Surveys/mt, ep, td [Methods, Epidemiology, Trends]
- 2 exp cohort studies/ or exp cross-sectional studies/
- 3 exp Longitudinal Studies/
- 4 exp prevalence/
- 5 cohort.ab,kw,kf,tw,ti.
- 6 prospective.ab,kw,kf,tw,ti.
- 7 "survey*".ab,kw,kf,tw,ti.
- 8 "questionnaire*".ab,kw,kf,tw,ti.
- 9 longitudinal.ab,kw,kf,tw,ti.
- 10 cross sectional.ab,kw,kf,tw,ti.
- 12 "cross*sectional".ab,kw,kf,tw,ti.
- 13 panel study.ab,kf,kw,ti,tw.
- 14 exp Alcohol Drinking/ep, sn, td, hi [Epidemiology, Statistics & Numerical Data, Trends, History]
- 15 exp Alcoholic Beverages/sn, hi [Statistics & Numerical Data, History]
- 16 "alcohol*".ab,kw,kf,tw,ti.
- 17 "drink*".ab,kw,kf,tw,ti.
- 18 consumption.ab,kw,kf,tw,ti.

- 19 misuse.ab,kw,kf,tw,ti.
- 20 "bing*".ab,kw,kf,tw,ti.
- 21 "trend*".ab,kf,kw,ti,tw.
- 22 "pattern*".ab,kw,kf,tw,ti.
- 23 exp Great Britain/ep [Epidemiology]
- 24 UK.ab,kw,kf,tw,ti.
- 25 United Kingdom.ab,kw,kf,tw,ti.
- 26 great britain.ab,kw,kf,tw,ti.
- 27 england.ab,kw,kf,tw,ti.
- 28 scotland.ab,kw,kf,tw,ti.
- 29 wales.ab,kw,kf,tw,ti.
- 30 ireland.ab,kw,kf,tw,ti.
- 31 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124
- 32 125 or 126 or 127 or 128 or 129 or 130 or 131
- 33 132 or 133
- 34 134 or 135 or 136 or 137 or 138 or 139 or 140 or 141
- 35 142 and 143 and 144 and 145

Search strategy International Bibliography Social Sciences via OVID, 1951 to February week 4 2008

- 1 exp surveys/
- 2 exp Cohorts/
- 3 exp Longitudinal studies/
- 4 exp consumption patterns/
- 5 exp Panel surveys/ or exp Panel data/

