

# Understanding the relationship between poverty and alcohol misuse

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## About this report

This rapid review of the evidence on poverty and alcohol misuse was commissioned by the Joseph Rowntree Foundation as part of their programme to develop Anti-Poverty Strategies for the UK. The purpose of the rapid review is to provide an evidence base that the Joseph Rowntree Foundation can use in developing their Anti-Poverty Strategies, enabling them to decide how to address alcohol misuse within the Strategies.

The findings of the rapid review are presented across five chapters.

- Chapter 1** presents an introduction to the issues around alcohol consumption, summarising existing knowledge on the risks and benefits of alcohol consumption to health, to others and related issues of stigma and marginalisation. It also identifies the definitions used in this report for problem alcohol use and presents prevalence figures on problem alcohol use in the UK.
- Chapter 2** provides a summary of the methods used to collate the evidence used in the rapid review. More detail on the methods is also provided in Appendix 1.
- Chapter 3** presents the findings from a review of the correlations between poverty and problem alcohol use. This chapter also summarises the research evidence for the mechanisms and pathways that may link poverty and problem alcohol use.
- Chapter 4** presents a summary of the evidence on the effectiveness and cost-effectiveness for policies and interventions targeting problem alcohol use.
- Chapter 5** brings together and discusses the findings from the two review elements and attempts to draw out implications for research and policy.

## Acknowledgements

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## 1. Introduction

Alcohol use is one of the top five leading risk factors for death and loss of health in the UK (Murray et al., 2013). In addition to the well-established relationship between alcohol and the development of a number of different disease and health problems, its consumption also has social and economic consequences both to the individual and society. Most adults in the UK consume alcohol (Health and Social Care Information Centre, 2015) and its use both influences, and is influenced by, social and cultural norms.

### 1.1 Risks and benefits of alcohol consumption?

Observational studies suggest that light to moderate levels of alcohol consumption are associated with cardiovascular benefits (Roerecke and Rehm, 2012). However, researchers have argued that most of the physiological mechanisms that may explain alcohol's protective effects only apply to an overall low level of consumption and patterns of regular drinking that do not vary (Rehm et al., 2003). For drinkers that include any heavy or binge drinking occasions in their overall volume of drinking, light to moderate drinking is unlikely to have any protective effect. A further challenge to the concept of protective effects of alcohol on cardiovascular health have arisen through analysis using a genetic approach (Holmes et al., 2014c). The protective effects of drinking may also in part be explained by the association between drinking habits and social characteristics. Light to moderate alcohol consumption has been found to be an indicator of 'optimal' social status, such as being in good cardiovascular health (Hansel et al., 2010), and studies also show that abstainers are more likely to have unhealthy lifestyles and poorer psychosocial factors than moderate drinkers (Fekjær, 2013). Alcohol consumption is also a cause of some types of cancer and research shows there is no level of consumption that can be considered 'safe' from the risk of cancer (World Cancer Research Fund/American Institute for Cancer Research, 2007).

Complications arise in identifying risky patterns of drinking because of methodological issues encountered in the literature and particular problems with distinguishing between single occasion binge drinking and chronic heavy drinking (Gmel et al., 2011). This has implications for how messages about harms and benefits are conveyed to, and viewed by, a general audience. Perceptions and beliefs about the risks associated with alcohol consumption are shaped through public and policy debates and Holloway et al. (2008) have argued that in England these have been "overly biased towards problem drinking in public spaces". This may consequently lead people to regard their own risky drinking practices as unremarkable (Valentine et al., 2007).

### 1.2 Effects of problem alcohol use on others

The impact of alcohol on others is extensive, ranging from minor inconvenience to more severe impacts such as alcohol-related road traffic deaths and interpersonal violence (Giesbrecht et al., 2010, Laslett et al., 2010). Taking a UK focus, a report on the impact of the drinking of others in Scotland documented the wide range of harms experienced among the population both in public and private settings (Hope et al., 2013). This survey found that a greater proportion of those in lower social classes reported problems with friends and neighbours, were harassed at a party or in some other private setting, had family problems or marriage difficulties and were harmed physically. Problem alcohol use can disrupt family structures and functions (Velleman and Templeton, 2007). Alcohol use is a contributory factor in domestic violence (World Health Organization, 2006), and a recent meta-analysis found clear evidence that alcohol use and domestic violence are associated for both males and females (Foran and O'Leary, 2008). Parenting capacity is also affected by alcohol use and children living with parental alcohol misuse may experience neglect or abuse (Cleaver et al., 2011). Internationally, studies have reported a rate of involvement of alcohol in 13-70% of substantiated child protection cases, with one Australian study showing that parental alcohol misuse is related to more intensive child protection outcomes, such as progress to protective interventions and court orders (Laslett et al., 2012).

### 1.3 Stigma and marginalisation

How people respond to others' alcohol use exacerbates harm (World Health Organization, 2007). Alcohol dependence is a highly stigmatized health condition and as Room (2005) argues, "the use of alcohol [and drugs] is strongly moralized, and those transgressing moral norms are subject to stigma and social marginalization". The relationship between alcohol

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<sup>1</sup> Social grade C2DE classified according to the occupation of the chief income earner (C2 = skilled)

dependence and stigma particularly manifests itself through the perception that those affected have personal control over their illness (Livingston et al., 2011). The WHO Expert Committee on Problems Related to Alcohol Consumption noted that “there a clear tendency for many cultures to marginalize particularly those who are both poor and habitually intoxicated, and that there are many pathways by which poverty can enable or exacerbate the stigmatization of intoxication” (World Health Organization, 2007). People who are poor or living in poverty may be less able to avoid or buffer the social consequences of their drinking unlike their more affluent counterparts. Police surveillance of ‘anti-social behaviour’ such as public drunkenness may also be heightened in poor communities. Thus in affluent societies, the WHO Expert Committee (World Health Organization, 2007) highlighted “that there is a very strong overlap between the most marginalized population and those defined as having serious alcohol problems”.

## 1.4 Definitions of problem alcohol use

Various terms are used to refer to alcohol consumption that poses risk, and operational definitions vary internationally. For the purposes of this rapid review we have used the following definitions based on Whitlock et al. (2004):

- Risky/Hazardous drinkers: those exceeding daily, weekly, or per occasion thresholds;
- Harmful drinkers: those that exhibit physical, social, or psychological harm, without meeting criteria for dependence;
- Alcohol dependent drinkers: those that continue to use alcohol despite significant negative physical, psychological and social consequences.

Screening questionnaires used to detect problem alcohol use include the Alcohol Use Disorders Identification Test (AUDIT), the Fast Alcohol Screening Test (FAST) and CAGE. For assessing the severity of dependence on alcohol, the Severity of Alcohol Dependence Questionnaire (SADQ) may be used in clinical settings to subdivide alcohol dependent drinkers into categories of mild, moderate and severe. People with mild dependence (e.g. SADQ score  $\leq 15$ ) usually do not need assisted alcohol withdrawal; people with moderate dependence (e.g. SADQ score 15–30) usually need assisted alcohol withdrawal, typically managed in the community; and people with severe alcohol dependence (e.g. SADQ score  $>30$ ) need assisted alcohol withdrawal, typically in an inpatient/residential setting.

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<sup>2</sup> In the UK, this is above the government’s recommended daily drinking limits of 4 or more units a day for men and 3 or more units a day for women.

<sup>3</sup> Based on four clinical questions focusing on Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers; hence the acronym CAGE.

<sup>4</sup> Results from the 2014 Adult Psychiatric Morbidity Survey (also known as the National Study of Health and Wellbeing) are expected to be available in 2016.

## 1.5 Prevalence of problem alcohol use

National household surveys provide the most reliable estimates of the prevalence of problem alcohol use in the population. However, surveys do not commonly include assessment of harmful drinking or dependence. We are therefore currently reliant on data from the 2007 Psychiatric Morbidity Survey of adults in England (Fuller et al., 2007). This survey used the AUDIT to assess hazardous and harmful drinking, and SADQ to assess symptoms of dependence. According to this survey, almost a quarter (24%) of adults were hazardous drinkers and 4% were also harmful drinkers. Hazardous drinking was most common in younger age groups among both men and women and became less likely with increasing age. For example, of men aged 25 and 34 years, 46% were classed as hazardous drinkers and 12% were also harmful drinkers. Around 6% of adults in England had experienced symptoms of alcohol dependence ranging from mild to severe dependence. Alcohol dependence varied with age with younger men and women more likely to show some degree of dependence; however, cases of severe dependence are most commonly found in adults aged 35 years and older.

### What is the extent of problem alcohol use among people living in poverty

As there are no figures available to determine what proportion of the estimated 13 million adults who live in poverty overlap with the categories of problem drinkers the extent of the problem is unknown.

According to Public Health England (2014), around 9 million adults in England are hazardous drinkers with 2.2 million also harmful drinkers. An estimated 1.6 million adults in England may have some degree of alcohol dependence. Of these, around 250,000 may be moderately or severely dependent on alcohol. According to the 2007 Psychiatric Morbidity Survey, 8.5% of men and 3.0% of women in the lowest income quintile had experienced any symptoms of alcohol dependence in the last 6 months; 2.5% and 0.1%, respectively, had experienced moderate or severe symptoms of dependence that would indicate a need for assisted alcohol withdrawal.

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<sup>5</sup> After housing costs. Taken from Households Below Average Income, Department for Work and Pensions, June 2015. [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/437246/households-below-average-income-1994-95-to-2013-14.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437246/households-below-average-income-1994-95-to-2013-14.pdf)

## 2. Methods

This work was based on a rapid review of the existing literature in order to better understand:

- The hypothesised pathways and mechanisms linking poverty and deprivation to problem alcohol use; and
- The extent and strength of the evidence for the effectiveness and cost-effectiveness of policy and practice interventions that might impact on the pathways linking poverty and problematic alcohol use.

