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Chapter 10

Addictive substances and behaviours and socioeconomic development

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10.1 Introduction to the relationship between addictive substances and behaviours and socioeconomic development

This chapter considers the interplay of socioeconomic factors with a set of habit-forming behaviours, and the social and health problems that may result from them. The behaviours for consideration, as in the rest of this book, include the use of alcohol, tobacco, and other psychoactive substances. While the patterns we discuss are also often applicable to gambling and other behavioural addictions, the main focus of this chapter will be on psychoactive substances, for which population-based research findings are globally available and robust. The socioeconomic factors to be considered include the relative penury or affluence of a society, and the socioeconomic status of people and families within a given society. These factors are set in a context of consideration of socioeconomic development at a global level—of rising though unevenly distributed standards of living globally—and the implications for addictive behaviours and for population rates of social and health problems arising from those behaviours.

Rising affluence has many positive impacts on the health and well-being of populations. Through improved sanitation, public health infrastructures, and access to education, economic development brings populations across the 'epidemiological transition' towards declining rates of prevalence of and mortality from infectious diseases (Wilkinson, 1996). However, development typically increases disposable income, and people often use that income to consume more alcohol, drugs, tobacco, and highly processed 'hyper-palatable' foods, as well as to gain digital access to potential sources of 'process disorders', such as internet gambling, gaming, and pornography. The growing prosperity of societies around the globe is, from the perspective of addictive substances and experiences, a double-edged sword. Under global trade regimes, commercial interests are often free to promote consumption and nullify market restrictions sought by nations and communities. Producers today have a virtually unfettered capacity to market many pleasure-inducing substances and experiences globally—but particularly in the 'emerging markets' of the developing world. Thus, development puts populations at risk for chronic, non-communicable 'diseases of affluence' that have afflicted the West for generations. Put differently, addictions may in their own right warrant the designation, 'diseases of development'.

In this chapter we review what is known about how socioeconomic variations in development are affecting the uneven burden of alcohol, illicit drugs, tobacco, and other habitual behaviours between

and within societies around the globe. First, we define development and its functions in the production of addiction-related health risks and inequities. Secondly, we examine how, as societies undergo the process of development, the concentration and commercialized production of addictive products promotes their widespread use and growth in social inequities in health-related harms. Thirdly, we review socioeconomic variation in patterns of use and related problems, within and between societies, for the most common, best-researched addictive substances. We conclude with a brief discussion of those movements of thought and action that can counter the trends towards rising rates of use and social inequities in addictive disorders.

10.2 Harm from use of psychoactive substances and addictive behaviours

There have been a number of comparative ratings of the intrinsic harmfulness of different psychoactive substances (e.g. Hilts, 1994; Hall et al., 1999; Roques, 1999; Gable 2004; Strategy Unit, 2005; Nutt et al., 2007, 2010). While the ratings often consider various dimensions of harm separately, they tend to be summarized in terms of a single overall dimension. Often there is substantial unease and controversy over these ratings because the rank order of harmfulness clearly differs from both popular conceptions of relative harmfulness and from the legal standing and classifications of the substances in international and national laws (Room, 2006b). In particular, cannabis has tended to be rated as relatively less harmful than its legal status assumes, and alcohol as more harmful. In recent years, as more attention has been paid to harm from substance use to others around the user (e.g. Room et al., 2010; Melberg et al., 2011; Borch, 2012), alcohol's rank has moved higher; indeed it was ranked as the most intrinsically harmful substance in the most recent such ranking (Nutt et al., 2010). In a separate literature, issues concerning the intrinsic harmfulness of different forms of and settings for gambling have also been given consideration (e.g. Blaszczynski et al., 2001).

There are of course factors other than the substance or behaviour itself that contribute to the potential risk at a particular occasion or setting. The mode of use (oral, nasal, by intravenous injection, etc.) is one such factor, with injection drug use (IDU) generally being the most hazardous mode, at least in terms of potential overdose. Such considerations are brought into play in objections to the rankings (e.g. Caulkins et al., 2011), although such objections ignore the fact that the legal classifications of the substances, with fateful consequences for those arrested under the laws, are on a single dimension of presumed danger (Room, 2011). Thinking in terms of overall population harm from a substance or behaviour, the prevalence and intensity of use or the behaviour is of course potentially as important as intrinsic harmfulness, and factors such as mode, set, and setting of use are also important. Most obviously in the occurrence and sequelae of social problems, but also for health harms, the extent of harm also often reflects the reactions of others to the behaviour (Room, 2005).

As further discussed later, the harms from addictive behaviours often differ according to socioeconomic status, whether we are considering the status of society as a whole or an individual. All the factors we have mentioned as affecting the occurrence of harm are potentially in play for different levels of socioeconomic status.

10.3 Defining development, inequity, and related concepts

Economic development generally refers to sustained actions that promote improvement in the standard of living and economic health of a specific area. The scope of development includes the process and policies by which a nation improves the economic, political, and social well-being of its people (World Bank, 2012). In the absence of counteracting policies, development typically leads to an uneven distribution of wealth and social benefits—including those between so-called 'developed' and 'developing' societies, as well as among socioeconomic groups or classes within a country's borders. Economic inequities tend to foster health inequities, with the latter referring to inequalities in health status or functioning between members of different social categories. One socioeconomic differentiation is in terms of the development status of the society in which a person lives—does the person live in a rich, a middle-income or a poor society? It is well recognized that there is a strong but not perfect relationship between this and general life expectancy in the society, as in the World Health Organization's differentiations of countries in terms of levels of infant mortality and adult life expectancies. We will use these differentiations as a surrogate for development status (Wilkinson and Marmot, 2003).

A second kind of social differentiation occurs within a given society, particularly for differentiations that are socially recognized and affect social standing as well as access to resources. These include social class and socioeconomic status, but also such differentiations as gender, age, family status and ethnic affiliation.

