in sport will clearly be an area of ongoing contention and possible reform in order to minimise gambling-related harm.

This chapter on addictive disorders comprises two main sections, focusing on substance use disorders and gambling disorder respectively. Each of the sections will include a description of the criteria for diagnosing these disorders, information regarding the prevalence, age of onset, course and problems associated with these conditions, and a discussion of current approaches to aetiology and treatment adopting a biopsychosocial perspective.

Substance use disorders

LO 7.1

THE DIAGNOSIS OF SUBSTANCE USE DISORDERS

The current version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*-5; American Psychiatric Association [APA], 2013) includes a chapter entitled 'Substance-related and Addictive Disorders' that deals with problems stemming from the use of substances and engaging in gambling. The substance-related disorders comprise two groups: substance use disorders (which are the focus of this section) and substance-induced disorders (which include specific mental-health problems induced as a result of substance use, such as stimulant-induced psychosis and alcohol-induced depression). Substance use disorders are classified on a continuum from mild to severe. A 'mild' disorder requires the endorsement of two to three of the eleven criteria for substance use disorder; four to five criteria indicate a 'moderate' disorder and six or more a 'severe' disorder. The listed substances or classes of substance are alcohol, cannabis, hallucinogens, inhalants, opioids, sedatives (hypnotics or anxiolytics), stimulants, tobacco and other (or unknown) substances. Caffeine use can result in intoxication and subsequent withdrawal symptoms but is not classified as a substance use disorder.

While addiction to alcohol and opium have been well recognised for centuries, it was the work of British psychiatrists that set out the essential characteristics of the dependence syndrome with regard to alcohol (Edwards & Gross, 1976). Since that time, the dependence syndrome has come to be applied to all substances deemed capable of inducing physiological dependence (defined as tolerance and withdrawal) and/or psychological dependence. The earlier descriptions of dependence referred to 'alcoholism', which does not feature in the current psychiatric classification systems (APA, 2013; World Health Organization, 1993). Edwards and Gross (1976) provided a more precise description of an alcohol dependence syndrome consisting of behaviours such as priority given to drinking over other activities, a subjective awareness of a compulsion to drink, increased tolerance to the effects of the alcohol, repeated alcohol withdrawal symptoms, consuming alcohol to avoid withdrawal symptoms and a rapid reinstatement of dependence even after a period of abstinence.

This formulation influenced the third (APA, 1980) and subsequent editions of the *DSM* and is apparent in the diagnostic criteria for substance use disorder in the current version. These criteria represent a complex cluster of cognitive/psychological, behavioural and physiological symptoms. An individual must have at least

The oldest known Eastern games of Wei-ki in China and Go in Japan emerged around 2300 BCE. Playing cards originated in twelfth century China, reached Europe through Spain in the mid-1300s and were taken to the Americas in 1492.

Horse racing has a history dating to the times of Homer, Ovid, Herodotus and Xenophon. Although public races were common in eleventh century London, the sport of thoroughbred racing evolved from the horse-breeding interests of Henry VIII (1509–1547). Horse racing was common in colonial Australia, with the first meetings held in Sydney's Hyde Park in 1810. The establishment of the Melbourne Cup in 1891 consolidated the sport as a national icon.

The origins of lotteries and their various derivatives are found in early religious and civil decision-making processes. As Brenner and Brenner (1990) note, the drawing of lots was regularly used to divine God's will in guiding decisions related to resolving conflicts, selecting priests and civil servants, determining innocence versus guilt and the division of property or distribution of gifts. Between the fifteenth and eighteenth centuries, in the absence of banks and financial lending institutions in Europe and North America, lotteries were commonly used to raise revenue to finance public works, military ventures and town fortifications. This has continued to the present day, with lotteries financing the building of Sydney's Opera House.

The social acceptability of gambling has fluctuated over the years. The Koran and certain fundamentalist Christian denominations regard gambling as sinful, while others, such as the Catholic Church, are tolerant or actively utilise gambling for charitable purposes. Gambling has at various times been condemned and prohibited by the state in response to public disorder; exploitation through cheating; interference with military preparedness by soldiers wagering their weaponry and gambling rather than training; protection of the aristocracy and the maintenance of social class structures by ensuring that the lower classes did not win land and property; and the rise of the Protestant work ethic (according to which gain through minimal work and idle pleasures is frowned upon).