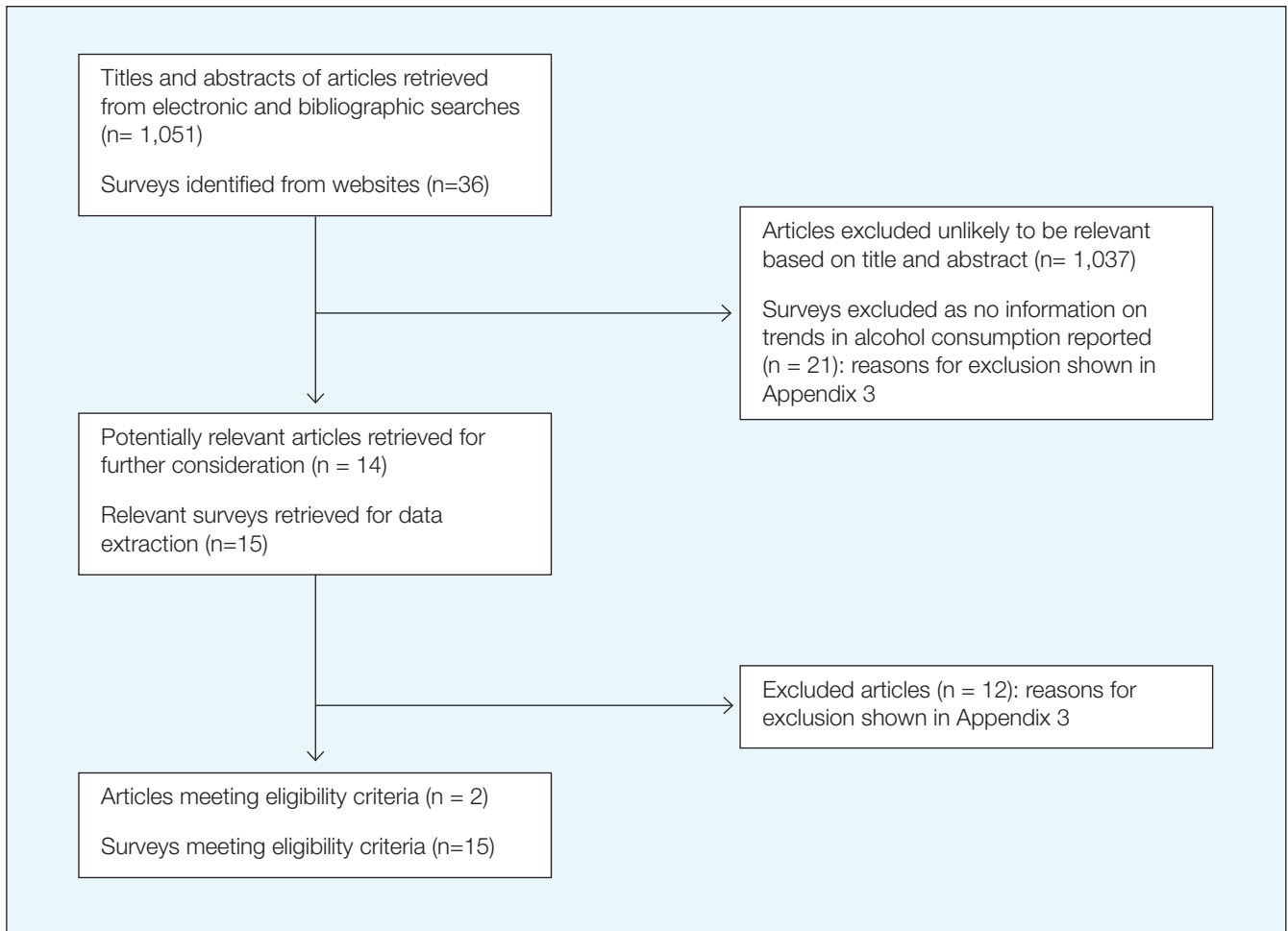
6 cohort.ab,ti.	31 1 or 2 or 3 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
7 prospective.ab,ti.	32 4 or 21 or 22
8 "survey*".ab,ti.	33 15 or 16 or 17 or 18 or 19 or 20
9 "questionnaire*".ab,ti.	34 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30
10 longitudinal.ab,ti.	35 31 and 32 and 33 and 34
11 cross sectional.ab,ti.	
12 cross-sectional.ab,ti.	
13 "cross*sectional".ab,ti.	
14 panel.ab,ti.	
15 exp alcohol/ or alcoholic beverages/	
16 "alcohol*".ab,ti.	
17 "drink*".ab,ti.	
18 consumption.ab,ti.	
19 misuse.ab,ti.	
20 "bing*".ab,ti.	
21 "trend*".ab,ti.	
22 "pattern*".ab,ti.	
23 great britain.ab,ti.	
24 england.ab,ti.	
25 scotland.ab,ti.	
26 wales.ab,ti.	
27 ireland.ab,ti.	
28 UK.ab,ti.	
29 United Kingdom.ab,ti.	
30 exp United Kingdom/	

Search strategy BIOSIS Previews via OVID, 1969 to 2008 Week 11

1 cohort.ab,kw,kf,tw,ti.
2 prospective.ab,kw,kf,tw,ti.
3 "survey*".ab,kw,kf,tw,ti.
4 "questionnaire*".ab,kw,kf,tw,ti.
5 longitudinal.ab,kw,kf,tw,ti.
6 cross sectional.ab,kw,kf,tw,ti.
7 "cross*sectional".ab,kw,kf,tw,ti.
8 panel study.ab,kf,kw,ti,tw.
9 "alcohol*".ab,kw,kf,tw,ti.
10 "drink*".ab,kw,kf,tw,ti.
11 consumption.ab,kw,kf,tw,ti.
12 misuse.ab,kw,kf,tw,ti.
13 "bing*".ab,kw,kf,tw,ti.
14 "trend*".ab,kf,kw,ti,tw.
15 "pattern*".ab,kw,kf,tw,ti.
16 UK.ab,kw,kf,tw,ti.
17 United Kingdom.ab,kw,kf,tw,ti.
18 great britain.ab,kw,kf,tw,ti.

