Chapter 1

Historical and Conceptual Approaches to Addiction

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The Evolution of a Term: What Is 'Addiction'?

At the start of the twenty-first century, 'addiction' is said to be a 'disease' in most Western industrialised countries [1], and in the USA the National Institute on Drug Abuse (NIDA) refers to it as a 'brain disease'. However, when reading about the problems presented by drugs and alcohol you will encounter a range of terms ('addict', 'alcoholic', 'alcohol misuse', 'drug abuse', 'substance dependence') which seem to overlap and sometimes contradict each other. As is common with a lot of medical terminology, the meaning of many of these words has changed over time as they have started to be used out of their original context, and this can be a barrier to effective communication about the subject. Furthermore, the disease concept of addiction is not the only explanation of the problem, and some have argued that addiction is 'a set of ideas which have a history and a cultural location' [2].

The definition of addiction provided by the current edition of the Oxford English Dictionary is 'the state or condition of being dedicated or devoted to a thing, esp. an activity or occupation; adherence or attachment, esp. of an immoderate or compulsive kind' [3]. To the contemporary reader this feels familiar: the idea that human beings have a tendency to become so involved in a habit or pursuit that their involvement seems excessive to another observer. However, the word 'addiction' is derived from a Latin term used to denote a court sentence compelling one human being to follow the orders of another. This concept of slavery captures the essence of the modern-day scientific understanding of addiction – that is, that a pursuit or habit has moved beyond voluntary control to become a type of psychological slavery [4]. This can be illustrated by using the example of alcohol.

There is good evidence that alcohol has been produced by humankind for thousands of years, and there have been very few major civilisations that haven't learnt to harness the fermentation process to produce this psychoactive substance. Indeed, the enzyme alcohol dehydrogenase, which exists specifically to break down alcohol, demonstrates the human race's long-standing evolutionary relationship with ethanol. Drunkenness is a recurring theme in Greek mythology, and the worship of Dionysius or Bacchus (the wine god) was common in Mediterranean people. As religious beliefs came to be the organising principle of many societies, alcohol was often reserved for use in religious ceremonies, with wine and beer used as offerings to deities. It took on a key symbolic role in Christianity, which came to equate red wine with the blood of Christ in Holy Communion. Religions also began to control the excesses associated with alcohol. Islam chose total prohibition in AD 700, and Protestant sects in northern Europe (and later North America) saw abstinence as fundamental. Attempts by religious groups to control excess led to what has been called the 'moral model' of addiction, whereby drunkenness is equated with 'sin'. Self-directed change was

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demanded of the sinner, and failure to conform was met with either intensified prayer or punishment.

However, fast-forward to the eighteenth century in Britain and, despite this 'moral model' of understanding, alcohol had become an integral part of the fabric of social life. The public house was the centre of many activities, including many public and private ceremonies. Business and trade were conducted in pubs, and wages were often paid there. However, alcohol could still be linked to social problems, as highlighted by the 'gin craze' of the 1730s and 1740s. This is best illustrated in two satirical prints produced by the artist Hogarth in 1751 in support of regulation of the production of gin, which was fast becoming the scourge of the poor. The first picture is set in the St Giles area of London in a street named Gin Lane, where people look thin and diseased, the pawnbroker is doing an excellent trade and buildings are falling into disrepair. Most shocking of all, a woman in the foreground is throwing away her baby in favour of the demon drink. In contrast, in Beer Street all is well. People are well fed and prosperous, the pawnbroker has closed down and new buildings are springing up.

The Disease of Addiction

Gin epidemics aside, Hogarth's prints illustrate that 'drink' such as beer was largely considered good for you in the eighteenth century. However, doctors in Georgian England were clear that heavy alcohol consumption was often responsible for ill health and disease. In the first part of the nineteenth century, two physicians simultaneously raised the idea that the habit of drunkenness was 'a disease of the mind'. Thomas Trotter was a ship's surgeon whose MD thesis at the University of Edinburgh in 1804 was entitled *An Essay, Medical, Philosophical, and Chemical on Drunkenness, and Its Effects on the Human Body*. Meanwhile, on the other side of the Atlantic the more celebrated *Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind* by Benjamin Rush was published in 1816. However, it wasn't until 1849 that another physician, Magnus Huss, first used the term 'alcoholism' to describe a disease relating to excessive consumption of alcohol.