Socioeconomic differentiations between societies and within societies are often related to the patterns and intensity of substance use and addictive behaviours, although these are also affected by history and cultural and political factors. A separate issue is variation in the risks that a given pattern and intensity of consumption behaviour will result in adverse health and social effects. Such risks are usually greater for poorer than for richer people and populations. Thus, for a given level or pattern of population-wide use, addiction-related harms will generally be greater in poorer societies than in more affluent societies. However, within any given society, differentiations between rich and poor will produce further health inequities, often leading to a disproportionate burden of harm falling on the most poorly resourced groups. For chronic effects of heavy drinking such as liver cirrhosis, for instance, there will often be a worse outcome because of the existence of cofactors such as nutritional deficiencies or liver infections (Room et al., 2002: 119–124). Where there is unequal treatment or access to resources, the health and injury consequences of a given level or pattern of substance use are also likely to be more severe for those with less resources.

The more serious consequences for poorer people and populations with heavy substance use or addictive behaviour are often a direct result of their restricted circumstances. An older, less well-maintained car may offer less protection in a drink-driving crash, family members may have less private space to avoid a drunken relative, in a poorer society the social safety-nets financed by governments will generally be weaker. The consequences for the poor are also particularly affected by factors that are socially defined and enforced.

Stigma and marginalization are two concepts that are closely linked to discourses on addiction and usually differentially applied to poorer heavy users in a particular society (Room, 2005). In every society studied so far, addictive behaviours are to a greater or lesser degree moralized, meaning that those affected by severe addictions suffer from social dislocation and disenfranchisement. Thus in many languages, there are stigmatizing terms for someone who is seen as habitually transgressing

the boundaries (e.g., 'un ivrogne' or 'clochard' in French, 'a drunkard' or 'drunk' in English), and these terms may become a master status in terms of which the person is primarily defined (see Hughes, 1945). In a 14-country WHO cross-cultural study of disabilities, key informants assigned 'alcoholism' an average rank of 4th out of 18 conditions in terms of the degree of social disapproval or stigma in the society—greater disapproval in most societies than for being 'dirty or unkempt' or for 'chronic mental disorder'. The key informants also ranked 2nd out of 10 conditions 'someone who is visibly drunk' in terms of adverse public reactions to appearing in public—consistently more adverse than for someone with a chronic mental disorder who 'acts out', or for someone who is dirty and unkempt (Room et al., 2001).

A lower socioeconomic status may also render obvious manifestations of addiction more visible, and make those affected even more vulnerable to marginalization and stigma (Goffman, 1967; Chambliss, 1973). Low-income people, because of their lack of resources, are often less able to avoid public scrutiny, while the more affluent can purchase social or spatial buffering of their behaviour. The end result, perhaps particularly in affluent societies, is that there is a strong overlap between the most marginalized population and those defined as having serious addiction problems. Thus, 77% of those entering treatment for alcohol problems in Stockholm were not in the workforce and 67% did not have fully stable living arrangements (Storbjörk and Room, 2008).

10.4 Addictive disorders and the process of development: alcohol as an example

Experience with alcohol provides an opportunity to see into the dynamics by which the process of development impacts upon patterns of consumption, and thereby related problems (see Schmidt and Room, 2012). Other authors have published similar accounts for the cases of sugar (Mintz, 1985), tobacco (Brooks, 1952), and other substances of abuse (Schivelbusch, 1992; Courtwright, 2001).

The use of alcoholic beverages was very widespread in tribal and village societies prior to the modern era. Fermented alcoholic beverages were known in all cultures except in Australia, Oceania and North America (roughly, north of Mexico). In societies without alcohol aboriginally, the encounter with alcoholic beverages with European contact was often abrupt and highly problematic. Where alcohol was traditionally consumed, production of alcoholic beverages was common on a small scale as a household or artisanal activity, particularly when and where agricultural surpluses were available. Fermented beverages produced in such circumstances could not be stored indefinitely nor transported far, and often spoiled quickly if not consumed. Drinking was thus often an occasional and communal activity, associated with particular communal festivals (Room et al., 2002).

There are many places in the world where versions of these traditional patterns originating from tribal and village societies persist today. But superimposed on them, and often replacing them, are patterns of production and consumption that have developed over the last 500 years or so. These involved new beverages, new modes of production, distribution, and promotion, and new drinking customs and institutions. Distilled spirits, coming to Europe by way of Arabia, made it possible to produce alcoholic beverages which did not spoil, and thus could be transported across the world. By the 1500s, as European empire-building got under way, distilled spirits had escaped from the medicine cabinet and were becoming an everyday drink. In the long period of colonial expansion, distilled spirits and fortified wines were a major tool through which native people were subjugated

and exploited (Room et al., 2002:23–27). As the industrial revolution got under way, an early stage was industrial production of alcoholic beverages, particularly beer and spirits. As transportation improved, alcoholic beverages became a market commodity that was available in all seasons of the year, and at any time during the week. Particularly in Europe, the result was a flood of alcoholic beverages washing over one country after another, producing scenes of disorder, illness and death (e.g., Coffey, 1966). Elsewhere in the world, also, the result was often catastrophic. The American statesman Benjamin Franklin, for instance, noted in the late 1700s that rum had "already annihilated all the tribes who formerly inhabited the seacoast" of eastern North America (Room et al., 2002:153).

In the countries with early industrialization, alcohol played a two-sided role. On the one hand, it was an early instrument of industrialization. On the other hand, the greatly increased supply and often the widespread availability of alcohol proved disastrous for much of the population. By the 19th century, leaders of industry came to see it also as a major impediment in industrial life, which demanded a sober and attentive workforce. Eventually and with great difficulty, industrializing societies in Europe and elsewhere came to see the flood of alcohol as a substantial social and health problem. In a number of countries, popular social movements to limit drinking and even to prohibit it gained broad membership and eventually political strength. Typically, after a century or more of popular movements and political activity, a new and fairly stable alcohol control structure was put in place. In the latter part of the 19th century, European colonial powers to a greater or lesser extent also imposed restrictions on alcohol availability in their colonies on other continents, particularly for the indigenous populations (Room et al., 2002).