The research proceeded in accordance with JRF's own definition of poverty (when a person's resources (mainly their material resources) are not sufficient to meet their minimum needs (including social participation)). However we considered relevant, studies examining poverty and deprivation through relevant associated concepts such as socioeconomic status (SES), economic position and material deprivation. Poverty is a complex construct (Krieger, 2001), which can be difficult to conceptualise and measure (Hauser and Carr, 1995, Walker et al., 2010) and empirical studies have tended to use other indicators such as measures of the social and economic position of individuals and groups. SES has been defined as an individual's or group's social and economic position in relation to others, typically measured across the domains of income, educational attainment and occupational grade (Kawachi et al., 2002). According to the American Psychological Association (2007) the fundamental conceptualisation of SES involves access to resources, including goods and services (e.g. education, healthcare) as well as access to information and social resources. SES has often been treated as a unified concept, but Cutler et al. (2008) argue that this is not correct noting that "SES consists of not one but many dimensions, which relate to health in diverse ways". Krieger (2001) notes that the term, SES, "arbitrarily privileges 'status' over material resources as the key determinant of socioeconomic position". Thus resource-based measures of social and economic position, which refer to material and social resources and assets, may be more interchangeable with terms used to describe inadequate resources such as poverty and deprivation.

Chapter 3 in this report (Review of the relationship between poverty and problem alcohol use) examines the association between poverty and alcohol use using studies that have examined problem alcohol use as the exposure and poverty as the outcome of interest, and vice versa. The research primarily focused on work undertaken in the UK, but was broadened to include studies conducted in other developed countries and published in English where relevant. As evidence was gathered on the pathways and mechanisms linking poverty and problem alcohol use, qualitative evidence that provides further context to the quantitative findings is highlighted.

The purpose of the work was to enable the Joseph Rowntree Foundation and other stakeholders to better understand targets of action for potential policy and practice interventions, and so Chapter 4 of the report (Review of effectiveness and cost-effectiveness for policies and interventions) reviews evidence for the effectiveness and cost-effectiveness of approaches that might impact on the pathways identified. This was achieved through a rapid review of high quality systematic reviews and the conceptual framework developed in the first stage of research guided the evidence synthesis, and the development of policy and practice recommendations.

Further details of the methods used in compiling the evidence for this report is provided in Appendix 1.

## 3. Review of the relationship between poverty and problem alcohol use

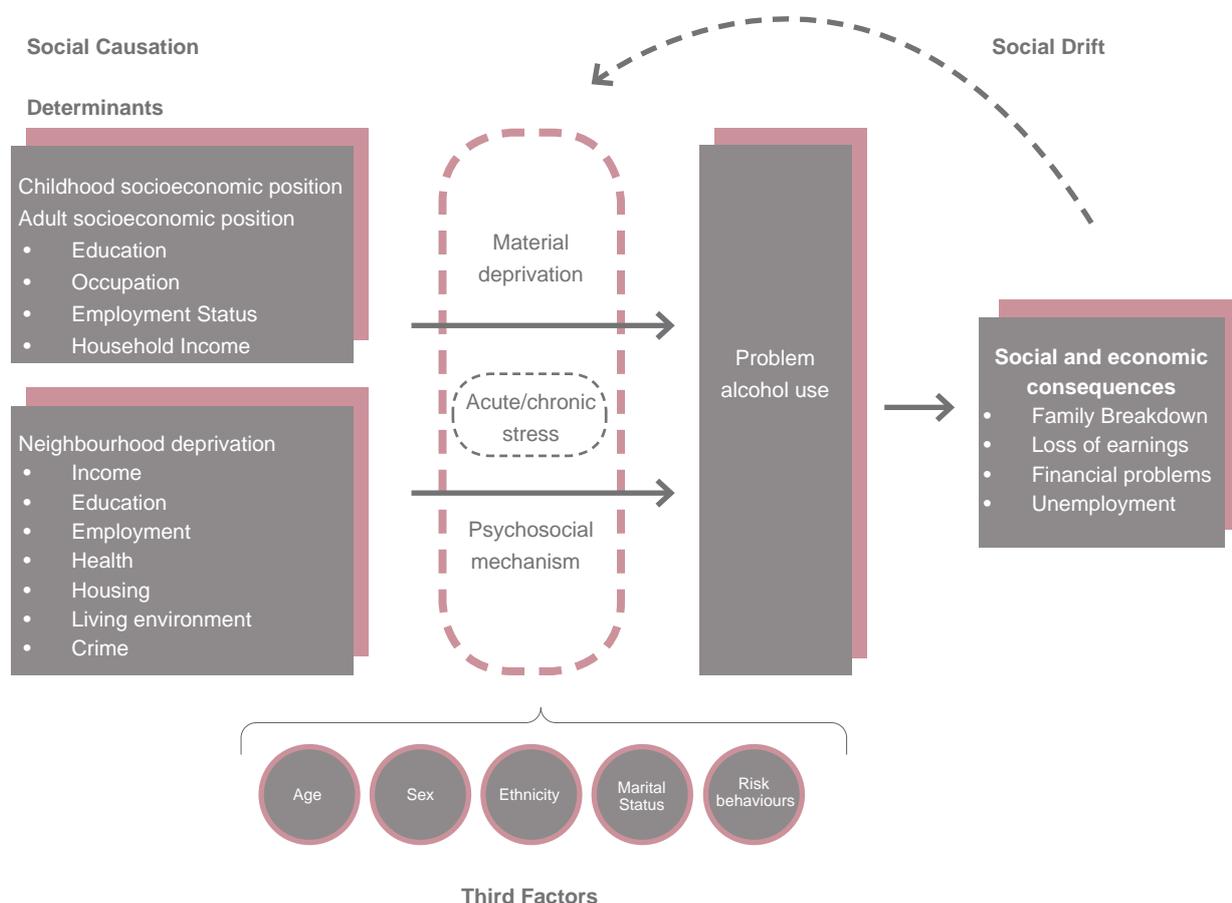
### 3.1 Introduction

Alcohol-related problems affect individuals and groups across social and economic strata but there is a growing literature on how social and economic standing relate to alcohol-related harm (Jones et al., 2015). In this section we explore the relationship between poverty and problem alcohol use in an attempt to understand the causal links and examine the UK evidence for how much problem alcohol use is both a response to, and a driver of, poverty. Establishing the temporal relationship is crucial and there must be clear evidence that the cause precedes the effect, whether this be poverty and problem alcohol use and vice versa. In Section 3.3 we draw on analyses of large UK cohort studies that shed some light on the temporal relationship between socioeconomic position over the lifecourse and problem alcohol use in midlife. However, first we consider what is known about the association between deprivation and problem alcohol use to establish the need to explore the relationship further.

Studies conducted internationally show a clear and persistent gradient in the risks of alcohol-related death by SES, such that people with lower income, education or occupational status are much more likely to die or suffer from a disease related to their alcohol use (Makela, 1999, Romelsjo and Lundberg, 1996, van Oers et al., 1999). For UK men and women, analysis has shown that workers in routine occupations have an alcohol-related death rate, 3.5 and 5.7 times greater, respectively, than those in the highest occupational positions (Siegler et al., 2011). However, when we examine the association between socioeconomic disadvantage and alcohol consumption a complex relationship emerges. Studies have found that people in deprived neighbourhoods may be more likely to both abstain from alcohol than those in more affluent neighbourhoods (Kuipers et al., 2013, Galea et al., 2007, Chuang et al., 2007) and more commonly adopt heavier patterns of consumption, such as binge drinking (Matheson et al., 2011, Cerdá et al., 2010, Stimpson et al., 2007, Fauth et al., 2004, Mulia and Karriker-Jaffe, 2012). Household surveys conducted in the UK also reflect this a complex relationship, with self-reported alcohol consumption being broadly similar between low and high SES populations, but with a higher prevalence of consumption among those of higher SES (Office for National Statistics, 2013, Fuller, 2013). A recent study based on data from the Welsh Health Survey 2003/2004-2007 found that while excess consumption was more common among people living in less deprived areas, a higher risk of binge drinking was seen among residents of deprived neighbourhoods (Fone et al., 2013). Using a bespoke national alcohol survey to explore why harms disproportionately affect people living in deprived communities, research has found that people living in the most deprived communities may be more likely than those in affluent communities to adopt risky drinking patterns (Jones et al., 2015, Bellis et al., 2015).

### 3.2 Conceptual framework

At the outset of the review a conceptual framework was developed to outline assumptions about the pathways and mechanisms linking poverty and deprivation to problem alcohol use and its resulting harms. The conceptual framework was updated as the review progressed and is shown in Figure 1. Three hypotheses about the causal direction of any association between socioeconomic position and problem alcohol use outlined by Makela (1999) were influential. The social causation hypothesis states that SES affects high-risk drinking, whereas the social selection or social drift hypothesis suggests that high-risk drinking affects SES. That is, harmful use of alcohol has socioeconomic consequences for individuals, including loss of earnings, unemployment, family disruption or stigmatization (Schmidt et al., 2010). People experiencing poverty or deprivation to start with may suffer further disadvantage as a result of their harmful use of alcohol, and among those not currently affected, the socioeconomic consequences may give rise to or intensify downwards social mobility (Selin, 2005). Furthermore, Makela (1999) also alludes to additional “third” factors that may affect both SES and drinking (e.g. ethnicity).