Although the emerging medical profession had begun to label and classify the effects of alcohol, it was change in wider society that started to make alcohol consumption a 'problem'. Levine argues that the idea of addiction emerged at a specific point in history and in a specific cultural context [5]. In early nineteenth-century America it was well recognised that certain people liked to drink alcohol and their drinking was often habitual. However, this was not given more significance than a 'preference' or a 'habit'. As the century wore on and the Industrial Revolution took shape, increasing personal mobility allowed people to move great distances to look for work. Extended family ties were often put under strain by this process, and social support networks became weaker. The fortunes of the nuclear family became more dependent on the self-control of the father/husband as the main earner. The maturing industrialised economies of the Western world required more disciplined workers, and intoxication and drunkenness were not compatible with arriving at work on time and working with machinery.

The emerging educated middle class in Victorian society devoted itself to moral causes to improve the health and well-being of the working poor, and one example was the Temperance movement. This philanthropic lobby group formed a strong alliance with the Church to act as a vehicle for polite society's increasing concern about personal self-control, particularly for adult males. Temperance campaigners preached mass abstinence, touring

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the countryside presenting accounts of drunken degradation and eternal salvation through taking a pledge to remain abstinent. Groups such as the Society for the Study and Cure of Inebriety, founded in 1884 in London (and now known as the Society for the Study of Addiction), came together to provide a place for Temperance reformers, physicians and public health doctors to discuss the problem of excessive alcohol consumption.

The 'medical model' of addiction was born, and with it came the first attempts at treatment. This usually involved secluding the inebriate in a large building in the countryside, and there was great enthusiasm for a variety of physical treatments. However, a strong moral element remained part of the medical model, and here we see the first attempts at demarcation of 'case' from 'non-case'. The term 'alcoholism' was applied to a 'worthy' sick person, one who had a progressive disease that required help, as opposed to an unworthy 'drunk' who was not interested in reform. Intense public alarm over excessive drinking led to a gradual change in the meaning of alcoholism. The term 'addiction', which the Temperance movement used interchangeably with 'alcoholism', had a narrow, moralised and medicalised meaning. Addiction was limited to drinkers, was always morally reprehensible and referred to a progressive disease; this became the dominant image of addiction in the nineteenth and early twentieth centuries in Western society [4].

In 1919 the Temperance movement was successful in driving through the Eighteenth Amendment to the US Constitution, banning the 'production, sale, and transportation of intoxicating liquors for beverage purposes'. Although this did succeed in reducing consumption and alcohol-related health problems, it also precipitated nationwide gangsterism and was repealed in 1933. Temperance ideas lost their appeal, but in 1935 the founders of Alcoholics Anonymous (AA) proposed a new approach that drew on medical, psychological and religious ideas. AA ideology has it that most people can drink socially without any problems. However, some people have a unique biological vulnerability to alcohol, whereby alcohol triggers an uncontrollable need for more alcohol. If an alcoholic continues to drink they will succumb gradually to a disease that can only result in either insanity or death.

A definition of 'alcoholism' was formulated into scholarly language in the 1950s by E. M. Jellinek, who used the concept set out by the fellowship of AA – that is, loss of control was the 'pathognomonic symptom of alcoholism'. Step one of the 12 Steps of AA emphasises loss of control of drinking, but also of one's life because of drinking. The user is failing to stop or regulate use despite the problems it is causing, and the recurrent problems themselves have become part of the condition. By the mid-twentieth century, the meaning of 'addiction' had gradually expanded in scope, and the term had come to encompass all socially unacceptable uses of alcohol or drugs [4]. It was no longer limited to the 'overwhelming involvement' that was the essential component of addiction for the Temperance movement, but had taken on a less precise definition. As illicit psychoactive drugs became more available in the mid-twentieth century, so any use of a prohibited substance might be called 'addiction'. Furthermore, the application of science in the study of addiction has led to a recognition that problems that do not involve drugs or alcohol are similar, and can also be called 'addiction'. For example, gambling habits have the same psychological dynamics, can be overwhelming and dangerous, can be treated with the same therapies and can even have the same underlying neurochemistry.