We live today with the legacies of this history, but also with the results of new developments in the last half-century. The dissolution of the colonial empires meant also the removal of many of the restrictions on drinking, in all non-Islamic parts of the world. Industrialized alcoholic beverages, such as European-style beer, became prestige commodities in many places; a bottle of Heineken or Carlsberg in one's hand became a cheap way of staking a claim to be cosmopolitan, part of the modern world.

In the meantime, developments in brewing, distilling, and packaging methods, and in transportation networks, increased the availability of alcoholic beverages everywhere. In the present-day world, alcohol production has largely lost its old function as an early driver of industrialization, since production of industrialized products is now increasingly in the hands of multinational corporations headquartered in the developed world, and the beverages are produced in imported turn-key plants by a small production staff, presided over by expatriate brewers or distillers (Room and Jernigan, 2000). Trade agreements and disputes and structural adjustment plans imposed by international development agencies, in treating alcohol as an ordinary commodity, have contributed to dismantling arrangements which often limited the alcohol market. Meanwhile, global alcohol producers and distributors are able to call in each local market on the full range of advertising and other promotional techniques which have been developed and honed in recent decades (e.g., Jernigan, 1997, 2010).

With respect to economic development, alcohol still plays a two-sided role. But the balance has shifted. Production of alcohol brings less benefit to the local economy of a developing country, since only a small labour force is involved in producing beer or spirits. Production will in any case be

primarily directed to the domestic market—this is true for 95% of alcohol production worldwide. The largest exporters of alcohol are in Europe, and there are few examples of successful exports of alcohol from a developing country. The main examples of success are Mexico, with a large market next door, and Chile and South Africa, with their longstanding winegrowing traditions. Other exports from developing countries are mostly limited to niche markets.

One alcohol-related contribution to the local economy, particularly for favourably located island countries, comes from tourism. Given the multinational organization of the tourist trade, again the primary benefit in terms of local employment is relatively low-skill and low-paying jobs.

Against these benefits must be set the costs (Cisneros Örnberg and Room, 2014). In a Caribbean town oriented heavily to tourism, Padilla et al. (2012) write that:

> binge drinking by tourists was described as having a profound impact on alcohol and illicit drug use among local residents, and especially those employed by businesses catering to foreigners. These environments normalized excessive drinking and made it nearly impossible to conceive of a life without alcohol. Thus, even though alcohol was associated with 'fun', participants also mentioned the consequences of excessive alcohol consumption, which were often described with morally laden terms such as *vicio* (vice).

In some cultural contexts, the encouragement of a heavy-drinking environment may in the end be self-defeating. As an elder on Lamu, an island off the coast of Kenya, noted, tourists come to see a different way of life. However, they also bring money and different customs, such as drinking alcohol, both of which are very difficult for the island's young inhabitants to resist. Lamu needs the tourist trade—but, in the end, the tourists' influences may destroy what they come to see (Caputo, 2001, p. 110). In the case of successful economic development, alcohol consumption is likely to rise—as can be seen in China, South Korea, Thailand, and other growing Asian economies today—in the absence of religious proscriptions or public health-oriented alcohol controls. Often, because of their prestige value, imported beverages lead the trend. Thus, in the context of the oil boom in Venezuela, Diageo reported that its sales of Scotch whisky rose by 60% in 2005, despite the disapproval of the President (Romero, 2006). Generally speaking, with a rise in alcohol consumption rates of alcohol-related problems will also rise. Thus the World Health Organization (WHO) studies of alcohol's contribution to the Global Burden of Disease show that alcohol becomes increasingly important as a source of disability and death in countries with a higher standard of living.

10.5 Socioeconomic variations in patterns of use and problems

10.5.1 Alcohol

We first turn to the question of variations between richer and poorer countries in alcohol consumption and the problems it causes. Figure 10.1 shows the variation in the rate of abstention from alcohol by men in a country by the level of affluence of that country, measured in terms of gross domestic product (GDP) (US dollars at purchasing power parity, PPP) in 2002 (Schmidt et al., 2010). It will be seen that it is mainly in countries with a GDP below USD $5000 per year that the majority of adult men abstain from alcohol. In the absence of public health counter-measures, it seems very likely that success in raising the GDP of the poorest countries will bring large numbers of people into the global drinking population. Figure 10.2 shows the relation between a country's

affluence and the consumption of alcoholic beverages per adult. While the relationship is not so strong above a per capita GDP of $9000, again there is a strong relationship between societal affluence and per capita alcohol consumption below a GDP of $9000.

Figure 10.1. The relation of Gross Domestic Product (PPP) and the male abstention rate in 2002 (Source: Schmidt et al., 2010)