- 19 england.ab,kw,kf,tw,ti.
- 20 scotland.ab,kw,kf,tw,ti.
- 21 wales.ab,kw,kf,tw,ti.
- 22 ireland.ab,kw,kf,tw,ti.
- 23 exp Public Health/ or exp Population Studies/
or exp Epidemiology/
- 24 exp Psychiatry – Addiction: alcohol, drugs,
smoking/
- 25 exp UK/
- 26 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 23
- 27 9 or 10 or 11 or 12 or 13 or 24
- 28 14 or 15
- 29 16 or 17 or 18 or 19 or 20 or 21 or 22 or 25
- 30 26 and 27 and 28 and 29

Appendix 2: The review selection process



Appendix 3: Reasons for exclusion of articles and surveys

Table A3.1: Additional publications excluded as did not meet review inclusion criteria

Reference	Reason for exclusion
Allan, C.A. and Cuthbert, J. (1990) 'Glasgow Council on alcohol trends and developments in a community based voluntary organization 1968–1989', <i>Health Bulletin (Edinburgh)</i> , Vol. 48, No. 5, pp. 238–42	Not a survey of the general population reporting trends in alcohol consumption
Bhopal, R. and Vettini, A. <i>et al.</i> (2004) 'Review of prevalence data in, and evaluation of methods for cross cultural adaptation of, UK surveys on tobacco and alcohol in ethnic minority groups', <i>British Medical Journal</i> , Vol. 328, No. 7431, pp. 76–80	No trends in alcohol consumption – review of methods used to collect data on tobacco and alcohol use in minority ethnic groups
Boland, M. and Fitzpatrick, P. <i>et al.</i> (2006) 'Trends in medical student use of tobacco, alcohol and drugs in an Irish university, 1973–2002', <i>Drug and Alcohol Dependence</i> , Vol. 85, No. 2, pp. 123–8	Not a national general population survey, university students in one university only
Cartwright, A.K.J. and Shaw, S.J. <i>et al.</i> (1978) 'The relationships between per capita consumption drinking patterns and alcohol related problems in a population sample 1965–1974, Part 1, Increased consumption and changes in drinking patterns', <i>British Journal of Addiction</i> , Vol. 73, No. 3, pp. 237–46	Not a national general population survey, residents of one London borough only, two time points sampled and only 286 respondents in second survey
Dunbar, G.C. and Morgan, D.D. (1987) 'The changing pattern of alcohol consumption in England and Wales 1978–85', <i>British Medical Journal Clinical Research Edition</i> , Vol. 295, No. 6602, pp. 807–10	Two different general population surveys conducted at two time points with similar but not the same methodology, small sample size (n = 926)
Foxcroft, D.R. and Lowe, G. <i>et al.</i> (1995) 'Teenage drinking: a 4-year comparative study', <i>Alcohol and Alcoholism</i> , Vol. 30, No. 6, pp. 713–9	Two different regional surveys of pupils in schools in Hull conducted at two time points with similar but not the same methodology, small sample size (n = 1,180)
Gill, J. and O'May, F. (2007) 'How "sensible" is the UK Sensible Drinking message? Preliminary findings amongst newly matriculated female university students in Scotland', <i>Journal of Public Health</i> , Vol. 29, No. 1, pp. 13–16	Not a survey of alcohol consumption trends, survey of knowledge relating to safe drinking guidelines among university students
Hajat, S. and Haines, A. <i>et al.</i> (2004) 'Patterns and determinants of alcohol consumption in people aged 75 years and older: results from the MRC trial of assessment and management of older people in the community', <i>Age and Ageing</i> , Vol. 33, No. 2, pp. 170–7	Associations between alcohol consumption and socio-economic and health variables investigated in one arm from a cluster randomised controlled trial
Meilman, P.W. and Stone, J.E. <i>et al.</i> (1990) 'Alcohol consumption by college undergraduates: current use and 10-year trends', <i>Journal of Studies on Alcohol</i> , Vol. 51, No. 5, pp. 389–95	Comparison of alcohol consumption in surveys conducted in USA
Morgan, M. and Grube, J.W. (1997) 'Correlates of change in adolescent alcohol consumption in Ireland: implications for understanding influences and enhancing interventions', <i>Substance Use and Misuse</i> , Vol. 32, No. 5, pp. 609–19	Survey of two cohorts of school children in Dublin, Republic of Ireland
Smart, R.G. (1989) 'Is the postwar drinking binge ending cross-national trends in per capita alcohol consumption', <i>British Journal of Addiction</i> , Vol. 84, No. 7, pp. 743–8	Trends in per capita alcohol consumption in 33 developed countries
Smith, C. and Moore, L. <i>et al.</i> (1994) 'Health-related behaviour in Wales, 1985–1990', <i>Health Trends</i> , Vol. 26, No. 1, pp. 18–21	Awaiting assessment – unavailable