**Figure 1. Conceptual framework; including example third factors**

The framework directs attention to the social causation hypothesis that acute and chronic stress generated by poverty and deprivation increase the likelihood of problem alcohol use. In presenting socioeconomic position and neighbourhood deprivation as the likely determinants of stress we acknowledge that there are large gaps in the evidence in terms of how and why these mechanisms act in the development of problem alcohol use. We also acknowledge that the proposed mechanisms may not be applicable across all poverty and deprivation strata, and therefore may only be relevant to particular groups. The social drift hypothesis is also characterised in the model; problem alcohol use is thought to subsequently generate further social and economic consequences for the individual, which may impact further on their social and economic position (represented by the dashed arrow).

### 3.3 Temporal relationship between poverty and problem alcohol use

The findings from longitudinal studies that shed some light on the temporal relationship between socioeconomic position over the lifecourse and problem alcohol use in midlife are discussed below and summarised in the context of hypothesised mechanisms linking poverty and problem alcohol use.

#### 3.3.1 Socioeconomic status over the lifecourse

Two studies (Jefferis et al., 2007, Caldwell et al., 2008) examined findings from the 1958 British Birth Cohort Study and a further two studies (Batty et al., 2008, Batty et al., 2012), the West of Scotland Twenty-07 Study. The 1958 British Birth Cohort study is ongoing and follows the lives of 17,000 people born in England, Scotland and Wales during a single week in March, 1958. Surveys have so far been conducted in childhood at age 7, 11, and 16 years and in adulthood at age 23, 33, 42 45 and 55 years. Jefferis et al. (2007) used data from the adult surveys at age 23, 33, and 42 years to investigate associations between social position (based on level of education and social class) and 'binge' drinking. They found that across all ages, men with a low social position reported binge drinking more often than those with a higher social position; for example, at age 23, men with no qualifications had 1.63 times greater odds of binge drinking than those with higher qualifications. A different relationship was found amongst women. At age 23, women with a low social position were less likely to binge drink than those with a higher social position, but at older ages they became more likely to binge drink. Caldwell et al. (2008) analysed alcohol consumption data from the adult survey at age 45, during which participants were administered the Alcohol Use Disorders Identification Test (AUDIT) to identify heavy, problem, and binge drinkers. Participants with indicators of low SES across childhood and adulthood were at an increased risk of reporting binge and problem drinking. A less clear relationship was noted with heavy consumption. The authors reported that each additional report indicative of low SES during childhood was associated with a 7% increase in risk for midlife problem drinking. Therefore, participants with low SES at all three childhood surveys had a 21% increase in risk of midlife problem drinking. The authors also examined cumulative disadvantage over the life course and this was found to be the strongest predictor of drinking patterns in the study. They found that only participants who reported disadvantage across both adulthood and childhood ('intergenerational disadvantage') had an increased risk of midlife problem drinking. Non-, occasional- and moderate-binge drinking was predicted by disadvantage during childhood alone, whilst disadvantage in adulthood alone was not associated with an increased risk for any of the drinking patterns under investigation. Caldwell et al. (2008) suggest that alongside factors such as cultural differences and physical health, "it is feasible that socioeconomic disadvantage polarises drinking behaviour, causing some people to abstain and others to drink heavily".

The West of Scotland Twenty-07 Study followed three cohorts of people living in and around Glasgow initially recruited at ages 15, 35 and 55 years and followed for 20 years. Problem alcohol use was identified using the CAGE questionnaire. Using data from men in the oldest age group, Batty et al. (2008) found that indicators of deprivation in both early life and adulthood, and their accumulation over the life course (based on a lifetime score for socioeconomic adversity) were associated with an increased risk of midlife problem alcohol use. However in this analysis, deprivation in adulthood was more strongly associated with problem drinking than deprivation in early life. Additionally, they found that material socioeconomic indicators in adulthood (including car ownership, housing tenure) were generally associated more strongly with problem drinking than other socioeconomic factors (e.g. education, income and occupational social class). Following on from the 2008 study, Batty et al. (2012) based their analyses on men and women recruited at age 35 years. Analysis of this cohort identified evidence of differential effects between men and women of socioeconomic disadvantage on drinking patterns. Among men, socioeconomic disadvantage in adulthood was associated with increased risk of heavy weekly drinking and problem drinking. In contrast, amongst women there was no relationship between socioeconomic disadvantage in adulthood or early life and having alcohol problems.

Other studies have also concluded that socioeconomic disadvantage in adulthood has more influence on midlife drinking behaviours than disadvantage in early life. A study of middle aged men and women who participated in the Midspan Family study of adult offspring found that binge drinking was highest among men whose social class was low through childhood and adulthood, and among those termed 'downwardly mobile' (father's social class as non-manual and own social class manual) (Hart et al., 2009). Further, a study that followed men and women born in Aberdeen into middle age showed that higher adult social class was associated with a reduced risk of alcohol induced hangovers, a measure used as a proxy for binge drinking (Batty et al., 2006).

<sup>6</sup> Defined as consuming >10 units (men) and >7 units (women) per single drinking occasion

<sup>7</sup> Four clinical questions which help in making a diagnosis of alcohol dependence. The questions focus on Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers; hence the acronym CAGE.

Lawlor et al. (2005) assessed the association of childhood socioeconomic position and binge drinking in adulthood. The measure of childhood socioeconomic position was social class at birth based on father's occupation. Based on a sample of surviving cohort members from the Aberdeen Children of the 1950s study they found that low socioeconomic position at birth was a predictor of binge drinking in later life. They found that this association was largely explained by educational attainment. Adult social class and adult income had a smaller effect. In an earlier analysis of the 1958 British Birth Cohort Study, Power and Matthews (1997) found that heavy alcohol consumption (>50 units/week for men and >35 units/week for women) was associated with social class at birth among men at age 33 but not age 23. There was no association among women at either age.

### 3.3.2 Mechanisms: the role of stress

The predominant theory that has been used to explain the role of social causation in linking poverty and problem alcohol use is Conger's (1956) tension reduction hypothesis. Of relevance here is the aspect of this hypothesis that proposes that people may consume alcohol as a means of reducing, or as a response to stress. Stress is a term widely used in the biological, psychological and social sciences, being variously defined in relationship to "stressful events, responses, and individual appraisals of situations" (Cohen et al., 1995). The relationship between stress and problem alcohol use is complex, and because of this complexity, studies have generally failed to establish a clear causal relationship. Brady and Sonne (1999) highlight that among heavy drinkers, studies haven't consistently been able to distinguish which stressors "occur independent of alcohol use, cause alcohol use, or are a consequence of alcohol use". Drawing on social stress theory and the lifecourse perspective, Mossakowski (2008) proposes that it may be chronic stress created through longer durations of poverty or unemployment that increases the likelihood of heavy drinking. We did not identify any empirical evidence from the UK, but research conducted in the US with women in poverty provides useful evidence of how stress related to poverty and deprivation contributes to alcohol problems (Mulia et al., 2008). In this population, exposure to economic deprivation, stressful life events and neighbourhood disorder was shown to contribute to psychological distress, which in turn increased the likelihood of problem alcohol use. This study also explored the role of social support, which has been hypothesised to buffer against the effects of a stressful environment (Cohen and McKay, 1984). The authors' found that social support did not buffer the effects of the stressors on alcohol problems in this low income population noting that "the social networks of poor women may themselves be a source of stress and thus might actually increase, rather than mitigate, stress and problem drinking among poor women".

### 3.3.3 Neighbourhood effects

There is growing interest in documenting the role of place or context (such as neighbourhoods) in producing variations in health outcomes (Kawachi et al., 2002). Recent research has explored place of residence and the effects of the social and physical environment on alcohol consumption patterns. Studies conducted in the UK have however tended to find that area deprivation does not have an effect on alcohol consumption that is independent of the individual characteristics of the residents (Ecob and Macintyre, 2000, Steptoe and Feldman, 2001, Twigg et al., 2000). That is, these findings suggest that similar types of people (e.g. those on a low income) will adopt similar patterns of alcohol consumption no matter where they live. If area or place did matter (so called contextual effects) study findings would be expected to show that similar types of people adopt different patterns of alcohol consumption depending on where they live. Analysis of data from the Northern Ireland Mortality Study (Connolly et al., 2011), a prospective record linkage study, showed that people living in deprived area were more likely to die from alcohol-related illness than those living in affluent areas. For people living in the most deprived areas, their risk of dying from an alcohol-related cause was 2.5 times higher than those in the most affluent areas. Further analyses of the data suggested that differences in the risk of dying from an alcohol-related condition between deprived and affluent areas was associated with individual characteristics, rather than area deprivation itself exerting alcohol-related condition between deprived and affluent areas was associated with individual characteristics, rather than area deprivation itself exerting an independent effect. Thus higher alcohol related mortality rates in deprived areas may simply reflect the worse health status of the individuals who make up that area. However, internationally, studies have found associations between neighbourhood socioeconomic characteristics and alcohol use (Cerdá et al., 2010) and it is likely that contextual effects do play a role. The social nature of drinking means that people tend to influence each other's drinking behaviour as well as their own (Babor et al., 2010).

<sup>8</sup> A sociological paradigm that views social conditions as a cause of stress for members of disadvantaged social groups (Aneshensel et al., 1991).

<sup>9</sup> A lifecourse perspective "refers to how health status at any given age, for a given birth cohort, reflects not only contemporary conditions but embodiment of prior living circumstances, in utero onwards" (Krieger, 2001).

<sup>10</sup> Contextual effects relate to the broader political, cultural, or institutional context and include influences of cultural background, and certain ecological or environmental influences (Kawachi et al., 2002).

With regards to theories in this domain, it has been hypothesised that deprived neighbourhoods may provide a normative context in which hazardous drinking is not sanctioned as strongly as within more affluent neighbourhoods (Matheson et al., 2011). Based on a US study, neighbourhood norms about drinking and drunkenness have been found to be distinct aspects of the social environment, with neighbourhood norms around drunkenness being strongly associated with binge drinking (Ahern et al., 2008).