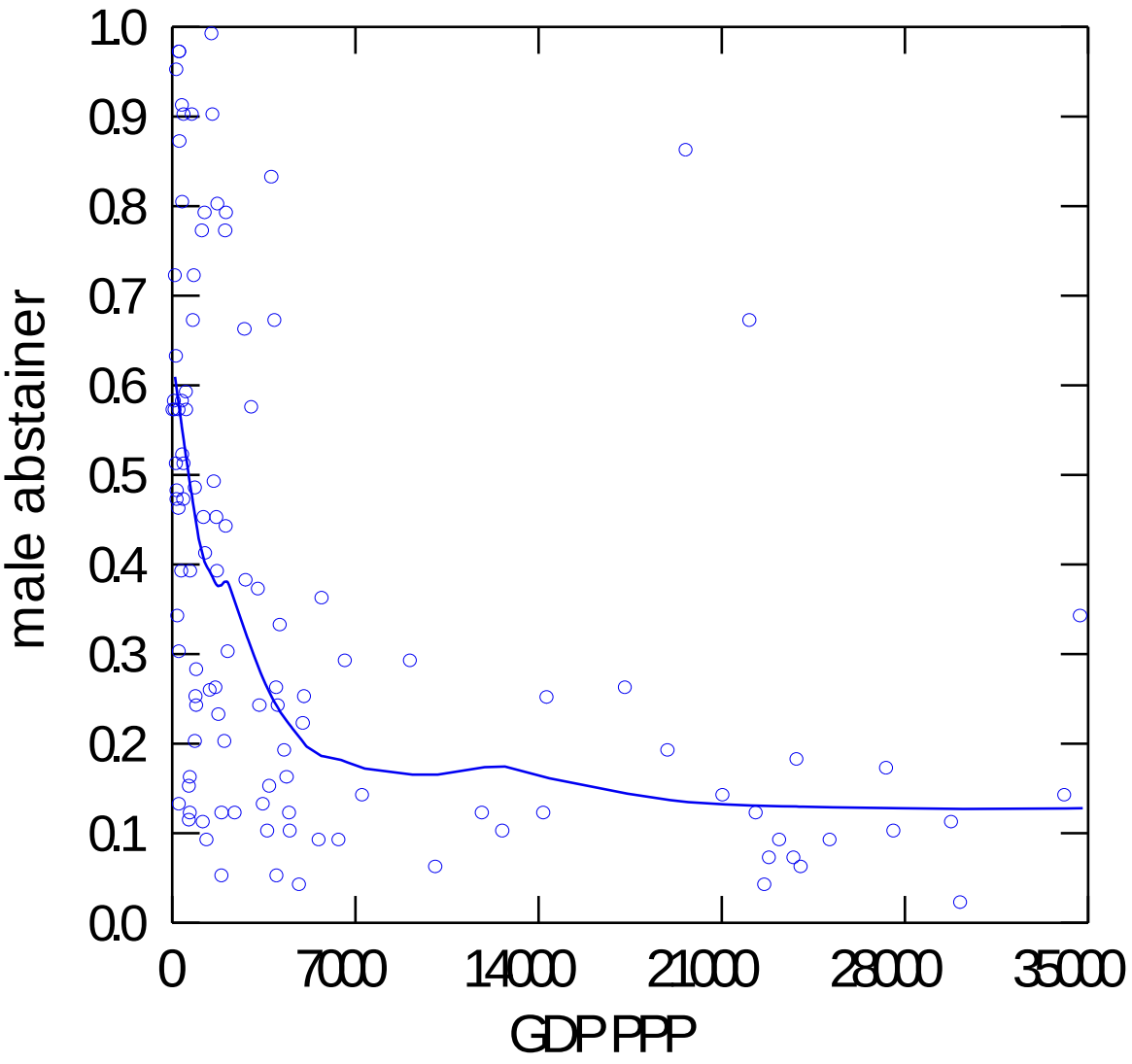
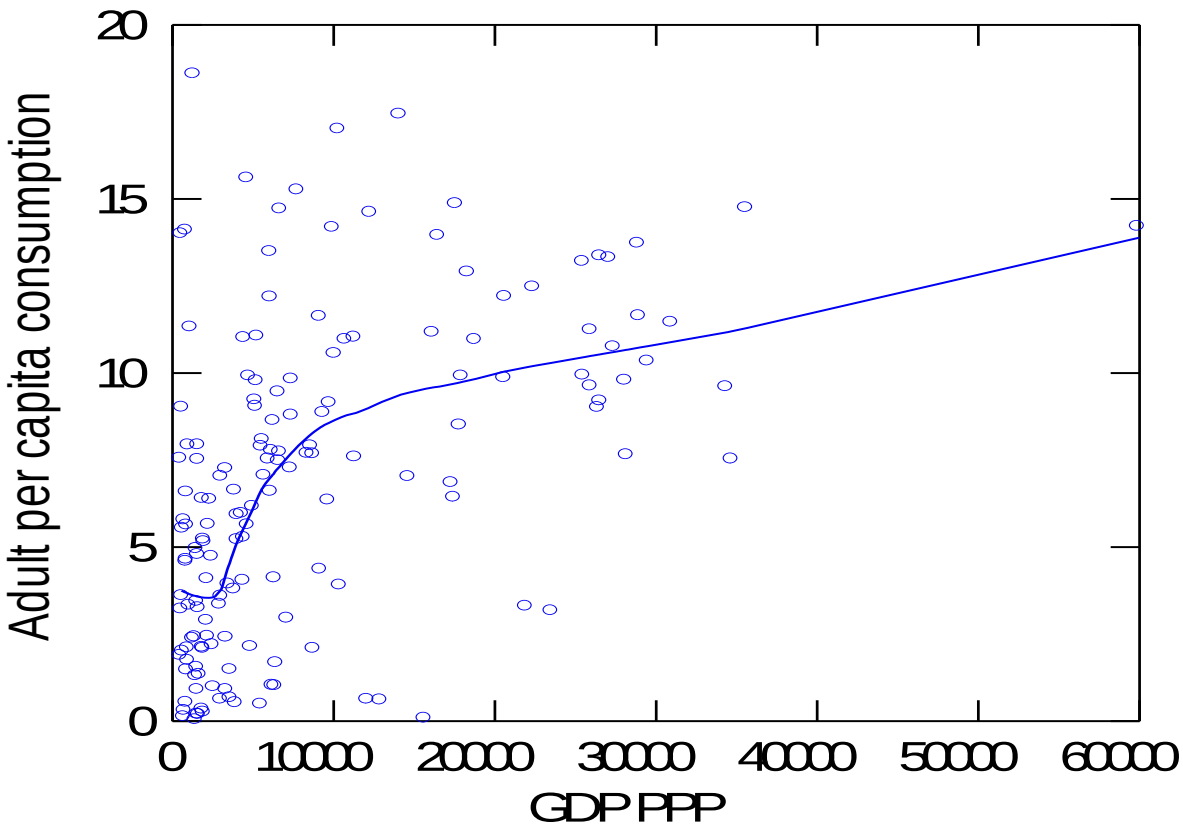


Figure 10.2. Relationship between per capita purchasing power parity-adjusted GDP and adult consumption (litres) of alcohol per year, 2002. (Source: Schmidt et al., 2010)



There are various ways of measuring the health burden from risk factors such as alcohol, but a commonly used one is disability-adjusted life years (DALYs), which reflects a combination of number of years lost from early deaths and fractional years lost when a person is disabled by an illness or injury. The proportions attributable to alcohol of all DALYs lost are higher in the middle- and high-income categories than in the low-income categories (Rehm et al., 2006). But this partly reflects the much greater burden of disease in poorer regions of the world. If we consider the alcohol-attributable burden in absolute terms (DALYs per 1000 adults), the Eastern Europe and Central Asia area is the highest globally, with 36.48 DALYs per thousand adults. The second-highest toll is in the higher-consumption low-income countries, with 18.70 DALYs per thousand. At the bottom of the range is the low-consumption low-income category, with 6.99 DALYs per thousand. The next lowest is the "western" developed country category, at 11.75; the middle-income country category is in the middle, at 15.54.