Table A3.2: Surveys excluded as insufficient information on trends over time

Survey	Reason for exclusion
Allied Dunbar National Fitness Survey	No trends over time, alcohol consumption at one time point only
British Crime Survey	No data on alcohol consumption available in survey reports
British Social Attitudes Survey	No alcohol consumption data, attitudes to public drunkenness
Community Attitudes Survey	No alcohol consumption data, attitudes to public drunkenness, attitudes and knowledge about drinking
Home Office Citizenship Survey	Attitudes to and knowledge about alcohol, involvement with voluntary alcohol services, drinking location and behaviour at one time point only
International Passenger Survey	No data on alcohol consumption
Millennium Survey of Poverty and Social Exclusion	Symptoms of addiction at one time point only
National Diet and Nutrition Survey	No trends available for alcohol consumption
National Food Survey	No data on alcohol consumption
National Survey of Activity and Health	Attitudes to alcohol as a cause of harm, CAGE scores at one time point only
National Survey of Ethnic Minorities	No trends over time, alcohol consumption at one time point only
National Survey of NHS patients	Drinking location, where alcohol purchased for one time point only
National Survey of Sexual Attitudes and Lifestyles I and II	No trends available for alcohol consumption
Northern Ireland Life and Times Survey	One time point, attitudes to alcohol, public drunkenness
Offending Crime and Justice Survey	No data on alcohol consumption
Scottish Crime Survey	No data on alcohol consumption
Scottish Household Survey	No data on alcohol consumption
Scottish Social Attitudes Survey	Attitudes to drink driving, alcohol as a cause of harm, location of drinking at one time point only
UK Time Use Survey	No trends over time, alcohol consumption at one time point only
Young Life and Times Survey	Drinking location, views on drinking, influence of peers
Youth Lifestyle Survey	No trends over time, alcohol consumption at one time point only

Appendix 4: Survey details

Table A4.1 : Studies reporting trends in drinking in adults

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
General Household Survey 2006 (GHS)	Great Britain	Adults living in private households, aged at least 16 years (before 1988 minimum age was 18 years for drinking questionnaire)	Multi-stage cluster sampling procedure from the electoral register pre-1982 then postal address file (PAF)	Typically about 13,000 households and 20,000 individuals	72%	Face-to-face interviews	Beverage-specific volume and frequency (twelve-month beverage-specific quantity and frequency, seven-day frequency introduced 1998), maximum daily amount drunk last week and average weekly consumption introduced 1998	1 unit of alcohol = a half pint of normal-strength beer, lager or cider, a single measure of spirits, a glass of wine, or a small glass of sherry or other fortified wine 2006 reflects changes in average glass size and increasing strength of drinks – 2 units alcohol = a glass of wine, 0.5 pint or small can strong beer (adults only); small can normal-strength beer or alcopop = 1.5 units
ONS Omnibus Survey 2007	Great Britain	Adults living in private households, aged at least 16 years	Multi-stage stratified random sample using small users' PAF	2007 3,500 households of which 2,229 interviewed	64%	Face-to-face interview	Beverage-specific volume (normal volume, type of alcoholic drink drunk most frequently) and knowledge about alcohol and health	1 unit of alcohol = a half pint of normal-strength beer, lager or cider, a single measure of spirits, a glass of wine, or a small glass of sherry or other fortified wine 2006 updated conversion same as GHS

Table A4.1: Studies reporting trends in drinking in adults cont.

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
Health Survey for England 2006 (HSE)	England	Adults and children living in private households, children aged 2–15 years from 1995, infants aged 0–1 year from 2001. Some years general population sample reduced and sample from certain sectors of population boosted (2002 – children and young adults, 2005 – adults >65 years, 1999 – minority ethnic groups)	Multi-stage stratified random sample drawn from PAF	Typically 16,000 adults, 10,000 households, 2,000 children	73%	Face-to-face interviews for adults, self-completed alcohol questionnaire for under 18 year olds	Beverage-specific volume and frequency (twelve-month beverage-specific quantity and frequency, seven-day beverage-specific frequency 13–15 year olds), general frequency 8–15 year olds, binge drinking, drunkenness, symptoms of addiction, attitudes to alcohol From 2006 drinking more than recommended amounts changed in line with GHS (> 4 units from 4 units or more)	1991 to 2005 same as GHS 1 unit of alcohol = a half pint of normal-strength beer, lager or cider, a single measure of spirits, a glass of wine, or a small glass of sherry or other fortified wine, small bottle or can alcopops 2006 updated conversion
Health Survey for Scotland 2003 (SHS)	Scotland	Adults and children living in private households plus child boost sample from non-participating households	Multi-stage stratified random sample using PAF	7,900 adults 16–64, 1998 included children 2–15 and adults 65–74, 2003 no age limits, 2003 8,148 adults and 3,324 children	67 to 77%	Face-to-face interviews + self-completed questionnaires for under 18 year olds	Beverage-specific quantity and frequency (twelve-month and seven-day) CAGE questionnaire asked of participants 16+, social context of drinking also ascertained	1 unit = half pint beer or lager, small glass wine or measure spirits

Table A4.1 : Studies reporting trends in drinking in adults cont.