### 3.3.4 Variations in alcohol use between people, places and time

#### *Demographic Variations*

Compositional differences in ethnicity between deprived and non-deprived areas has been hypothesised as influencing local social norms for alcohol use and thus explaining lower rates of hazardous drinking in deprived neighbourhoods (Kuipers et al., 2013). This hypothesis may extend into a UK context, where Black and minority ethnic people are more likely to live in deprived neighbourhoods (Garner and Bhattacharyya, 2011). We did not find any empirical evidence from a UK perspective to explore this hypothesis and while minority ethnic groups in the UK do tend to have higher rates of abstinence and lower levels of alcohol consumption than people from white backgrounds, they have similar levels of alcohol dependence compared to the general population (Hurcombe et al., 2010). It is also important to consider that any influence on social norms and drinking habits will vary depending on the specific composition, history and circumstances of people in an area, in addition to ethnicity (Barnard and Turner, 2011).

#### *Geographic Variations*

Drinking cultures vary across the regions of the UK, and whilst embedded within wider historical, socioeconomic and cultural contexts (Valentine and Holloway, 2007), generally show a north versus south divide in patterns of harmful consumption, and to some extent this mirrors wider economic differences between the geographies. With regards to risky drinking practices (Office for National Statistics, 2015a), the proportion of hazardous drinkers exceeded the British average (30%) in the Government Office Regions (GORs) of the North East, North West, Yorkshire and The Humber, and the South West, and in Scotland. Rates of binge drinking (exceeding 8/6 units on heaviest drinking day in the last week) were also above the average for Britain (15%) in these regions (with the exception of the South West GOR). Twigg and Moon (2013) also identified pronounced regional variations in binge drinking along a north versus south divide. With regards to the patterning of alcohol-related deaths, Scotland has had the highest alcohol-related death rates of the four UK countries throughout the decade from 2004 (Office for National Statistics, 2015b). The North West of England has generally recorded the highest number of alcohol-related deaths among the English regions. Based on analysis of alcohol-related death rates between 1999 and 2003, Breakwell et al. (2007) found that in all regions in England, the most deprived two quintiles had alcohol-related death rates which were higher than the England and Wales average.

#### *Temporal variations*

Survey data suggest that the proportion of adults reporting binge drinking behaviours may have peaked in 2007, with falls among younger age groups contributing to an overall decline in the number of adults reporting these behaviours (Office for National Statistics, 2015a). The proportion of young adults aged 16-24 reporting that they did not drink alcohol at all has also risen from 19% in 2005 to 27% in 2013 (latest data available). However, prevalence of abstinence has remained relatively stable in older age groups. Similarly, the proportion of young adults reporting binge drinking (defined above) in Britain decreased from 18% in 2005 to 15% in 2013, whilst remaining relatively stable in older adults. Using data from the 2001 to 2009 Health Survey for England, Twigg and Moon (2013) found strong temporal differences in binge drinking according to deprivation and gender. However the study was affected by measurement changes in the recording of alcohol consumption (most notably wine consumption) that more effectively captured the drinking practices of those on higher incomes and in higher socioeconomic groups. As a consequence, deprivation gradients apparent in the data disappear in more recent years as a result of these measurement changes.

Although there are regional variations (see above), and despite a background of declining consumption, alcohol related mortality has remained stable since 2006 (11.9 deaths/100,000 people in 2006, 11.9 deaths/100,000 people in 2013), and 2013 saw an increase in hospital admissions related to alcohol (5% increase compared to the previous year). Finally, recent data from the annual Smoking, Drinking and Drug use among young people in England survey (Health and Social Care Information Centre, 2015) suggested that after several years of reduced consumption, the amount consumed in the last week by 11-15 year olds increased from 8.2 units in 2013 to 9.8 in 2014.

### 3.4 Problem alcohol use, employment, pay and progression

Bauld et al. (2010) undertook a comprehensive review of research that has examined the relationship between alcohol misuse and benefit uptake, employment and unemployment. This review has informed our summary of the evidence in this section.

#### 3.4.1 How does problem alcohol use affect employment?

A clear consensus on the direction of any causal relationship between employment status and different patterns of alcohol consumption has yet to be reached in the literature (Bauld et al., 2010), but studies of the impact of problem alcohol use on later employment tend to indicate that high or risky consumption predicts job loss (Backhans et al., 2012). Based on a cross-sectional analysis of data from the Health Survey for England, MacDonald and Shields (2004) report findings from an English context to suggest that problem drinking is associated with reduced employment prospects. They found that being a problem drinker was associated with a reduced probability of working of between 7 and 31%. A second study by the same authors considered the impact of alcohol on occupational attainment finding that light to moderate alcohol consumption was associated with higher mean occupational wages (Macdonald and Shields, 2000).

While studies from Europe and the US have generally shown that problem drinking is associated with unemployment (Bauld et al., 2010), few UK studies have explored the relationship. In a study of middle aged men who participated in the British Regional Heart Study, Morris and colleagues (1992) found that unemployed men were more likely to be heavy drinkers prior to unemployment, and there was no evidence to suggest that men adopted heavier drinking patterns after experiencing unemployment. However, a second UK study that assessed changes in drinking and other health behaviours after the experience of underemployment among young men (Montgomery et al., 1998) found that experience of unemployment by age 33 years was associated with greater odds of being a problem drinker. This was apparent for recent unemployment (in the last year) and accumulated unemployment ( $\geq 36$  months of underemployment). A recent US study lends weight to these findings. Mossakowski (2008) identified that the duration of poverty and involuntary unemployment across a span of 13 years significantly increases the odds and frequency of heavy drinking at ages 27–35 years.

Barriers to employment among problem alcohol users are not well characterised in the literature as most research has looked at substance use more generally (Bauld et al., 2010). Drawing on a sample of people in treatment for problem alcohol use, of which most were unemployed, qualitative exploration identified strong correlations between alcohol dependence and unemployment (Bauld et al., 2013). Many participants were motivated and keen to return to work and recognised the benefits of employment. However, they described experiencing problems across domains, including physical and mental health problems, which were preventing their return to work. The authors noted that in this respect many of the findings mirrored the facilitators and barriers faced by other groups of the unemployed, but that adults who have problems with alcohol use were also likely to face more barriers to returning to employment than those without. Individual barriers identified included wanting more time to deal with their alcohol problems, and fear of the stigma they might face as a result of their alcohol or mental health problems if they had to reveal them to a prospective employer (Bauld et al., 2010). However, as it was beyond the scope of the study, it is unknown whether in practice these barriers led to fewer people with alcohol problems finding work than their unemployed peers without alcohol problems.

#### 3.4.2 Welfare reform and problem alcohol use

Since 2008, policy attention in England has focused on the number of people accessing the main welfare benefits who are also problem alcohol or drug users. In 2008, there were an estimated 159,900 dependent drinkers in receipt of one or more 'main benefits' (Hay and Bauld, 2010); comprising around 4% of benefit claimants in that year. A causal link between disability payments and substance use (the so-called 'check effect'; i.e. payments being used to purchase substances) was first proposed based on a US study by Shaner et al. (1995). However, based on a review of the literature, Rosen (2011) concluded that overall, the evidence suggested that awarding poorer people disability benefits does not cause them to use substantially more drugs or alcohol; but rather shifts the timing of use. He notes that "people vulnerable to substance abuse are more likely to use drugs and/or alcohol around the time they receive funds, especially people whose expenditures are limited by poverty".

### 3.4.3 How is the work environment associated with problem alcohol use?

People in lower socioeconomic or social class positions are more likely to experience job insecurity and other psychosocial work stressors, such as time pressures at work and lack of control (Landsbergis et al., 2014). Studies have identified relationships between psychosocial factors at work and alcohol consumption, but while a poor psychosocial working environment has been shown to be associated with alcohol dependence and problems with alcohol use in some studies, findings from studies conducted in range of countries are not consistent (Head et al., 2004, Hemmingsson and Lundberg, 1998, Niedhammer et al., 1998, Bobak et al., 2005, Kouvonen et al., 2005, Heikkila et al., 2012). Evidence from a range of working environments in the UK is lacking, but based on the Whitehall II study of civil servants, associations between stressful psychosocial work environment and subsequent alcohol dependence have been explored (Head et al., 2004). Effort-reward imbalance in the workplace was associated with alcohol dependence in men, with those classified as putting in high efforts but receiving low rewards having the highest risk of being alcohol dependent. A weaker association was also seen among women and additionally, low decision latitude was associated with increased risk of alcohol dependence in women. A social gradient of alcohol dependence was found among women but not men. Women in higher occupational grades had a higher prevalence of alcohol dependence. Although experiences of working in the civil service may not be generalisable to other employment sectors, these findings do suggest that there is a relationship between experiences of work and alcohol use.

## 3.5 Interaction with complex needs

It has been estimated that in 2015, approximately 60,000 people in the UK experienced multiple serious needs, including mental ill health, substance misuse, offending, family breakdown, and homelessness (Drinkwater et al., 2015). Recent analysis of linked data from homelessness services ('Supporting People' and In-Form), substance misuse treatment systems (NDTMS, including both alcohol and drug use), and criminal justice systems (Offender Assessment System; OASys), suggested that 24% of alcohol treatment clients presented with additional offending and housing needs (Bramley et al., 2015). Only 9% of individuals who experienced problems in all three domains were in employment or training. Whilst this group is relatively small in number, their complex needs result in high service and societal costs. Although previous work has investigated relationships between individual needs with alcohol misuse or poverty (McDonagh, 2011, Fazel et al., 2008, Zabkiewicz et al., 2014) little research has been undertaken examining the moderating effects of additional (multiple) needs on the relationship between the two. The majority of literature identified in the current review focused on simple relationships and interactions between indicators of poverty and alcohol use, and so whilst it is not currently possible to fully understand associations with complex needs, it is important that they are at least acknowledged.