Today, gambling is an integral part of the Australian cultural ethos. The first government-run lottery began in Queensland in 1920. In 1956 poker machines were legalised in registered clubs, but only in New South Wales. This changed in 1990, when gaming machines were permitted in all other states except Western Australia, where they are limited to Burswood Casino. The first casino opened in Wrest Point, Tasmania in 1973, followed by casinos in the Northern Territory in 1979; Queensland, South Australia and Western Australia in 1985; the Australian Capital Territory in 1992; and New South Wales in 1995.

In terms of problem gambling, numerous anecdotal case histories of gambling behaviour leading to financial and personal ruin are chronicled by historians. Notable among these cases of problem gambling are the sixteenth century Italian painter Guido, the seventeenth century French poet Vincent Voiture and French philosopher René Descartes, the eighteenth century English writer and politician Horace Walpole and the wife of Louis XIV of France, Marie Antoinette. Exemplary descriptions of problem gambling are provided in Mikhail Lermentov's (1841/1979) 'The Fatalist' (found in his collection of short stories, *A Hero of Our Times*), Fyodor Dostoyevsky's (1866/1978) novel *The Gambler* and Alexander Pushkin's (1834/1999) short story '*The Queen of Spades*'.

THE DIAGNOSIS OF GAMBLING DISORDER

Despite this early recognition of problem gambling in literature, it was only in the psychoanalytic movement around 1914 that psychological interest in problem gambling emerged. The classification of problem gambling as a psychological disorder is relatively recent, with pathological gambling first appearing in the third edition of the *DSM* (APA, 1980) and being renamed as gambling disorder in the *DSM-5* (APA, 2013).

DIAGNOSTIC CRITERIA FOR GAMBLING DISORDER

Instruments such as the South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) and the Problem Gambling Severity Index of the Canadian Problem Gambling Index (PGSI-CPGI; Ferris & Wynne, 2001)

are frequently used in large-scale studies and clinical populations to identify possible cases of pathological gambling. The SOGS includes 20 questions assessing the severity of gambling on several dimensions including financial (e.g., 'Do you ever gamble more than intended?'), emotional (e.g., 'Have you ever felt guilty about the way you gamble or what happens when you gamble?'), family/social (e.g., 'Have people criticised your gambling?') and occupational (e.g., 'Have you ever lost time from work due to gambling?'). A cut-off score of 5 is used to identify the respondent as a 'probable pathological gambler'. In contrast, the PGSI-CPGI has nine items assessing gambling behaviours and consequences. It uses cut-off scores of zero for non-problem gamblers, 1–2 for low risk gamblers, 3–7 for moderate risk gamblers and 8+ for problem gamblers, out of a possible total score of 27. The PGSI-CPGI is now supplanting the SOGS as the screening instrument of choice.

In the *DSM*-5 (APA, 2013), gambling disorder is included in the chapter, 'Substance-related and Addictive Disorders'. It is defined as persistent and recurrent problematic gambling behaviour leading to clinically significant impairment or distress as indicated by at least four of the following criteria in a one-year period:

1. need to gamble with increasing amounts of money in order to achieve the desired excitement (which is akin to the tolerance criterion for substance use disorder)
2. restlessness or irritability when attempting to cut down or stop gambling (which is akin to the withdrawal criterion for substance use disorder)
3. repeated unsuccessful efforts to control, cut back or stop gambling
4. preoccupation with gambling (e.g., having persistent thoughts of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble)
5. frequent gambling when distressed (e.g., feeling helpless, guilty, anxious, depressed)
6. after losing money, frequent return on another day to get even ('chasing one's losses')
7. lying to to conceal the extent of involvement in gambling
8. jeopardising or losing a significant relationship, job, education or career opportunity because of gambling
9. relying on others to provide money to relieve a desperate financial situation caused by gambling.

These criteria refer to tolerance, withdrawal and a loss of control over gambling behaviour that are akin to the criteria for substance use disorder. Indeed, the diagnostic criteria for gambling disorder (and pathological gambling as it was referred to in previous editions of the *DSM*) were based on those for substance use disorder. Lesieur and Rosenthal (1991) point out that, with the exception of chasing losses, all of the diagnostic criteria for gambling disorder 'have their counterpart in alcohol, heroin, cocaine and other forms of substance dependence' (p. 7).