We may tentatively conclude, taking into account the distribution of consumption by national income in Fig. 10.2, that it seems likely that adverse health consequences of drinking will rise with increasing income, particularly in countries at the poorer end of the global income distribution, but that a tendency for the rate of health problems per litre of alcohol to fall with increasing affluence

may to some extent mitigate the relationship between the problems and societal affluence at higher levels of national income.

Next we turn to differences in how drinking-related patterns and problems contribute to differences between social groups within a given country. The proportion of drinking occasions that involve binge-drinking is typically larger for drinkers with a low socioeconomic status (Knupfer, 1989; Mäkelä et al., 2003). However, this is not only due to a higher number of binge-drinking occasions among drinkers of a low socioeconomic status but also to the higher number of non-binge-drinking occasions among high-socioeconomic-status drinkers, who can afford to drink on more varying types of occasions, including occasions where the primary aim is not intoxication (Mäkelä, 1983). Overall, income seems to have a special role with respect to alcohol use and heavy drinking, increasing their likelihood when other factors are held constant (McKee et al., 2000; Hradilova Selin, 2004).

The few existing studies from the developing world tend to show diverging results depending on the country in question. A positive social class gradient was observed for frequent drunkenness among both men and women in Bahia, Brazil (Almeida-Filho et al. 2005) and in Bloomfield et al.'s (2006) study of some European countries. In contrast, national results from India (Subramanian et al., 2005) implied a negative gradient between alcohol use and income and alcohol use and education among men; similar results were also obtained for the connection between education, income, and alcohol use in a study in a Delhi slum (Saxena et al., 2003). It is also clear that those who are less well off access non-beverage and other low-quality alcohol. In empirical studies, the use of non-beverage alcohol has been observed to be more common in Russia among those with a low level of education (Lachenmeier et al., 2007; Leon et al., 2007).

Evidence on differences in alcohol-attributable mortality according to socioeconomic status comes mainly from developed countries. These studies—with very few exceptions—have shown that deaths from alcohol-attributable causes are more common in lower than in higher socioeconomic positions. The observed alcohol-attributable mortality ratios between the lowest and highest educational, occupational, and income groups in Finland range between 3.3 and 6.1 for men and 2.8 and 3.5 for women (Mäkelä, 1999).For manual versus upper non-manual groups in Sweden the alcohol-attributable mortality ratios were 3.2 for men and 2.4 for women (Hemström, 2002). In the UK, Harrison and Gardiner (1999) found mortality ratios of 15 between the lowest and highest occupational categories among UK men aged 25–39, of 3.2 among men aged 55–64, of 1.5 among women aged 25–39, and of 0.3 among women aged 55–64. In Russia, Shkolnikov et al. (1998) quoted mortality ratios of 3.5 for men and 4.6 for women between groups with low and high levels of education. Similar mortality ratios of 1.2–2.6 for cirrhosis of the liver between lower and higher educational groups among men aged 45–59 were found in the Czech Republic, Hungary, Estonia, the United States, Norway, and Finland by Kunst (1997). In the United States, Singh and Hoyert (2000) found mortality ratios of 2.4–5.1 among men and 1.8–4.8 among women between the lowest and highest educational, occupational and family income groups. A mortality ratio of approximately 2.5 for cirrhosis of the liver was found in Australia for manual versus non-manual male workers (Najman et al., 2007). It has further been found that each new dimension of socioeconomic status has an additive effect on top of the others, reflecting the dimension of marginalization. In Finland, education, occupational class, personal income, household net income, and housing tenure each remained statistically significant predictors of alcohol-attributable mortality after adjusting for the other dimensions of socioeconomic status, each showing a negative gradient (Mäkelä, 1999).

There are few studies of self-reported alcohol problems and socioeconomic position in developing countries, but the existing ones point to a relatively strong negative gradient. In Nepal, using the CAGE questionnaire as the measure of problems, 36% of respondents with no education met the criteria for having alcohol problems (two or more positive answers out of four), whereas only 17% of respondents with 11 years of education did (Jhingan et al., 2003). In southern Brazil, the prevalence of AUDIT cases (with 8+ points as the cutpoint) was 2.7% in the highest socioeconomic status category (based on years of schooling and utilities in the household) and 13.7% in the lowest (Mendoza-Sassi and Béria, 2003).

Thus, although abstention is generally more common among poorer people in a given society, among those who drink at all health-related problems from drinking tend to be more common among poorer than richer drinkers in low- and middle-income societies. While this may in part reflect class differences in patterns of drinking, it usually primarily reflects the differential vulnerability of poorer people to alcohol problems from a given level and pattern of drinking.

10.5.2 Psychoactive substances controlled by international treaties

A wide variety of psychoactive substances are subject to control by three international drug treaties, which attempt on the one hand to ensure supplies of such substances for medicinaluse while on the other hand prohibiting their availability for non-medical human consumption (Babor et al., 2010).