### 3.5.1 General vulnerability hypothesis

In accordance with general vulnerability hypotheses (e.g. Zubin and Spring, 1977), these additional needs may reduce the threshold at which individuals become susceptible to an adverse outcome (e.g. emergence of mental ill health may precede both problematic alcohol use and loss of employment), or reduce the protective effects of other factors (e.g. imprisonment may lead to family breakdown which otherwise protected against alcohol use and promoted economic activity). Similarly, alcohol use, poverty, or the interaction between the two may reduce the protective effects of factors partly associated with additional needs (e.g. alcohol use leads to the breakdown of those social networks that helped maintained employment or were protective against vulnerability to homelessness) (Sosin and Bruni, 1997).

### 3.5.2 Adverse childhood experiences

The impact of complex needs is also temporally and socially determined, and research into Adverse Childhood Experiences (ACE; defined as those co-occurring intra-familial events or conditions causing chronic stress responses in the child's immediate environment (Kelly-Irving et al., 2013), including family alcohol abuse) suggests that early years experiences may have long lasting effects on health and wellbeing (Anda et al., 2006, Fergusson et al., 1994, Rosenman and Rodgers, 2004). For example, in one recent cross sectional retrospective study conducted in the North West of England, the prevalence of self-reported heavy drinking (defined as drinking six or more drinks in a single episode at least once a week) was almost four times higher (adjusted odds ratio 3.72 [95% CI 2.37–5.85]) in those reporting four or more ACE, compared to those reporting none (Bellis et al., 2014). Similarly, those reporting four or more ACE were also

<sup>11</sup> Decision latitude refers to a person's ability to make work-related decisions.

three times as likely to be unemployed or currently on long-term sickness (adjusted odds ratio 2.94 [95% CI 2.01–4.31]). However, this research did not investigate the impact of ACE on the interaction between alcohol use and poverty.

Secondary analysis of the USA National Longitudinal Survey of Youth suggested that a history of family poverty and alcoholism in childhood was associated with respondents' own alcohol use and income as adults (Kost and Smyth, 2002). Those who reported living with an alcoholic relative for nine or more years and reported living in poverty for more than six years were more likely to report increased alcohol problems and lower income of their own. Interestingly, this relationship was non-linear, and those respondents who reported living with an alcohol family member for one to three years had the highest average incomes when childhood poverty was at the low and moderate levels, and the lowest average income when childhood poverty was high. The authors suggested that this finding may have been due to the resilience and motivation derived from growing up in such an environment, but when deprivation was too high, this counteracted personal agency.

### 3.6 Summary

#### Key Findings

- This section sought to better understand the pathways and mechanisms linking poverty and deprivation to problem alcohol use but these are poorly understood.
- UK studies suggest that people who experience social and economic disadvantage in early life or adulthood are at greater risk of adopting problem drinking behaviours in later life. Intergenerational disadvantage appears to generate higher risks of problem drinking than disadvantage at a particular life stage.
- There is insufficient evidence to establish that problem alcohol use is a cause of poverty in the UK. While problem alcohol use inevitably has social and economic consequences for some, people who are poor or living in poverty may be less able to avoid or buffer these consequences and are at a greater risk of marginalisation because of their drinking behaviours than people who are more affluent.
- It is not possible to establish a clear relationship or pathway between alcohol consumption and employment, pay and progression as evidence from recent studies is lacking.
- A sparse evidence base precludes an understanding of the associations between problem alcohol, poverty and other complex needs at this time.

The findings from UK cohort studies provide evidence to suggest that social causation plays a role in the development of problem alcohol use in midlife. That is, people who experience social disadvantage in early life or adulthood are at greater risk of adopting problem drinking behaviours later in life. There was some inconsistency across studies as to whether deprivation in childhood or adulthood had the greater impact on patterns of drinking. However, the finding that intergenerational disadvantage is associated with a higher risk of problem drinking than disadvantage at a particular life stage (Batty et al., 2008, Caldwell et al., 2008) has been identified in studies conducted internationally (Cerdá et al., 2011, Mossakowski, 2008).

We did not identify any UK studies that examined the association in the reverse direction, whether problem alcohol use is a cause of poverty, and this limits our understanding of the longitudinal effects of individual alcohol use on social migration or 'social drift' in a UK context. Based on data from the US Michigan Longitudinal Study, Buu et al. (2007) found that the more alcohol problems men had, the more likely they were to remain in, or migrate to an area of socioeconomic disadvantage. So while it would appear likely that both social causation and social drift play a role we cannot on the basis of current evidence available be certain that problem alcohol use causes poverty or vice versa in the UK. There is also a lack of evidence from a UK context on the role of prolonged, repeated, or generational exposure to neighbourhood poverty in the development of problem alcohol use and the studies reviewed here have only considered neighbourhood poverty at one point in time. Cerdá et al. (2010) highlight the need to consider the impact of short- versus long-term exposure to poverty. Their longitudinal study shows that cumulative exposure to poverty was associated with higher

levels of drinking, whereas short-term exposure was associated with binge drinking. This study therefore highlights the need for future UK studies to consider the dynamic nature of poverty when considering its relationship to problem alcohol use.

We did not identify a clear relationship or pathway between alcohol consumption and employment, pay and progression. Evidence from more recent studies is lacking and it is therefore unknown how relevant the findings reported here are to current labour market conditions. Risky or heavy alcohol consumption has been shown to predict unemployment, and unemployment increase the odds of problem alcohol use among young men. Policy attention in recent years has focused on people accessing benefits who are also problem alcohol users. Contemporary research has established that there is no causal link between payment of benefits and substance use but people with alcohol dependence may experience barriers to finding and sustaining employment because of co-occurring physical and mental health problems.

The evidence on how other complex needs interact with problem alcohol use is sparse. The majority of literature identified here focused on simple relationships and interactions and so it is not possible to fully understand associations between problem alcohol, poverty and other complex needs at this time.

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<sup>12</sup> See Smith and Middleton, 2007.

## 4. Review of effectiveness and cost-effectiveness for policies and interventions

### 4.1 Introduction

In this section, we draw on recent systematic reviews and evidence overviews to examine evidence on the effectiveness and cost-effectiveness of policies and interventions that might impact on the pathways linking poverty and problem alcohol use. As no reviews of evidence for the effects on poverty of alcohol interventions were identified, we focus on evidence for the effectiveness and cost-effectiveness of policies and interventions that aim to prevent and reduce problem alcohol use and highlight evidence of relevance to tackling poverty and deprivation.

### 4.2 Policies and interventions that aim to prevent and reduce problem alcohol use

Successive governmental alcohol strategies have sought to prevent alcohol-related harm to the population through the use of both individual and whole population approaches (Department of Health, 2007, HM Government, 2012). Motivation for policies based on a whole population approach has been provided by evidence of close links between overall mean consumption in the population and the prevalence of alcohol-related harm (Norström and Ramstedt, 2005). In this domain, Skog's theory of the collectivity of drinking behaviour has been highly influential (Skog, 1985). Researchers have extensively debated the theory; arguing for the need for greater empirical testing (Rehm, 2014, Gmel, 2014) and also for "a more sophisticated theoretical model of how alcohol consumption changes within a population" (Livingston and Room, 2014). These limitations notwithstanding, from a whole population perspective, evidence suggests that policy measures targeting price, availability and the promotion of alcoholic drinks may be effective and efficient ways of tackling problem alcohol use across all consumers of alcohol (Anderson et al., 2009, Babor et al., 2010). Key regulatory levers to address alcohol availability include limiting or reducing alcohol outlet density and different pricing and taxation policy approaches. Pricing policy options considered by the Government in the last five years have included changes to taxation, bans on selling alcohol "below cost" and minimum pricing (Hunt et al., 2010). The Coalition Government's alcohol strategy published in March 2012 included a commitment to introduce a minimum unit price for alcohol (HM Government, 2012). However this commitment was delayed following the outcome of a consultation in July 2013 as there was not perceived to be convincing evidence that the policy would not unfairly penalise 'responsible drinkers' (Home Office, 2013). The Government instead introduced a ban on the sale of alcohol below cost price. This policy means that a can of average strength lager cannot be sold for less than 40p and a standard bottle of vodka cannot be sold for less than £8.89 (Woodhouse and Ward, 2015). Policy developments in Scotland have diverged from those in England and Wales with an attempt to introduce minimum unit pricing into licensing laws through legislation in the Alcohol (Minimum Pricing) (Scotland) Act 2012. This action paved the way for a minimum price of 50p per unit but a legal challenge in the EU courts has delayed its introduction (Woodhouse and Ward, 2015).

Individual approaches, in the form of targeted interventions for hazardous and harmful drinkers, aim to make people aware of the potential risks they are taking at an early stage (National Institute for Health and Care Excellence, 2010). The need for a broad spectrum of early identification for people affected by problem alcohol use was identified in the first English alcohol strategy published by the then Labour Government (Drummond, 2004). There is a substantial evidence base supporting the efficacy of brief interventions aimed at reducing alcohol consumption, which is discussed further in Section 4.2.4.

#### 4.2.1 Summary of effectiveness

Table 1 summarises the evidence of effectiveness for policies and interventions that aim to prevent and reduce problem alcohol use. Based on the findings from overviews of the current evidence base, researchers conclude that the strongest evidence of effectiveness is for interventions involving regulatory or statutory enforcement (Anderson et al., 2009, Babor et al., 2010, Martineau et al., 2013).