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
Health Education Population Survey 2005 (HEPS)	Scotland	Adults living in private households aged 16 to 74 years	Multi-stage cluster random sample using PAF	Around 1,800 interviews except 1999 when only 880 were interviewed	70%	Face-to-face interview	Beverage-specific volume and frequency (twelve-month and seven-day), knowledge of alcohol and health	
Welsh Health Survey 2007 (WHS)	Wales	Adults aged at least 16 years living in private households, plus small amount of data for children from surveyed households	Random sample using PAF, multi-stage probability design with appropriate stratification	16,673 adults, 3,578 children	67% of adults and 67% of children	Household interviewed to ascertain eligibility, individuals self-completed questionnaire	Consumption of alcohol (frequency and volume on an average drinking day, most units consumed on any one day in last seven days)	1 unit = half pint beer or lager, small glass wine or measure spirits; 1 pint strong beer, lager, stout or cider or 1 alcopop = 1.5 units
Continuous Household Survey 2006/07 (CHS)	Northern Ireland	Adults aged at least 16 years living in private households	Systematic random sample of domestic addresses drawn each year from the Land and Property Services Agency (LPSA). The LPSA addresses are sorted by district council and ward, so the sample is effectively stratified geographically	4,500 households	65%	Face-to-face interview of household and an individual interview with each person aged 16 and over	Beverage-specific volume and frequency (twelve-month and seven-day), alcohol consumption a non-core item	Not reported

Table A4.2: Studies reporting trends in drinking in young people

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
Smoking, drinking and drug use in young people (2007) (SDD)	England, some years include pupils from Scotland and Wales. Data for Scotland included in SALSUS (see below); data for Wales not available separately	Secondary school children aged 11–15	Multi-stage stratified random sample	Varies from 3,065 pupils in 129 schools in 1988 to 9,202 pupils in 305 schools in 2005	55% overall for schools and pupils	Self-completed questionnaire in school	Volume, frequency, types of alcohol, days of week alcohol drunk, place of purchase	1 unit = half pint ordinary-strength beer, 25ml spirits, 125cl wine, single pub measure sherry or fortified wine. Strength and volume assumed to be same regardless of brand and glass size due to impracticalities of collecting detailed data, does not take into account changing trends in alcohol by volume (ABV)
Health Survey for England 2006 (HSE)	England	Children living in private households aged 2–15 years	Multi-stage stratified random sample drawn from PAF	Typically 2,000 children	73%	Self-completed alcohol questionnaire in the home	Seven-day beverage-specific frequency 13–15 year olds, general frequency 8–15 year olds	1991 to 2005 same as GHS – 1 unit of alcohol = a half pint of normal-strength beer, lager or cider, a single measure of spirits, a glass of wine, or a small glass of sherry or other fortified wine, small bottle or can alcopops

Table A4.2: Studies reporting trends in drinking in young people cont.

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
Health Promotion Agency 2003 (HPA) secondary analysis of HBSC and YPBAS	Northern Ireland	Secondary school children aged 11–15 years	Identical in both surveys, random sample of schools and classes within schools	Over 6,000 pupils	80, 85 and 89% for 1997, 2000 and 2003, respectively	Self-completed questionnaire in school	Ever tried alcohol	Not reported
Scottish Schools Adolescent Lifestyle and Substance Use Survey 2006 (SALSUS)	Scotland	Secondary school children in years S2 and S4 (13 and 15 year olds)	Multi-stage stratified random sample of schools and classes within schools	Target 23,000	69% schools and 82% pupils, 57% overall	Self-completed questionnaire in school	Ever tried alcohol, frequency of drinking, context of drinking and acceptability	Not reported
Health Survey for Scotland 2003 (SHS)	Scotland	Private households plus child boost sample from non-participating households (aged 8 to 15 years)	Multi-stage stratified random sample using PAF	2003 3,324 children	67 to 77%	Self-completed questionnaire in the home	Ever tried alcohol, frequency of drinking, age of first use, volume and context of drinking	1 unit = half pint beer or lager, small glass wine or measure spirits
European Schools Project on Alcohol and Other Drugs 2003 (ESPAD)	UK	Secondary school children 15 to 16 years old	Stratified cluster sample	Target 2,800 students, 77 schools	84%	Self-completed questionnaire in school		Not reported

Table A4.2: Studies reporting trends in drinking in young people cont.