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Despite this, up until the *DSM-5*, pathological gambling was classified separately from drug and alcohol problems as a disorder of impulse control, along with conditions such as kleptomania (compulsive shoplifting), pyromania (compulsive fire-setting) and intermittent explosive personality disorder. These impulse control disorders are characterised by the repeated failure to resist an urge to carry out behaviours that result in harm to the individual or to others. Individuals report the presence of tension and arousal prior to the commission of an act and a sense of gratification (positive

reinforcement) and/or tension reduction (negative reinforcement) on its completion, followed generally by an immediate sense of guilt or remorse. In the *DSM-5* (APA, 2013), gambling disorder is no longer defined as an impulse control disorder but as a non-substance behavioural addiction under substance use disorder.

GAMBLING DISORDER AS AN ADDICTION

Historically, the diagnostic criteria for pathological gambling have undergone extensive revision since the introduction of pathological gambling as a disorder in the *DSM-III* (APA, 1980), with the criteria in the *DSM-III-R* (APA, 1986) modified to include symptoms paralleling those for substance use disorder: preoccupation, tolerance, withdrawal and loss of control. This perspective persisted with the *DSM-IV-TR's* (APA, 2000) continued inclusion of aspects related to substance use disorder but the condition nevertheless remained classified separately from drug and alcohol problems as an impulse control disorder. Despite continued debate and opposition by some researchers and clinicians, the *DSM-5*'s (APA, 2013) reclassification of gambling disorder in the same chapter as substance use disorder consolidates the tendency to conceptualise this behaviour as an addictive disorder. The *DSM-5* argues that research demonstrating the presence of significant similarities between pathological gambling and substance addictions in respect to clinical phenomenology, aetiology, comorbid conditions, treatment and neurophysiological functioning provides an evidence-based justification for considering gambling to be an addiction. Whether other non-substance repetitive behaviours (e.g., excessive eating, sexual behaviours, television watching and computer/internet usage) will be included in this category remains to be seen.

The *DSM-5's* (2013) approach reflects earlier historical and scientific influences that have shaped the development of the Addiction Model of gambling. The formation of Gamblers Anonymous in 1957 and its adoption of the principles and philosophy of Alcoholics Anonymous set the general foundation for the application of the Addiction Model to gambling. The collaborative relationship between Gamblers Anonymous and Dr Robert Custer, a psychiatrist, was subsequently instrumental in establishing the first hospital-based treatment centre for pathological gambling in the drug and alcohol unit of the Veterans' Administration facility in Ohio, USA. Following this, a number of hospital drug and alcohol facilities established specialised gambling treatment programs.

Most importantly, as mentioned, the phenomenological similarities between gambling and drug and alcohol problems have been used to support the Addiction Model of gambling (Lesieur & Rosenthal, 1991). Gambling is conceptualised as an addiction on the basis that individuals repeatedly engage in the behaviour to achieve a euphoric state of arousal equivalent to a drug-induced high or to escape negative mood states. The repetitive nature of gambling, its persistence in the face of adverse consequences, loss of control and features of tolerance and withdrawal appear consistent with the symptoms manifested by drug-addicted individuals.

Beyond shared symptoms, research has found similarities between gamblers and those with substance dependence in genetic abnormalities and neurobiological activity involving reward pathways (e.g., similarities in brain responses to gambling and drug-related stimuli), suggesting a common neurobiological process underlying these behaviours (Goudriaan, Oosterlaan, de Beurs, & Van den Brink, 2004; Holden, 2001). That 40 per cent of gamblers suffer comorbid alcohol abuse and 30 per cent of substance abusers meet criteria for pathological gambling adds weight to the Addiction Model. Overall, these findings have led to pathological gambling being described as a 'behavioural addiction'—that is, an addiction without the drug (Potenza, Steinberg, & McClaughlin, 2001).

Others, however, have highlighted differences between gambling and substance dependence, thereby arguing that the two problems should be kept distinct. Walker (1992), for instance, points out a range of differences between problem gambling and substance dependence, such as the fact that the withdrawal symptoms following cessation of gambling behaviour are typically mild and psychological (e.g., irritability, restlessness, depressed mood, poor concentration and obsessional thoughts) in contrast to the frequently more severe and physiological withdrawal symptoms associated with substance dependence, as well as the fact