Globally, the use of substances produced and distributed (and often promoted) through legal channels for medical purposes is highly concentrated in high-income countries (HICs). This is demonstrated dramatically by data collected by the International Narcotics Control Board for the medicinal use of opioids (INCB, 2014). The medicinal use of opioids is more than an order of magnitude higher in Europe and Oceania, dominated by HICs, and several times greater again in North America (the United States and Canada), than in other parts of the world. In HICs, there is now considerable worry about overuse of medically prescribed opioids (e.g. Manchikanti et al., 2012). At the other end of the availability continuum, the World Health Organization has estimated that about 80% of the world's population lacks access to effective medications for moderate and severe pain (Scholten et al., 2007).

The same general pattern of greater use with greater economic affluence is shown for use of psychotropic medications such as tranquillizers, anti-depressants, sedatives and hypnotics, anti-psychotics, and psychostimulants. Annual dosage units for these drugs per capita are several times higher in HICs than in low- to middle-income countries (LMICs; Rose, 2007). Data from commercial sources on the use of such psychoactive medications for selected countries is shown in Table 10.1. At a global level, the most widely available estimates of illegal drug use are for lifetime or current use (in the last year). Use rates set an upper limit to the potential harm from substance use, but do not give much indication in themselves of the extent of health or social harm.

The use of illegal drugs is reported in almost every country of the world, but different types of drugs and levels of use are found in different regions (Degenhardt and Hall, 2012). Table 10.2 shows the estimated rates of use in 2009 for four main classes of illegal drugs in each continent, and also for high-income regions within two continents (Oceania is a third such region, with the figures dominated by Australia and New Zealand). Cannabis is by far the most commonly used controlled drug, with over five times the rate of current users in the population as for any other class of illegal

Table 10.1 Prescriptions for psychiatric drugs in 2001, in standard dosage units per 1000 population

	USA	Europe	Japan	South America	South Africa	Pakistan
Tranquillizers	20,361	22,630	28,211	4781	2266	3802
Antidepressants	33,768	19,010	9202	1835	2330	919
Sedatives and hypnotics	7362	15,562	14,721	1299	1701	387
Antipsychotics	6954	8373	14,437	1062	1490	754
Psychostimulants	6488	364	184	47	105	7
Total	74,934	65,940	66,755	9023	7892	5868

Source: Rose, 2007

drugs. Rates of use of cannabis are generally lower in Asia than in other regions. Rates of non-medical use of amphetamines and opioids are roughly equal overall, although one is dominant in particular regions: amphetamines in Africa and Asia, opioids in the Americas and eastern Europe. The use of illegal drugs is generally more prevalent in HICs. Particular regions stand out for some drug classes among LMICs: Africa for amphetamines, the Americas for cocaine, poorer regions of Europe for opioids. Among HICs, fewer people in western and central Europe use amphetamines and opioids than in North America and Oceania.

Table 10.2 Estimated 1-year prevalence of non-medical users of different drug classes by global region, percentage of adults aged 15–64

Region(selected subregions)	Cannabis	Amphetamines	Opioids	Cocaine
Africa	3.3	0.9	0.33	0.4
Americas	7.9	1.0	2.1	1.3
(North America)	(10.7)	(1.3)	(3.9)	(1.5)
Asia	1.9	0.7	0.4	0.05
Europe	5.6	0.5	0.7	0.8
(west and central Europe)	(7.6)	(0.7)	(0.4)	(1.2)
Oceania	10.9	2.1	3.0	1.5
Global	3.9	0.7	0.7	0.4

Source: Degenhardt and Hall, 2012

Global estimates of population rates of harm from the use of illegal drugs are also approximations. One indicator is the proportion of people among the population aged 15–64 who inject drugs, since IDU involves a heightened risk of overdose and (particularly where sterile needles are not available) of HIV and other infections. The IDU rate is estimated to be over 0.5% in eastern Europe, central Asia, the Caribbean, Latin and North America, and Australia and New Zealand—a mixture of HICs and LMICs—and 0.06% or lower in South Asia, the Middle East, and North Africa (Degenhardt and Hall, 2012). Again, the pattern emerges of rates of harm which seem to reflect the influence both of extent of use and of a lower level of economic resources.

In terms of variation by socioeconomic status within national populations, most studies have been carried out in HICs. A common finding is that, at least for youthful experimentation or regular use of illegal drugs, socioeconomic status is not an important source of variation (see Humensky (2010) for the United States and Challier et al. (2000) for France). More generally, a systematic review covering both alcohol and illegal drug use, and drawing on studies primarily from the United States but also from Canada, the UK, the Netherlands, and Finland, concluded that there was no clear relation between living in a disadvantaged neighbourhood and levels of drug use or heavy use (Karriker-Jaffe, 2011).

For one form of harm from drugs, arrest and prosecution for illegal selling or possession, there is clear evidence, again primarily from HICs, that the poor are more likely to get the blame, with arrest rates often being especially high for visible minority populations (e.g. Johnson et al., 1977; Room, 2005; Levine et al., 2010). There is also clear evidence that low socioeconomic status predicts more adverse health outcomes among drug users (Galea and Vlahov, 2002; Wood et al., 2002; Galea et al., 2003).

Whether through legal or illegal channels, the use of psychoactive substances is to a considerable degree a function of living in a relatively affluent society. Within particular societies, the patterning of substance use (whether legally or illegally) by socioeconomic status varies, with relatively little variation among youth cohorts in some societies. But the harms from a particular pattern of substance use are almost invariably more severe for those having a lower status in a society than for those of higher status. For many harms the same is likely to be true in comparing lower-income societies with higher-income societies.

10.5.3 Tobacco

Tobacco was well known as a psychoactive substance to indigenous cultures in much of the Americas, with some form of smoking being the usual mode of use (Robicsek, 1978). Brought to Europe from the New World, the custom of tobacco smoking, mostly in a pipe or as a cigar, spread widely and quickly, although there was also use without combustion by nasal inhalation of snuff.

The tobacco market, and habits of tobacco smoking, were transformed in the course of the twentieth century by the development of machines for the industrial production of cigarettes and of the concomitant development of advertising and other promotional methods. Becoming widespread among men in the armies of the First World War, the cigarette habit was initially primarily a male prerogative, but it also spread among women in industrialized societies, particularly after the Second World War (Ferrence, 1989). While addiction doctors had already been concerned about tobacco smoking in the early 1900s (e.g. Towns, 1915), and several US states briefly prohibited cigarette sales

in that era, cigarette sales quickly became a free and open market in much of the world, and to this day tobacco products are commonly treated in trade agreements and disputes as just another market commodity (Shaffer et al., 2005).