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of alcohol consumption	Drinking outcomes	Measuring alcohol consumption
Health Behaviour in School-aged Children 2006 (HBSC)	Multinational study including England, Scotland, Wales and Northern Ireland	Secondary school children aged 11, 13 and 15 years		Target 4,500		Self-completed questionnaire in school	Drank alcohol in last week	Not reported

Table A4.3: Studies reporting trends in alcohol expenditure

Survey	Location	Population	Sample method	Sample size	Response rate	Ascertainment of spending	Alcohol outcomes	Notes
Expenditure and Food Survey 2007	UK	All adults aged at least 16 years living in private households	Multi-stage stratified random sample drawn from small users' file of the PAF	6,785 households responded, Northern Ireland about 500 respondents	57% Great Britain, 50% Northern Ireland	Face-to-face interviews and diaries	Two-week, beverage-specific purchase diary, source – where alcohol purchased from	Households responding differ from those not responding. Response lower in Greater London, higher in non-metropolitan areas, with age of head of household, born outside UK and minority ethnic group

Appendix 5: Precision of percentage estimates

Table A5.1: 95 per cent confidence intervals for a percentage estimate based on a simple random sample

Estimated %	Sample size											
	100	200	300	400	500	1,000	2,000	3,000	4,000	5,000	10,000	15,000
5	4.3	3.0	2.5	2.1	1.9	1.4	1.0	0.8	0.7	0.6	0.4	0.3
10	5.9	4.2	3.4	2.9	2.6	1.9	1.3	1.1	0.9	0.8	0.6	0.5
15	7.0	4.9	4.0	3.5	3.1	2.2	1.6	1.3	1.1	1.0	0.7	0.6
20	7.8	5.5	4.5	3.9	3.5	2.5	1.8	1.4	1.2	1.1	0.8	0.6
25	8.5	6.0	4.9	4.2	3.8	2.7	1.9	1.5	1.3	1.2	0.8	0.7
30	9.0	6.4	5.2	4.5	4.0	2.8	2.0	1.6	1.4	1.3	0.9	0.7
35	9.3	6.6	5.4	4.7	4.2	3.0	2.1	1.7	1.5	1.3	0.9	0.8
40	9.6	6.8	5.5	4.8	4.3	3.0	2.1	1.8	1.5	1.4	1.0	0.8
45	9.8	6.9	5.6	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
50	9.8	6.9	5.7	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
55	9.8	6.9	5.6	4.9	4.4	3.1	2.2	1.8	1.5	1.4	1.0	0.8
60	9.6	6.8	5.5	4.8	4.3	3.0	2.1	1.8	1.5	1.4	1.0	0.8
65	9.3	6.6	5.4	4.7	4.2	3.0	2.1	1.7	1.5	1.3	0.9	0.8
70	9.0	6.4	5.2	4.5	4.0	2.8	2.0	1.6	1.4	1.3	0.9	0.7
75	8.5	6.0	4.9	4.2	3.8	2.7	1.9	1.5	1.3	1.2	0.8	0.7
80	7.8	5.5	4.5	3.9	3.5	2.5	1.8	1.4	1.2	1.1	0.8	0.6
85	7.0	4.9	4.0	3.5	3.1	2.2	1.6	1.3	1.1	1.0	0.7	0.6
90	5.9	4.2	3.4	2.9	2.6	1.9	1.3	1.1	0.9	0.8	0.6	0.5
95	4.3	3.0	2.5	2.1	1.9	1.4	1.0	0.8	0.7	0.6	0.4	0.3

The width of the interval depends on the value of the estimated percentage and the sample size on which it was based. 95 per cent confidence intervals are generated as the estimated percentage \pm the value shown in the table for that sample size. For example, an estimated percentage of 40 per cent based on a sample size of 1,000 has a 95 per cent confidence interval of 40 ± 3.0 per cent (i.e. 37 to 43 per cent). The data in this table assumes a simple random sample; data from complex designs is likely to have higher standard errors and wider confidence intervals than shown, and should be used as a rough guide only.

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