#### 4.2.2 Pricing policy measures

A large literature has established that alcohol prices and taxes are inversely related to drinking (Wagenaar et al., 2009) but there are fewer studies investigating how consumer responses to price or tax increases might differ on the basis of consumption patterns (Ludbrook et al., 2012). In addition, there is currently a limited evidence base for the effectiveness of different pricing policy measures (Martineau et al., 2013). In the UK, the development of the Sheffield Alcohol Policy Model (the Sheffield Model) has allowed the potential effectiveness and cost-effectiveness of different pricing policy measures to be modelled. The model was principally developed to estimate how price changes affect alcohol consumption and health outcomes (Purhouse et al., 2010).

On the basis of the best available evidence for various pricing policy measures, and informed by the Sheffield model, authoritative guidance from the National Institute for Health and Care Excellence (NICE) published in 2010 recommended the introduction of minimum unit pricing. Studies conducted in Canada since these recommendations were made have shown that increases in existing minimum prices has been associated with reductions in deaths wholly-attributable to alcohol and alcohol-related hospital admissions (Stockwell et al., 2011, Stockwell et al., 2013, Zhao et al., 2013). The Sheffield Model identified that minimum price policies particularly target heavy drinkers (Purhouse et al., 2010) and further analysis of the effects across income and socioeconomic distributions has found that minimum pricing would most likely reduce alcohol-related harm among harmful drinkers of low socioeconomic status (Ludbrook et al., 2012, Holmes et al., 2014b). Of relevance to this review, Holmes et al. (2014b) found that compared to harmful drinkers of a high social occupational class (managerial or professional), estimated reductions in alcohol-related deaths following introduction of a £0.45 minimum unit price were six times greater for harmful drinkers of a low social occupational class (routine or manual). Modelling has also demonstrated the potential societal value that would arise from the introduction of minimum unit pricing (Purhouse et al., 2010, Purhouse et al., 2009). Economic modelling that informed the NICE guidelines suggested total savings in the region of £4bn over a 10 year period based on a £0.40 minimum price (Purhouse et al., 2010).

#### 4.2.3 Regulating availability

Reducing or regulating alcohol outlet density is one approach to limiting the physical availability of alcohol. A large body of evidence has explored the impact of alcohol outlet density on drinking patterns and problems (Popova et al., 2009, Jackson et al., 2010a) but difficulties arise in translating this evidence into policy actions (Holmes et al., 2014a, Gmel et al., 2015). Current alcohol licensing regulations only offer a mechanism for regulating increases in outlet density but NICE public health guidance published in 2010 recommended that legislation on licensing was revised so that licensing departments can take into account the links between the availability of alcohol and alcohol-related harm when considering a licence application. However, these have not become licensing objectives in England with the consultation on the 2012 Alcohol Strategy (Home Office, 2013) noting that “local processes and data collection are insufficient” for their implementation.

Whether a greater concentration of alcohol outlets in deprived neighbourhoods contributes to the social gradient in alcohol-related harms is unclear. Scribner et al. (2000) identified evidence to suggest that neighbour level alcohol outlet density is significantly associated with alcohol consumption, with residents with similar drinking patterns and drinking norms tending to aggregate in neighbourhoods predicted by outlet density. However, while studies in the US and New Zealand have shown an association between density or proximity to alcohol outlets and area level socioeconomic deprivation (Hay et al., 2009, Pollack et al., 2005), other studies show a more mixed picture (Ellaway et al., 2009). A recent Scottish study found that alcohol outlet densities were associated with alcohol-related health outcomes in four Scottish cities (Richardson et al., 2015). The study also identified a relationship between outlet densities and income deprivation, with steeper socioeconomic gradients in alcohol-related deaths in areas with higher densities of ‘off-sales’ outlets.

<sup>13</sup> The concentration of outlets involved in the retail sale of alcohol in a given geographic area; including ‘on-trade’ (e.g. bars and restaurants) and ‘off-trade’ (e.g. supermarkets and convenience stores) outlets.

<sup>14</sup> In Scotland the 2005 Licensing Act includes provision for Licensing Boards to take account of “Protecting and improving public health” in making licensing decisions.

#### 4.2.4 Targeted interventions

There is a substantial evidence base to show that screening and brief interventions in health care settings are effective and cost-effective for reducing alcohol consumption (Jackson et al., 2010b, Kaner et al., 2007, Latimer et al., 2009). However research suggests there is a marked variation in the uptake of preventive services across social classes, with people who are the most disadvantaged least likely to access them (Crombie et al., 2013). Researchers have therefore queried whether brief interventions are less effective for people who are disadvantaged. Littlejohn (2006) reviewed literature that examined the acceptability, attendance and outcomes for screening and brief interventions but found a lack of evidence on which to draw conclusions.

### 4.3 Specialist treatment and recovery from alcohol dependence

In the last few years, since 'recovery' has been made more explicit as a goal of treatment in policy, alcohol and drug treatment services in the UK have undergone a system transformation (Home Office, 2012, Scottish Government, 2008). Alongside this, commissioning of drug and alcohol services has moved to become the responsibility of local authorities. The UK Government views a recovery orientated system as encompassing education, training, employment, housing, family support services, wider health services and, where relevant, prison and probation to support sustained recovery (HM Government, 2010). Particular emphasis has been placed on the value of recovery in helping people with a dependence on alcohol to return to employment and on the 'transformative potential' of paid work (Monaghan and Wincup, 2013). Bauld et al. (2010) reviewed the literature on alcohol misuse, employment and benefits, finding that there is a lack of robust UK research that examines interventions intended to treat those with alcohol problems and support them to find employment or training. Drawing on the international literature, the authors identified evidence to suggest that employment programmes which are intensive and offer a structured approach, whilst remaining flexible to individual need, hold promise.

### 4.4 Summary

#### Key Findings

- Systematic reviews of evidence for the effects on poverty-related outcomes of alcohol interventions are not available. Studies that examine both the social and economic subgroup-specific effects of interventions that are aimed at whole populations and interventions targeted at social and economic subgroups are needed.
- We lack a clear understanding of whether the current theoretical basis for whole population alcohol policy and prevention measures, including minimum pricing policies, has validity in addressing the social gradient in alcohol-related harm.

While the theory that has motivated policy action based on whole population approaches has been extensively debated, it remains the focus of the public health approach to alcohol policy. Public health researchers and academics have therefore advocated for interventions that target price, availability and the promotion of alcohol as from a whole population perspective, the evidence suggests that these approaches are likely to have the greatest impact on national consumption and consequently generate the greatest reductions in alcohol-related harm. Although a social gradient in the risks of alcohol-related harm has been established, we are only at the very beginning of understanding the processes and mechanisms which may cause an excess in alcohol-related harm among people in lower social and economic positions. There is therefore a lack of evidence to make clear recommendations on which approaches to the prevention of alcohol-related harm might impact directly on the relationship between problem alcohol use and poverty. To address the best ways to reduce the gap between different social and economic groups, Makela (2008) states that we need studies both about subgroup-specific effects of interventions that are aimed at whole populations and about targeted interventions. In addition, we need to better understand whether the current theoretical basis for alcohol policy and prevention measures (i.e. Skog's model) has validity in addressing the social gradient in alcohol-related harm.

<sup>15</sup> There is no standard definition of 'Recovery' in use in the UK, but the Advisory Council on the Misuse of Drugs (ACMD) has summarised some of the interpretations in use: [www.gov.uk/government/publications/acmd-recovery-from-drug-and-alcohol-dependence-an-overview-of-the-evidence-2012](http://www.gov.uk/government/publications/acmd-recovery-from-drug-and-alcohol-dependence-an-overview-of-the-evidence-2012)

**Table 1. Summary of whole population policy and practice measures**

Policy and practice measures	Good quality systematic reviews	Findings		Applicability to UK context
		Effectiveness	Cost-effectiveness	
<b>Education and Information</b>				
School-based education	D'Onise et al. (2010), Fletcher et al. (2008), Foxcroft and Tsertsvadze (2011b), Jackson et al. (2012), Jones et al. (2007), Jones et al. (2009a), Jones et al. (2009b), Lemstra et al. (2010)	No sustained effects on behaviour. Effects are population-, programme- and setting-specific.	Low cost, but lack of evidence for cost-effectiveness (Jones et al., 2007, Anderson, 2009).	Limited; effects tend to be population- and setting-specific and few studies conducted in UK to date.
Family/Parenting programmes	Foxcroft and Tsertsvadze (2011a), Jones et al. (2010), Petrie et al. (2007)	Some types of programmes and interventions delivered to families may be effective in reducing adolescent alcohol consumption. Mixed and inconsistent effects on health and social outcomes.	Low cost, but lack of evidence for cost-effectiveness (Jones et al., 2007, Anderson, 2009)	Limited; few studies conducted in UK to date.
Social marketing programmes	Stead et al. (2007)	Some effects on alcohol use and initiation. Overlap with Community interventions.	No evidence (Anderson, 2009).	Limited; few rigorous studies conducted in UK to date.
Other; e.g. Public information campaigns; Mass media; Drinking guidelines; Health warnings	None		No evidence (Anderson, 2009)	Limited; few rigorous studies conducted in UK to date.
<b>Health Service Response</b>				
Screening and brief advice	Jackson et al. (2010b), Kaner et al. (2007)	Considerable body of evidence supportive of the effectiveness of screening and brief interventions.	Screening plus brief intervention is cost-effective in the primary care setting (Latimer et al., 2009).	Good; RCTs conducted in UK provide evidence of effectiveness.
<b>Community programmes</b>				
Community interventions	Giesbrecht (2003), Jones et al. (2010), Jones et al. (2011)	Evidence of effectiveness of systematic approaches to coordinate community resources to implement effective policies, when backed up by enforcement measures. Overlap with interventions targeting licensed premises.	No evidence (Anderson, 2009).	Limited; few rigorous studies conducted in UK to date.
Licensed premises	Bolier et al. (2011), Brennan et al. (2011), Jones et al. (2011), Ker and Chinnock (2008)	Clear evidence for effectiveness comes from multi-component interventions that combine server training with enforcement and community-level components. Overlap with community interventions.	Some evidence for cost-effectiveness (Anderson, 2009).	Limited; few rigorous studies conducted in UK to date.