Meanwhile, beginning in the 1950s with the establishment of a firm basis for the harms to health from tobacco smoking, a public health effort to reduce tobacco smoking by regulations and restrictions as well as public information and persuasion has gathered force. Initially this was primarily in HICs, but now it has a global reach through such instruments as the Framework Convention on Tobacco Control (FCTC), an international treaty which came into force in 2005 (World Health Organization, 2013). In HICs the rate of smoking has considerably decreased, with a much greater decrease among those of a higher than of a lower socioeconomic status. Meanwhile, the global tobacco companies, which control much of the world cigarette market, have turned to the rapidly developing LMICs, which they hope will grow as a market in the way that HIC markets grew during the twentieth century.

Thus the present time is one of transition, and mostly because of this there are a diversity of socioeconomic patterns of smoking and heavy smoking. Typically, heavy smoking in HICs now has a strong inverse relationship to social class, with heavy smokers most commonly found among those below the national median income. In LMICs this pattern may often be reversed. In terms of comparisons between societies, the trends at the societal level look quite different in HICs, where cigarette smoking is stable or has considerably declined (in Australia, for instance, cigarette consumption per capita for the whole population has halved since 1980), while cigarette consumption is still rising with rising incomes in many LMICs.

Most of what we know about current global patterns of tobacco use comes from the Global Adult Tobacco Survey (GATS), a comprehensive system created by the World Health Organization in order to quantify tobacco use in each country and provide data about the patterns of use in different countries (World Health Organization, 2007). It tells us that nearly 80% of tobacco smokers live in developing countries, which also have the highest burden of tobacco-related disease. However, regions of the world with the highest rates of death from tobacco use are the Americas and Europe, and, worldwide, men have higher mortality rates from tobacco than women. However, because of the lead-time between tobacco use and tobacco-related deaths, rates of death from tobacco use in women may skyrocket in the next several years. As noted, there are disparities between tobacco use and tobacco-related mortality for people in LMICs versus individuals in more affluent countries, as well as between individuals of a different socioeconomic status within countries. Worldwide, tobacco use causes approximately 7% of all deaths from tuberculosis, 12% of deaths from lower respiratory infections, 10% of deaths from cardiovascular diseases, 22% of deaths from cancer, and 36% of deaths from any respiratory system disease. Seventy-one per cent of all lung cancer deaths are due to tobacco use (Centers for Disease Control and Prevention, 2012).

Among developing countries, China is the largest cigarette-producing and cigarette-consuming nation in the world, with approximately 350 million smokers. China produces 42% of the world's cigarettes, and the Chinese National Tobacco Corporation is the largest manufacturer of tobacco products in the world. In 2010, 28.1% of the Chinese population smoked tobacco (World Health Organization, 2007). Other countries, however, have higher percentages of smokers, though their absolute numbers are lower. Approximately 39% of the Russian population used tobacco in

2009(60% of men and 21% of women). And in Turkey 31% of the population used tobacco in 2008 (48% of men and 15% of women) (World Health Organization, 2007).

India is the world's second-largest market for tobacco, and in 2011 approximately 275 million Indians, almost 35% of the Indian population, used tobacco in some form. Unlike much of the rest of the world, manufactured cigarettes do not constitute the majority of tobacco consumed in India. In India, higher-income populations primarily use manufactured cigarettes while lower-income segments of the population use bidis and smokeless tobacco (World Health Organization, 2007).

Other developing countries have patterns of tobacco use and problems closer to those observed in the West. The 2009 Global Adult Tobacco Survey showed that 15.9% of Mexicans are smokers but only 7.6% of the total population smokes daily. Almost 25% of Mexican men and 8% of Mexican women smoke cigarettes. In Brazil, approximately 17.2% of the total Brazilian population smoked tobacco:21% of men and 13% of women smoke cigarettes and 24.4% of adults are exposed to tobacco smoke in the workplace. Sub-Saharan Africa has lower rates of tobacco use than other regions of the world. However, there is a notable paucity of data about rates of tobacco use in Africa, as no WHO Global Adult Tobacco Surveys were conducted in Africa until the first one in 2013, in Nigeria. This survey revealed that 10.0% of men, 1.1% of women, and 5.6% overall used tobacco products (World Health Organization, 2013).

Regarding within-society socioeconomic variations, in the United States in 2012, 29% of adults who were below the poverty line smoked, compared with 17.9% of adults who were at or above the poverty line. Approximately 25.5% of adults who have not graduated from high school smoke, compared with just 9.3% of those with a college education and 5% of those with a graduate degree. Among non-college-bound high school seniors, the smoking rate is 27.9%, compared with 14.7% of college-bound seniors (Campaign for Tobacco-Free Kids, 2013).

Within-society variation is also evident in less developed countries. There is a relationship between annual household income and smoking; for example, individuals living below the poverty line in Thailand are more likely to smoke cigarettes than those with a higher income. The GATS survey in 2009 showed that 0.9% of men and 5.6% of women in Thailand are daily users of smokeless tobacco. Conversely, in Mexico, higher education is associated with higher rates of smoking among Mexican women, and women in both rural and urban households with greater assets have higher rates of smoking. In contrast, higher education is associated with lower smoking rates among Mexican men in both urban and rural areas (World Health Organization, 2007).

In general, poorer and rural segments of populations in developing countries tend to use local and hand-rolled forms of tobacco, while wealthier urban individuals use manufactured cigarettes. These patterns vary greatly depending on region and cultural factors. In most societies, men tend to have higher rates of tobacco use than women. Wealth, education, and class have a complex relationship with rates of tobacco use. As individuals become wealthier and more educated there is often an increase in rates of tobacco use corresponding to class advancement that affords prestige to tobacco use. However, as wealth and education increase further, rates of tobacco use decrease because more importance is placed on the health consequences. Again, these are broad generalizations and the specific situation in each country varies based on particular cultural factors.