As already mentioned, Room and others argue that the cultural framing of the concept of addiction is important [2]. Modern definitions of dependence (described later in this chapter) place a lot of importance on the concept of 'losing control' of consumption. Individual self-control and the expectation that an individual will take responsibility for

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their own life make sense in cultures where individuation and individualism are taken for granted. However, they make less sense in cultures where social control is more an external than an internalised matter and where individual goals and functioning are less important than the collective interests of the family and community. Furthermore, some of the definitions set out in the dependence syndrome (and enshrined in the diagnostic systems described in the next section of this chapter) are culture-specific. Neglect of alternative activities in favour of drinking is only a problem in the context of a culture attuned to the clock, where time is viewed as a commodity [2]. There is an assumption that desirable activities are an alternative to drinking, whereas in some cultural contexts most leisure activities involve drinking.

Reinarman challenges the idea of 'addiction-as-a-disease', arguing that 'the ubiquity of the disease concept of addiction obscures the fact that it did not emerge from the accretion of scientific discoveries' [1]. Rather than a discrete disease entity with a distinct aetiology, it may be best thought of as a concept that arose from a range of historical and cultural conditions, through a variety of actors and institutions. For most of the nineteenth century it was widely believed that alcohol was inherently addicting and therefore anyone who drank it would become addicted. We know that most drinkers and drug users do not become addicted, so the pharmacological properties of the psychoactive substances cannot be the primary cause of addiction-as-disease. More recently, the brain is cited as the organ in which addiction-as-disease is said to reside. However, although research confirms that there is a biological component, there is no specific locus of addiction-as-disease. Zinberg demonstrated that 'loss of control' was not the inevitable outcome of regular use but rather contingent on social and psychological variables [6]. Fingarette argued that heavy drinking was not technically a disease, and could just as easily be seen as a 'way of life' [7]. Davies employed attribution theory to show that people choose to interpret habitual drug taking as an addictive disease that is beyond the control of the user not because this interpretation best fits the observable facts, but because it is a view that serves useful purposes for users themselves and society in general. It functions as an excuse for bad behaviour, a means of absolving blame, an explanation of otherwise 'irrational' behaviour and as legitimation for punishment and/or treatment [8].

Severe addiction is now thought to involve not just a destructive habit, but a kind of slavery – 'the loss of a soul'. When people become severely addicted they not only change what they do, but who they are. However, this process can exist on a continuum of severity. Mild forms may be less than fully overwhelming, perhaps because they are short-lived, linked to a specific situation or episodic. Thus, there has been a move back towards the broader original OED definition, but the story has not gone full circle. What about overwhelming involvements that are socially acceptable? The lives of Martin Luther King and Mother Teresa show what can be achieved when a person becomes totally absorbed in, and devoted to, a cause to the exclusion of their own well-being [4]. Is this still addiction?

Terminology in Clinical Practice: Classification and Diagnosis

Various schools of knowledge have been applied to the issue of addiction. Epidemiologists or public health specialists describe levels and patterns of use and the harms that are associated with this; neuroscientists have described the key neurobiological changes and pathways; behavioural psychologists are interested in the learning processes of addiction and how they are influenced by the sociocultural environment; peer-led organisations such

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as AA and Narcotics Anonymous (NA) have adopted a model that sits somewhere between religion and medicine. Clinicians in contrast have described the key symptoms and psychopathology, and have developed classificatory systems to aid provision of treatment [9].

Classificatory approaches may utilise one of three strategies: categorical, ordinal or continuous. Categorical classification involves an assessment of the presence or absence of a given attribute, or the selection of the category best suited to a given individual among a number of options. This is the process of diagnosis, which is the bedrock of medicine. In contrast, a second approach is to provide a quantitative assessment of a specific individual attribute along a continuum of intensity, frequency or severity. Examples include blood pressure, symptom severity, quality of life or personality traits. Finally, ordinal classification provides a practical compromise between the two approaches. This uses a finite, ordered set of categories such as 'unaffected, mild, moderate or severe' to refine the diagnostic system. A 'cut point' can be used with any continuous scale to indicate a threshold for membership in a category. For example, when using the AUDIT screening tool for alcohol problems, a value greater than 8 is often used to define the presence of an alcohol use disorder [10]. In practice, quantitative thresholds are also embedded in most categorical diagnoses (e.g. DSM-5).