**Table 1. Continued**

Policy and practice measures	Good quality systematic reviews	Findings		Applicability to UK context
		Effectiveness	Cost-effectiveness	
Workplace policies	Cashman et al. (2009), Webb et al. (2009)	Little evidence of effect in changing drinking norms and reducing harmful drinking.	No evidence (Anderson, 2009).	Limited; few rigorous studies conducted in UK to date.
Alcohol environment				
Availability	Bryden (2012), Hahn et al. (2010), Hahn et al. (2012), Jackson et al. (2010a), Popova et al. (2009)	Increases in licensing hours typically associated with increased consumption and/or harms. Introducing restrictions in days and hours of sale has mixed impact on consumption and harms.	Reduction in licensing hours associated with potential healthcare cost reductions (Purshouse et al., 2009)	Mixed; no conclusive evidence of increase in harms following introduction of UK Licensing Act 2003 (Jackson et al., 2010a); other evidence is specific to Australia, USA and Scandinavia.
Alcohol price/taxation	Booth et al. (2008), Elder et al. (2010), Jackson et al. (2010a), Wagenaar et al. (2010)	Clear association between price/tax increases and reductions in consumer demand for alcohol.	Judged highly cost-effective (Purshouse et al., 2009, Anderson, 2009)	Limited; majority of studies originate from the USA. Recent UK estimates suggest low rates of substitution between alcohol product categories when prices change (Meng et al., 2014).
Outlet density	Campbell et al. (2009), Jackson et al. (2010a)	Associations between increased outlet density and alcohol consumption among adults but limited evidence of an effect on alcohol-related harms.	Potential to generate health savings (Purshouse et al., 2009).	Limited; majority of studies originate from Scandinavia, USA and Canada.
Alcohol advertising	Booth et al. (2008), Siegfried et al. (2014)	Lack of robust evidence of effects of advertising restrictions.	Restrictions without pricing controls unlikely to be cost-effective (Purshouse et al., 2009).	Limited; majority of studies originate from USA.

## 5. Conclusions

### 5.1 Summary

This rapid review of the existing UK literature sought to better understand the pathways and mechanisms linking poverty and deprivation to problem alcohol use and the extent and strength of evidence for the effectiveness and cost-effectiveness of policy and practice interventions that might impact on the pathways linking poverty and problem alcohol use.

UK studies suggest that people who experience social and economic disadvantage in early life or adulthood are at greater risk of adopting problem drinking behaviours in later life. Intergenerational disadvantage appears to generate higher risks of problem drinking than disadvantage at a particular life stage. UK studies have not, however, considered the dynamic nature of poverty and whether it has differential impacts on problem alcohol use or patterns of drinking. In addition, the pathways and mechanisms linking poverty and problem alcohol use are poorly understood. We did not identify any longitudinal studies that examined the association in the other direction, and there is insufficient evidence to establish that problem alcohol use is a cause of poverty in the UK. While problem alcohol use inevitably has social and economic consequences for some, people who are poor or living in poverty may be less able to avoid or buffer these consequences and are at a greater risk of marginalisation because of their drinking behaviours than people who are more affluent.

Currently there is a lack of evidence to arrive at suggestions about which approaches to the prevention of alcohol-related harm might impact directly on the relationship between problem alcohol use and poverty. Taking a whole population approach to alcohol-related harm, policy measures that target price, availability and the promotion of alcoholic drinks are likely to be the most effective way of tackling problem alcohol use. Supporting a broader notion of 'recovery' and social reintegration for people who develop alcohol dependence may hold promise as a means of also tackling the social and economic consequences that accompany the illness; however robust UK research is currently lacking in this domain.

Overall this rapid review identifies a lack of empirical evidence that has examined the relationship between poverty and problem alcohol use, and vice versa. Studies have tended towards hypothesis generation rather than theory testing and we consequently understand little from a UK perspective about pathways and mechanisms linking poverty and problem alcohol use. Drawing on studies conducted in the USA has allowed us to speculate on the nature of these pathways but they require testing and validation, and relevance in UK contexts also needs to be established. While the literature has established that people of lower social and economic standing are likely to suffer greater harm from alcohol we are at an early stage of understanding why this is. Further longitudinal studies and secondary analysis are required (Jones et al., 2015) as we outline in our recommendations below.

## 5.2 Recommendations

### Research recommendations

- Overall, further longitudinal research is required to better understand the dynamic nature of poverty, its relationship with alcohol consumption, and putative mechanisms between that link the two. Accompanying qualitative research is needed to generate a more nuanced understanding of the relationships, and to better understand the impact of poverty and problem alcohol use on individuals and social groups.
- More specifically, research is needed to better understand the links between actions (both external and individually led) that facilitate routes out of poverty with problem alcohol use. It is important to better understand how the duration of poverty may influence problem alcohol use as a response to the stressors that accompany poverty. In this regard, it is important to know how factors in childhood, such as sustained poverty (that progresses into adulthood), and problem alcohol use within the family affect outcomes in adulthood. Better understanding is also needed on how specific experiences and protective factors may provide resilience in order to mitigate the impact of adverse childhood experiences.
- Despite the continued impact of the 2008 recession and governmental responses, there is still little work that has investigated how employment and income changes may have affected substance use, including alcohol. Similarly, gaps remain in our understanding of how changes in employment status and employment conditions have affected alcohol use in a UK context. Furthermore, considering the importance of what has been termed 'recovery capital' in mediating the outcomes of drug and alcohol treatment, there is a need to model changes in the employment market, including the impact of structural unemployment, on treatment and intervention effects.
- The 'alcohol harm paradox' suggests that the health harms of alcohol use are unequally distributed towards more deprived populations. It is important to better understand whether there is similar inequality with regards to social outcomes.
- There has been little research into the effects of alcohol treatment, and alcohol interventions on employment and income related indicators. A broader perspective on what constitutes 'success' in such actions is encouraged.
- Although some (limited) assessments have been undertaken, the differential impact of whole population approaches on differently deprived groups, on different drinking behaviours within those groups, and the potential of such approaches to create social inequality is not fully understood. More specifically we lack a clear understanding of whether the current theoretical basis for whole population measures has validity for addressing the social gradient in alcohol-related harm.

### Policy recommendations

- Although research evidence is limited, it is clear that there is a complex relationship between alcohol use, poverty, and (un)employment. Policy actions that are based on an assumption of a sequential relationship between these indicators are unlikely to successfully address them.
- Local licensing boards should be further encouraged to consider the impact of neighbourhood deprivation profiles in their licensing decisions.

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<sup>16</sup> The observation that deprived populations that apparently consume the same or less alcohol than more affluent populations suffer far greater levels of harm.

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## Appendix 1. Detailed methods

### Chapter 3: Review of correlations

Studies were identified through searches of three electronic sources (PsycINFO, ERIC and the Web of Science Social Sciences Citation Index). We developed a search strategy by combining keyword and thesaurus terms for poverty and problem alcohol use with search filters to retrieve evidence undertaken in the UK. Further references were identified by scanning reference lists and using citation searching within Google Scholar. An example search strategy is presented in Table 2 that was used to search PsycINFO via the EBSCO Host platform.

**Table 2. Example search strategy**

Search ID#	Search ID#
S1	(DE "Poverty Areas") OR (DE "Poverty") OR poverty
S2	(DE "Socioeconomic status") OR "socioeconomic status"
S3	(DE "Social class") OR "social class" OR (DE "Lower Class") OR "lower class"
S4	(DE "Social environments") OR "social environments"
S5	(DE "Social deprivation") OR "social deprivation"
S6	(DE "Disadvantaged") OR "disadvantaged"
S7	(DE "Educational background") OR (DE "Educational Attainment Level") OR "educational background" OR "educational attainment level"
S8	(DE "Income Level") OR (DE "Income (Economic)" OR (DE "Lower income level") OR "lower income" OR "low income"
S9	(DE "Employment status") OR "employment status"
S10	(DE "Family Socioeconomic Level") OR "family socioeconomic level"
S11	(DE "Parent Educational Background") OR "parent educational background"
S12	(DE "Parental Occupation") OR "parental occupation"
S13	TI (poverty OR social deprivation OR disadvantage*) OR AB (poverty OR social deprivation OR disadvantage*)
S14	TI ((low* n1 (class or income))) OR AB ((low* n1 (class or income)))
S15	(S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14)
S16	(DE "Alcoholism") OR "alcoholism"
S17	(DE "Alcohol abuse") OR "alcohol abuse"
S18	(DE "Alcohol intoxication") OR "alcohol intoxication"
S19	(DE "Acute alcoholic intoxication") OR "acute alcoholic intoxication"
S20	(DE "Chronic alcoholic intoxication") OR "chronic alcoholic intoxication"
S21	(DE "Binge drinking") OR "binge drinking"
S22	TI ((alcohol n1 (problem OR abuse OR misuse))) OR AB ((alcohol n1 (problem OR abuse OR misuse)))
S23	TI ((drinking n1 (harmful OR hazardous OR problem OR risky OR heavy OR excessive OR binge))) OR AB ((drinking n1 (harmful OR hazardous OR problem OR risky OR heavy OR excessive OR binge)))