10.6 Conclusion: addictive behaviours, market forces, and public health

From the perspective of public health and addictive behaviours we are currently at a crossroads between elements both old and new. There is much that is redolent of the past, for example the strength of market forces in pushing for ever more open markets, unfettered by public health restrictions. In its imperial past, Britain fought two wars to enforce the opening of the Chinese market to opium grown in India as a major financial prop for its Indian empire. Tobacco companies using bilateral trade agreements to fight off minor impediments, such as the Australian legislation on plain packaging for cigarettes, can be seen as pursuing similar ambitions using current means. Ironically, the Australian government could be seen as operating a double standard in a budding dispute with Thailand where Australia is one of the countries opposing proposed graphic warning labels on alcoholic beverages in Thailand (O'Brien, 2013). Whereas drugs were the "glue" of global political empires in past centuries (Courtwright, 2001), it is now global commercial empires that push for open markets, building demand with promotional efforts well beyond the capacity of the old empires, and resisting any market controls while working steadily toward "regulatory capture", where regulatory control is neutralised.

Looking at the history of northern and western Europe and its settler offshoots, we see another potential turning point in a Hegelian dialectic which, for some addictive substances, has already taken several turns. A seven-society collaborative project studying the rise in alcohol consumption between 1950 and 1980 noted a pattern of 'long waves of alcohol consumption' (Mäkelä et al., 1981) with upsurges about every 70 years. Rising rates of consumption and problems may reach a pivot point, after which social activism takes over in the absence of government action. Thus the counterparts to tidal waves of alcohol consumption have been waves of spontaneously arising temperance movements and agitation, followed by legislation to curb product availability (Room, 2015). In the current climate of free markets and unfettered access, rising consumption of psychoactive substances and behavioural addictions may soon reach the point where societies push back against market forces through popular movements, ultimately leading to governmental controls.

The early twentieth-century push-back against alcohol marketing was a global effort at prohibition (Schrad, 2010). In the end this failed for alcohol (as well as for tobacco, prohibited for a few years in some US states); but on a second front—the fight against 'narcotics'—the social movement succeeded in building an international prohibition and control structure, the drug control treaties and institutions that are still with us today. As Courtwright (2005) has argued, the compromise conceptualisation for much of the twentieth century was to firmly split discussion of addictive 'drugs' from discussion of tobacco and alcohol, which were just 'habits' not requiring strong market controls.

Conceptually and in terms of scientific research, as Courtwright notes, this distinction began to break down in the 1970s. But the division remains, as a Manichean split, in the treatment of different substances under international law, including notably trade law and disputes. Though substances controlled by the drug treaties could be subject to trade disputes concerning the trade in them as medications, it is notable that none of them have been; we may guess that the treaties have informally rendered this a 'no-go' area. On the other hand, attempts by governments to move towards measures to control or discourage use of alcohol or tobacco have been fought every inch of the way by the commercial interests concerned, both in the national political sphere and through trade disputes and other means internationally. Within the United States in particular, the Supreme

Court's rulings that 'commercial speech' is constitutionally protected point toward a division where restrictions on promotion may only be constitutionally permissible if the substance or behaviour is prohibited.

Meanwhile, a substantial global public health movement continues to build steam around restricting the marketing and promotion of cigarettes. For alcohol, in countries which had strong temperance movements and a subsequent strong reaction against them, the reactive impulse seems largely spent, and it is primarily commercial forces which drive a politics of wide and deregulated availability (e.g. Room, 2010). As discussed in Chapter 3, a new dimension in the concept of addictive substances has opened up around the place of sugar in the epidemics of obesity that afflict many countries, both HICs and LMICs. Sugar, alcohol, and tobacco are now increasingly being thought of together in public health planning and action in the context of a growing global effort to reduce the rates of non-communicable diseases (NCDs) such as cancer, heart disease, chest disorders, and diabetes (Lustig et al., 2012). Tobacco smoking, alcohol consumption, and dietary factors are the major risk factors for these diseases, and will increasingly be linked together in public health thinking and action.

One complexity that is emerging in this context is the issue of the relation between the psychoactive (and thus addictive) quality of the substance and the aspect that carries the main health risk. For alcohol these are one and the same—although some psychopharmacologists are pursuing the idea of an alcohol substitute that would provide the pleasure without carrying the harms (Nutt, 2006), others doubt these can be separated (Room, 2006a). With sugar, there is the prospect of substituting other sweeteners (Mesure, 2014). With tobacco, most of the harm to health comes from the smoking mode itself and as well as from nitrosamines in tobacco; the psychoactive ingredient, nicotine, has relatively few negative effects on physical health (Ferrence et al., 2000). Swedish snus and now e-cigarettes (Boseley, 2014) offer alternatives to cigarette smoking that carry a relatively low risk in terms of consequences for physical health. At least for nicotine and sweetness, it seems possible that the dialectic of market promotion and the counteractive measures of public health controls concerning addictive behaviours may be transcended.

Acknowledgements

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Fig. 10.1 The relation of gross domestic product (GDP)(at purchasing power parity, PPP) and the male abstention rate from alcohol in 2002. Reproduced with permission from Schmidt, L.A., Mäkelä, P., Rehm, J., and Room, R., Alcohol: equity and social determinants, pp.11–30, in Blas, E. and Kurup, A.S. (Eds.), Equity, Social Determinants, and Public Health Programmes, World Health Organization, Geneva, Switzerland, Copyright © 2010, <http://whqlibdoc.who.int/publications/2010/9789241563970_eng.pdf>

Fig. 10.2 Relationship between per capita purchasing power parity (PPP)-adjusted gross domestic product (GDP) and adult consumption (in litres) of alcohol per year, for 2002. Reproduced with permission from Schmidt, L.A., Mäkelä, P., Rehm, J., and Room, R., Alcohol: equity and social

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