William Osler is famed for establishing many of the principles that still guide medical education and practice today, and in particular that diagnosis is based on detailed observation of signs, careful eliciting of the patient's symptoms and relevant investigations to confirm the presence of a pathological process [11]. Ideally, valid medical diagnoses are underpinned by an understanding of the disease process based on a specific cause (aetiology) and on a specific pathway to illness (pathogenesis). Most signs and symptoms can be the result of several different pathological processes, and the assessor has to sort through the possibilities and select the most likely cause.

The science of diagnosis, or 'nosology', implies that diagnostic categories are based on empirical data, but often they are not. The categories used in psychiatric diagnosis are based on observation of signs and symptoms rather than on pathological processes, and clinicians usually rely completely on subjective experiences reported by patients. Psychiatric diagnoses, with few exceptions, are *syndromes* rather than diseases, and the lack of clear disease categories has led to the use of the more general term 'disorder'. The definition of a psychiatric disorder in ICD-10 is: 'a clinically recognizable set of symptoms or behaviour associated in most cases with distress and with interference with personal functions' [12]. Despite these limitations, diagnosis performs a number of important functions: it validates the patient's suffering, confirming that something is indeed wrong; aids communication between professional and patient, and between professionals; helps to guide treatment; informs prognosis; and provides researchers with a tool for conducting investigations and for developing theoretical models of disease.

A good example of some of these issues comes from the US/UK Diagnostic Project of the late 1960s, where psychiatrists in New York and London were given detailed vignettes of cases and asked to make a diagnosis [13]. Although the vignettes were the same, psychiatrists in New York diagnosed schizophrenia twice as frequently as their counterparts in London, largely because they used a broad concept of the diagnosis that was psychodynamic in origin. Standardisation of diagnosis through rules of application or 'operational definitions' was required. An important change in psychiatric nosology therefore occurred in 1980 with the publication of the third edition of the *Diagnostic and Statistical Manual* (DSM-III). In the absence of knowledge about aetiology, its basic principle was to classify psychopathology in

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terms of signs and symptoms. Although it was anticipated that the system could change with research breakthroughs, it has been fairly stable during the past few decades. Unfortunately, diagnoses that were initially considered provisional have become set in stone over time. Although diagnoses based on the manual should not necessarily lead to any specific mode of treatment, it has been impossible to resist the linkage.

Alcohol and drug use provide an example of the difficulty in establishing a boundary between normality and disorder. In Western cultures the majority of people drink alcohol, and excess intake from time to time is far from unusual among otherwise 'low-risk' drinkers. There has been much debate about how problematic or unhealthy alcohol use should be conceptualised and classified [9]: an epidemiological approach using the mean daily or weekly consumption where the risk of harm is related to the amount or pattern of use, or a diagnostic approach that distinguishes an 'addict' from a 'non-addict'.

The Population Perspective

Use of any individual psychoactive substance occurs across a spectrum. At one end are people who do not use the substance at all. Others will use it occasionally and without problems, but as use increases in frequency and quantity so physical, psychological and social problems become more likely to develop. At the other extreme are people with severe dependence. The numbers at each stage of the spectrum will depend on the substance and the population under consideration, but these issues are easier to consider when applied to a (mostly) socially sanctioned substance such as alcohol.

'Low-Risk' Drinking

People may abstain from drinking alcohol for a variety of reasons (religious or cultural beliefs, health reasons, recovery from previously problematic use). However, assuming that an individual does drink alcohol, how much is too much? In order to answer this question there must be a standard way of quantifying the amount used. Although the WHO has described a 'standard drink' as containing 10 g of pure alcohol, there is a lack of worldwide consensus as to the amount of alcohol in a standard alcoholic drink. The USA defines a 'standard drink' as containing 14 g of pure alcohol, but a 'unit' of alcohol in the UK is classified as 8 g of pure alcohol, and a standard drink in other countries may contain as many as 20 g [14].