**Table 2. Continued**

Search ID#	Search ID#
S24	TI (alcohol n2 disorder*) OR AB (alcohol n2 disorder*)
S25	(S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24)
S26	(S15 AND S25)
S27	PO Human NOT PO Animal
S28	S26 AND S27
S29	TI (Britain or British or Wales or Welsh or Scottish or Scots or Scotland or England or English or Birmingham or Leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or Aberdeen or Sheffield or Oxford or Bristol or United Kingdom or UK or GB) OR AB (Britain or British or Wales or Welsh or Scottish or Scots or Scotland or England or English or Birmingham or Leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or Aberdeen or Sheffield or Oxford or Bristol or United Kingdom or UK or GB)
S30	PL (Britain or Wales or Scotland or England or Birmingham or Leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or Aberdeen or Sheffield or Oxford or Bristol or United Kingdom or UK or GB) OR AF (Britain or Wales or Scotland or England or Birmingham or Leeds or London or Liverpool or Manchester or Glasgow or Edinburgh or Cardiff or Belfast or Aberdeen or Sheffield or Oxford or Bristol or United Kingdom or UK or GB)
S31	S29 OR S30
S32	S28 AND S31

The scientific rigour of relevant studies was judged according to the robustness of the data and analytical approach used. A formal assessment of quality was not undertaken but judgements about quality were made by referring to the quality appraisal checklist for quantitative studies reporting correlations and associations from the Methods for the development NICE Public Health Guidance. A coding strategy was used to concisely record information from articles judged to be relevant. This included details about study methods, participants and findings (Appendix 2). This information was used order to judge the relevance and reliability of the studies in addressing the overarching review questions. As we gathered evidence on the pathways and mechanisms linking poverty and problem alcohol use, we also took note of qualitative information that provided further context to the quantitative findings.

## Chapter 4: Review of interventions

Good quality systematic reviews on preventing and treating problem alcohol use were used to identify evidence on the effectiveness and cost-effectiveness of policy and practice interventions that might impact on the pathways linking poverty and problem alcohol use. Good quality systematic reviews were those that were categorised as high (score 9–11) or medium (score 6–8) quality on the AMSTAR quality checklist. The following three publications were used as key sources of good quality systematic reviews:

- Anderson, P., Chisholm, D. & Fuhr, D. C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *Lancet*, 373, 2234-2246.
- National Institute for Health and Care Excellence (2010). NICE guidelines [PH24]. Alcohol-use disorders: preventing harmful drinking. London, National Institute for Health and Care Excellence.
- Martineau, F., Tyner, E., Lorenc, T., Petticrew, M., et al. (2013). Population-level interventions to reduce alcohol-related harm: an overview of systematic reviews. *Preventive Medicine*, 57, 278-296.

<sup>17</sup> [www.nice.org.uk/article/pmg4/chapter/appendix-g-quality-appraisal-checklist-quantitative-studies-reporting-correlations-and-associations](http://www.nice.org.uk/article/pmg4/chapter/appendix-g-quality-appraisal-checklist-quantitative-studies-reporting-correlations-and-associations)

<sup>18</sup> [amstar.ca/index.php](http://amstar.ca/index.php)

## Appendix 2. Evidence tables for longitudinal studies

Author, Year	Population details	Exposure & Outcome Measures	Findings	Recommendations for policy & practice
Lawlor et al., 2005	7,184 individuals born in Aberdeen between 1950 and 1956 (Aberdeen Children of the 1950s Cohort Study).	Childhood socioeconomic position based on father's occupation.  Binge drinking defined as consumption of 4 or more alcoholic drinks in 1 episode at least once a week.	After adjustment for gender and age, adult social class, social class status at birth was associated with increased odds of binge drinking (AOR 1.17; 95% CI: 1.01, 1.34).	Increase educational attainment.
Batty et al., 2006	Cohort of 12,150 people born in Aberdeen who took part in a school based survey in 1962 (Aberdeen Children of the 1950s Cohort Study).	Childhood socioeconomic position (father's occupational social class at birth, number of siblings, housing tenure, car ownership). Adult socioeconomic position (educational attainment, housing tenure, car ownership, income, occupational social class).  Frequency of hangovers dichotomised at two to three times per month or more.	In an unadjusted model, adult indices of socioeconomic advantage predicted a reduced risk of hangover. Childhood indices of socioeconomic advantage did not.	Verbal comprehension and reasoning should be considered when designing health promotion materials, and in health professional-client interactions.
Batty et al., 2008	Population-representative cohort study of 576 men from the West of Scotland (West of Scotland Twenty-07 Study). Three cohorts recruited at around age 15, 35, and 55 years in 1987/8.	Early socioeconomic circumstances: paternal occupational social class (Registrar General's schema), family structure, number of siblings, age at leaving school. Adult socioeconomic circumstances: occupational social class (Registrar General's schema), employment status, income (total household earnings after tax), housing tenure, household crowding, owned a car/van, marital status.  Lifetime composite score for socioeconomic adversity, experience of disadvantage on any measure contributed a single point to the score. Three indices: early life socioeconomic position, range: 0–3; adult socioeconomic position, range: 0–7; life course socioeconomic position, range: 0–10.  Heavy weekly drinkers had exceeded the recommendations for sensible weekly intake.	Socioeconomic deprivation, both early and in adulthood, was associated with an increased risk of heavy weekly and heavy daily drinking and for problem drinking. Total adult disadvantage was related to each of the three alcohol outcomes. Compared to childhood deprivation, the gradients for adult deprivation were markedly stronger for heavy daily drinking and problem drinking.	Efforts to increase educational achievement are likely to be most profitable by targeting younger people.

Appendix 2. Continued

Author, Year	Population details	Exposure & Outcome Measures	Findings	Recommendations for policy & practice
		(21 units for men, 14 units for women). Heavy daily drinkers had exceeded 4 units (men) and 3 units (women) on at least one day in the previous week. Problem drinking identified from a total CAGE score of 2 or more.		
Batty et al., 2012	Population-representative cohort study of 1,218 men and women from the West of Scotland (West of Scotland Twenty-07 Study).	As Batty et al., 2008.	Social disadvantage in men, particularly later in the adult life course, was associated with an increased risk of heavy weekly drinking. There was typically a null or reverse association in women.	[None]
Caldwell et al., 2008	Nationally representative British birth cohort (1958 British Birth Cohort study).	<p>Occupational socioeconomic position (non-manual vs. manual; categorised by the British Registrar General Classifications).</p> <p>Intergenerational disadvantage measure was comprised of participants who reported either manual socioeconomic position or non-owner/buyer tenure (i) in childhood only (1-4 disadvantages; 5-6 disadvantages), (ii) in adulthood only (1-4 disadvantages) and (ii) across both periods (2-6 disadvantages; 7-8 disadvantages; 9-10 disadvantages); distinguished from those with (iv) neither childhood or adulthood.</p> <p>Heavy drinkers: drinking above UK sensible drinking guidelines. High problem drinkers: scoring <math>\geq 3</math> problem drinking items on AUDIT. Binge drinkers: drank <math>\geq 6</math> drinks on one occasion, at least once a week (men and women); or usually consumed <math>\geq 5</math> (women) or <math>\geq 7</math> (men) drinks at least 2-4 times a month. Moderate-binge = binge but not heavy or problem drinkers; Low-Problem Heavy = Low problem and Heavy (regardless of binge); Problem = problem drinking regardless of heavy or binge.</p>	Disadvantage in childhood and adulthood was associated with increased risk of moderate-binge drinking and problem drinking at age 42 years, but not with low-problem heavy drinking. Risk ratios for moderate-binge and problem drinking were particularly strong for those with multiple disadvantages.	Policy approaches may benefit from incorporating the notion that drinking patterns are likely to have different predictors as well as outcomes.

Appendix 2. Continued

Author, Year	Population details	Exposure & Outcome Measures	Findings	Recommendations for policy & practice
Hart et al., 2009	1,040 sons and 1,298 daughters aged 30–59 years from 1,477 families (Midspan Family Study).	<p>Own social class (using Registrar General’s Classification of Occupations) and father’s social class. Social mobility was defined as stable non-manual (father’s and own social class non-manual), upwardly mobile (father’s social class manual and own social class non-manual), downwardly mobile (father’s social class non-manual and own social class manual) and stable manual (father’s and own social class manual).</p> <p>Four measures of alcohol consumption: consumed alcohol on 5 or more days in a week; exceeded 21 units (men) and 14 units (women) in a week; exceeded 4 units (men) and 3 units (women) on at least 1 day; exceeded 8 units (men) and 6 units (women) on at least 1 day.</p>	Downwardly mobile men generally had the highest proportion exceeding the weekly and daily limits.	Targeting of action towards downwardly mobile men.
Jefferis et al., 2007	Nationally representative British birth cohort (1958 British Birth Cohort study); followed up at age 23, 33 and 42 years.	<p>Highest qualification achieved by age 33 (higher education, A level, O level, &lt;O level or no qualifications). Current or most recent occupation at age 33 years (categorised by the Registrar General’s classification).</p> <p>Binge drinking, limits of <math>\geq 10</math> units (men) and <math>\geq 7</math> units (women) per occasion.</p>	Less educated men had greater odds of binge drinking at all ages. Less educated women less likely to binge drink at age 23 years but more likely at older ages. Similar pattern seen with social class.	Policies should take account of the tendency for inequalities in binge drinking to persist for long periods during adult life.
Power & Matthews, 1997	Nationally representative British birth cohort (1958 British Birth Cohort study); followed up at age 23 and 33 years (n=11,407).	<p>Father’s occupation at time of birth (Registrar General’s 1950 classification).</p> <p>Heavy alcohol consumption: &gt;50 units/week for men; &gt;35 units/week for women.</p>	Heavy alcohol consumption was not strongly associated with class of origin. Association at age 33 but not age 23.	Investment in educational and emotional development through preschool care and education, work place environment.

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