In the mid-1990s, 'low-risk' drinking was defined in the UK as being fewer than 21 units of alcohol per week for men and fewer than 14 units per week for women. Drinking alcohol at levels above this was considered to put the individual at risk of health-related harms, based on a review of the available epidemiological data. Consumption of 22–50 units per week for men and 15–35 units per week for women was labelled 'hazardous' drinking, and more than 50 units per week for men and more than 35 units per week for women was 'harmful' drinking. A further review of the evidence that focused on the risk of cancer led to a revising of this guidance in 2016, and both men and women are now advised not to drink more than 14 units/week on a regular basis, and to spread this evenly over three days with alcohol-free days [15]. Similar principles are followed around the world, but with some variations [14].

Hazardous Drinking

Hazardous drinking refers to consumption of more than the recommended low-risk weekly levels in the absence of any harm, a situation that is very common in most industrialised

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countries. The US National Longitudinal Alcohol Epidemiologic Survey calculated that a third of drinkers never exceed moderate alcohol consumption, a third do so occasionally and the rest do so habitually [16]. UK data shows that between 18 per cent (Wales) and 26 per cent (Scotland) of drinkers consumed more than 14 units in a week in 2016 (see Chapter 5). Defining and identifying 'hazardous' drinkers is important from a public health perspective, as interventions to help reduce (but not necessarily stop) drinking may have large national benefits. Alcohol Brief Interventions (ABI) have therefore been targeted at hazardous drinkers as a group, where more intensive treatment interventions are not typically required but simple advice from general health or social care practitioners can result in meaningful reductions. As such, NICE has recommended that ABIs be delivered opportunistically across a range of health and social care settings, although there have been questions about the extent and quality of their delivery in key setting such as Primary Care [17].

Binge Drinking

The UK government's Alcohol Strategy defines 'binge' drinking as exceeding 8 units (men) or 6 units (women) of alcohol on their heaviest drinking day in the week before interview. Binge drinking is not represented in diagnostic criteria because it is not specific to any level of consumption. In 2018 the proportion of adults reporting binge drinking on at least one day in the previous week was 12 per cent for women and 19 per cent for men [18]. However, binge drinking is not usually considered useful from a research or policy perspective since frequency of the drinking may vary widely, as indeed do drinkers' own ideas about what qualifies as 'binge' drinking. Nonetheless, heavy episodic drinking is associated with a range of harms, particularly acute harms such as accidents, injuries or effects on functioning.

The Diagnostic Perspective

Harmful Use

Harmful Use is a diagnostic category used in the International Classification of Diseases, tenth revision (ICD-10, see Table 1.1). It refers to a pattern of psychoactive substance use that is causing damage to health, which may be physical (as in cases of hepatitis from the

Table 1.1 ICD-10 criteria for harmful use [12]

Harmful use
A. There must be clear evidence that the substance use was responsible for (or substantially contributed to) physical or psychological harm, including impaired judgement or dysfunctional behaviour, which may lead to disability or have adverse consequences for interpersonal relationships.
B. The nature of the harm should be clearly identifiable (and specified).
C. The pattern of use has persisted for at least 1 month or has occurred repeatedly within a 12-month period.
D. The disorder does not meet the criteria for any other mental or behavioural disorder related to the same drug in the same time period (except for acute intoxication, F10.0).

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self-administration of injected psychoactive substances) or mental (e.g. episodes of depressive disorder secondary to heavy consumption of alcohol). However, the boundary between 'normal' or hazardous use and a diagnosis of harmful use is often not clear.

Dependence

Although nearly 40 classification systems are recognised between the first use of the term 'alcoholismus' by Magnus Huss in 1849 and 1941, the process of trying to standardise diagnostic systems for alcoholism really began in the 1940s [19]. Early versions of both the DSM and the ICD classifications clustered alcoholism with personality disorders and neuroses. Separate criteria for alcohol abuse and dependence first appeared in ICD-9 and DSM-III in the 1980s. The modern conception of the alcohol dependence syndrome was first articulated by Edwards and Gross in 1976 and has seven elements which 'exist in degree', thus giving the syndrome a range of severity [20]. The description was intended to clarify the clinical picture of alcoholism and stimulate discussion and research that would lead to better diagnostic criteria. The authors were attempting to separate dependence, which was seen as being biologically driven, from alcohol abuse/harmful use – that is, drink-related disabilities such as cirrhosis, loss of job and car crashes [19]. As Stockwell has pointed out, 'a person may, for example, develop cirrhosis, lose his job, crash his car, or break up his marriage through his drinking without suffering from the dependence syndrome' [21].

The experience of being dependent is influenced by characteristics of the individual, and by their environment and culture. The exact nature of the presentation will also depend on the psychoactive substance in question (tolerance and withdrawal may appear within a matter of weeks with opioids, but take years to develop with alcohol). The character of dependence may also change over time. Criteria based on the dependence syndrome first appeared in DSM-III-R in 1987. The ICD-10 criteria for diagnosing dependence are shown in Table 1.2, and the DSM-IV criteria were very similar.

The Core Elements of Alcohol Dependence

Narrowing of repertoire: The type and form of alcohol consumed is usually influenced by the people around the drinker and their emotional state. A non-dependent pattern of drinking may typically involve a glass of cold beer on a warm day, wine with a meal or cocktails while celebrating at a party. Once dependence develops, the main goal – albeit perhaps not consciously – is to increase the blood alcohol level rather than enjoying a specific type of alcoholic drink, and cost and strength may be more influential on the drinking behaviour. Once dependence becomes severe, the individual may need to drink simply to avoid potentially fatal withdrawal effects – for example, they may need to top up every few hours in order to feel normal and to function.

Salience of drinking: The non-dependent drinker is able to weigh up the importance of the choice to drink, and to judge whether other internal or external factors are more important than consuming alcohol. In contrast, for the dependent drinker the views of others about their level of consumption become less important, and the consequences less relevant. Ultimately, drinking becomes more important than family, work, hobbies or other life goals. The extent of this change in priorities gives a diagnostic clue as to the severity of dependence.

Increased tolerance to alcohol: The heavy drinker may observe that they can 'drink others under the table', and may be able to sustain a high blood alcohol content without appearing

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Table 1.2 ICD-10 criteria for dependence [12]

Dependence
Three or more of the following manifestations should have occurred together for at least 1 month or, if persisting for periods of less than 1 month, should have occurred together repeatedly within a 12-month period: (1) a strong desire or sense of compulsion to take the substance; (2) impaired capacity to control substance-taking behaviour in terms of its onset, termination, or levels of use, as evidenced by: the substance being often taken in larger amounts or over a longer period than intended; or by a persistent desire or unsuccessful efforts to reduce or control substance use; (3) a physiological withdrawal state (see F1x.3 and F1x.4) when substance use is reduced or ceased, as evidenced by the characteristic withdrawal syndrome for the substance, or by use of the same (or closely related) substance with the intention of relieving or avoiding withdrawal symptoms; (4) evidence of tolerance to the effects of the substance, such that there is a need for significantly increased amounts of the substance to achieve intoxication or the desired effect, or a markedly diminished effect with continued use of the same amount of the substance; (5) preoccupation with substance use, as manifested by important alternative pleasures or interests being given up or reduced because of substance use; or a great deal of time being spent in activities necessary to obtain, take, or recover from the effects of the substance; (6) persistent substance use despite clear evidence of harmful consequences (see F1x.1), as evidenced by continued use when the individual is actually aware, or may be expected to be aware, of the nature and extent of harm.

intoxicated. Steady levels of alcohol in the blood mean that the brain compensates by various homeostatic processes, and a greater level of alcohol is required to have the same subjective effect. This tolerance may also apply to sedative drugs such as benzodiazepines (known as 'cross-tolerance'), a fact that is exploited in the process of medically assisted withdrawal. The rate of development of tolerance varies considerably between individuals, and it may start to fade in the later stages of dependence.

Withdrawal symptoms: As dependence increases, so does the frequency and severity of withdrawal symptoms. Mild symptoms may begin to appear at any time of the day when blood alcohol levels begin to fall, but when dependence is severe and well established the individual experiences severe symptoms on waking (drenched in sweat, feeling very nauseous and a tremor so bad that it is hard to raise a glass to the lips). Many different symptoms are associated with alcohol withdrawal, some physiological (tremor, nausea, sweating, hyperacusis, tinnitus, muscle cramps), some psychological (mood disturbance, sleep disturbance, hallucinations) and some potentially very severe (seizures, delirium tremens).

Relief or avoidance of withdrawal symptoms by drinking: Alcohol withdrawal symptoms are unpleasant, and drinking more alcohol is a quick and effective way of alleviating them. In mild dependence the first drink can wait until lunchtime, but the severely dependent drinker often keeps alcohol by the bed to ensure it is readily available on waking.

Subjective awareness of compulsion to drink: 'Normal' drinking is characterised by a perception that the drinker can decide when to start, but more importantly, when to

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stop and how much to drink. In dependent drinkers, control is variably or intermittently impaired, and it becomes very hard to resist an alcoholic drink if it is available. Furthermore, once drinking starts it becomes extremely difficult to stop. The concept of 'craving' for a drink is often invoked, a sensation that is often strongly influenced by cues in the internal or external environment.

Reinstatement after abstinence: When a dependent drinker stops drinking for a period of time (weeks, months or even years), there may come a point when they decide to try alcohol again, usually with the intention of not repeating the mistakes of the past. Mildly dependent drinkers may manage to control their drinking with few problems, but the severely dependent often return to previous high levels of consumption within a matter of days.

Changes in DSM-5

Alcohol dependence has six diagnostic criteria in ICD-10, and in DSM-IV there are seven, with both systems requiring three to be present in the past 12 months for a diagnosis. Witkiewitz and colleagues have shown that the psychometric performance of both sets of criteria is very good, representing a unidimensional disorder across various studies and populations [22]. Reviewing his dependence syndrome ten years on, Griffith Edwards proposed two core elements for the alcohol dependence syndrome [1]: withdrawal and its attendant behaviour, including the subjective need for alcohol, salience and increased tolerance [2]; impaired control/loss of control [23]. In order to simplify things for clinical practice, the draft ICD-11 has proposed reducing the diagnostic guidelines for dependence from six to three, any two of which need to be present in order to make the diagnosis [9]:

(1) *impaired control over substance use* – that is, onset, level, circumstances or termination of use, often accompanied by a subjective sensation of urge or craving to use the substance.
(2) *substance use becomes an increasing priority in life*, such that its use takes precedence over other interests, daily activities, responsibilities or health or personal care. Substance use often continues despite the occurrence of problems.
(3) *physiological features* (i.e. neuroadaptation to the substance), as shown by (i) tolerance, (ii) withdrawal symptoms following cessation or reduction in use or (iii) repeated use of the substance to prevent or alleviate withdrawal symptoms.

The dependence syndrome appears to be a real entity, but not all the elements are equally consistent in psychometric terms and some may be redundant. Epidemiological data suggest the total of 11 criteria that make up the DSM-IV diagnoses of alcohol abuse [4] or dependence [7] represent a single dimension of alcohol problems along a continuum of severity, and so alcohol abuse is not an early stage of dependence. In DSM-5, alcohol abuse and dependence have been removed completely, and replaced by a broader disorder called Alcohol Use Disorder. This effectively merges DSM-IV alcohol abuse and DSM-IV alcohol dependence [9]. It includes the seven criteria used to diagnose dependence plus three of the four for abuse, adding in craving to bring it in to line with ICD. Reasons cited for this change [24] were:

- Confusion among health professionals about the use of the term 'dependence' (confused with 'physiological dependence').
- DSM-IV dependence had excellent psychometric properties, but abuse did not. Its natural history was not that of a unitary disorder.

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Table 1.3 DSM-5 criteria for Alcohol Use Disorder [26]

Alcohol Use Disorder
1. Alcohol taken in larger amounts or over a longer period than was intended
2. Persistent desire or unsuccessful attempts to cut down or control alcohol use
3. Great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects
4. Craving, or a strong desire or urge to use alcohol
5. Recurrent alcohol use resulting in a failure to fulfil major role obligations at work, school, or home
6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol
7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
8. Recurrent alcohol use in situations in which it is physically hazardous
9. Alcohol use is continued despite knowledge of a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol
10. Tolerance, as defined by either: • a need for markedly increased amounts of alcohol to achieve intoxication or desired effect • a markedly diminished effect with continued use of the same amount of alcohol
11. Withdrawal, as manifested by either of the following: • characteristic alcohol withdrawal syndrome for alcohol • alcohol (or a closely related substance) taken to relieve or avoid withdrawal symptoms

- Some individuals (known as 'diagnostic orphans') met two of the seven criteria for dependence but also failed to meet the threshold for abuse.
- Item Response Theory analyses show that most of the DSM-IV dependence and abuse criteria fall on a continuum, with overlaps of abuse and dependence items

The 11 criteria for AUD provide a continuum of severity along which the frequency of a harmful pattern of drinking can be mapped. Addiction is now identified on a dimensional scoring procedure based on severity – that is, the number of criteria present (mild AUD if two or three criteria, moderate if four or five, severe if six or more). This means that patients can be diagnosed if they meet only two criteria, and although this approach is consistent with the DSM-5 manual's overall philosophy of including subclinical phenomena, critics have argued that this will pathologise too many people. Epidemiological survey work in Australia suggests that use of the DSM-5 criteria (see Table 1.3) could increase the prevalence in substance use disorders as a whole, but a North American study found only a 10 per cent increase [25].

A Case for Advancing a Continuum Model?

Changes such as those made in the DSM-5, alongside wider efforts to identify and engage hazardous or harmful drinkers, may represent a significant shift away from the historically dominant disease model of 'alcoholism'. However, some argue that further work is still needed to recognise the broad spectrum of use and harms in a wider range of contexts [27],

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while others highlight that the disease model remains widely endorsed but carries a number of under-recognised costs [28]. Increasingly, arguments for a more explicit recognition of a continuum model have been made on the grounds of the individual implications for those who experience alcohol problems [29].

Alcohol-related problems remain a highly stigmatised issue, and as such it has been suggested that the disease model's claimed stigma-alleviating benefits have failed to materialise [30]. Reviews of differences in the causal attributions of mental health and substance use problems suggest that disease model beliefs do indeed seem to carry some potential for blame alleviation (i.e. the person is not to blame if they have a disease). However, these benefits are likely to be offset by other stigma-related attitudes and beliefs such as more desire for social distance (i.e. unwillingness to interact with someone) or stereotypes about perceived dangerousness. Indeed, a fundamental component of stigma and associated discrimination is the perception of perceived difference between groups, which may be reinforced by categorisations which imply fundamental differences such as between 'alcoholics' and 'normal' drinkers. Other potential costs associated with a disease model have been explored, particularly in the context of treatment and recovery. Disease-model-aligned beliefs have been associated with poorer treatment outcomes, lower personal agency and self-efficacy and lower help-seeking [31]. This has led to calls to explore the 'positive implication of continuum beliefs' to alleviate the stigma of mental health and substance use disorders [32].

However, while continuum beliefs may hold promise in the context of experimental studies [29], a practical question relates to how a shift in problem framing will be received at the population level. There is currently limited understanding about the extent to which the public may endorse continuum-type beliefs about alcohol problems, and how these may interact with stigmatised attitudes towards the issue. One German study found just 27 per cent of people agreed with alcohol problems as a continuum [32], while disease-model-associated views appear to be endorsed by closer to half of people within Western populations [33] and have therefore been argued to remain the 'dominant conceptual paradigm' for understanding addiction. Furthermore, efforts to educate the public or reach hazardous drinking populations may have been hampered by a failure to connect with people's personal experiences of alcohol use [34]. For instance, the CMO's revised recommended drinking guidelines appear to have had little if any impact on drinking behaviours, in part because people tend to feel they 'know their own limits', or believe that meeting their responsibilities means that their drinking cannot be considered problematic [35]. One mechanism which may have potential for success may be the use of personal stories or 'narratives' that implicitly emphasise the continuum nature of alcohol problems. For instance, stories that tell a range of experiences of problems beyond stereotypes such as those who hit 'rock-bottom', or that highlight how many people 'recover' through moderating their drinking. Epidemiological data show most people recover from alcohol problems, particularly those lower in problem severity, through 'natural recovery', with many people simply 'maturing out' of problems with age and accrual of more responsibilities [36].

In short, alcohol problems and their causes are complex and influenced by a range of factors ranging from biogenetic, psychological and sociocultural. Any attempts at simplistic categorisation or labelling run the risk of overlooking such attributional complexity and interactions with individual-level variability. As such, further shifts towards models of alcohol use and problems more fundamentally aligned with a continuum model may go some way to better reflecting this complexity, and in turn mitigating some of the pitfalls presented by past categorisations.

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